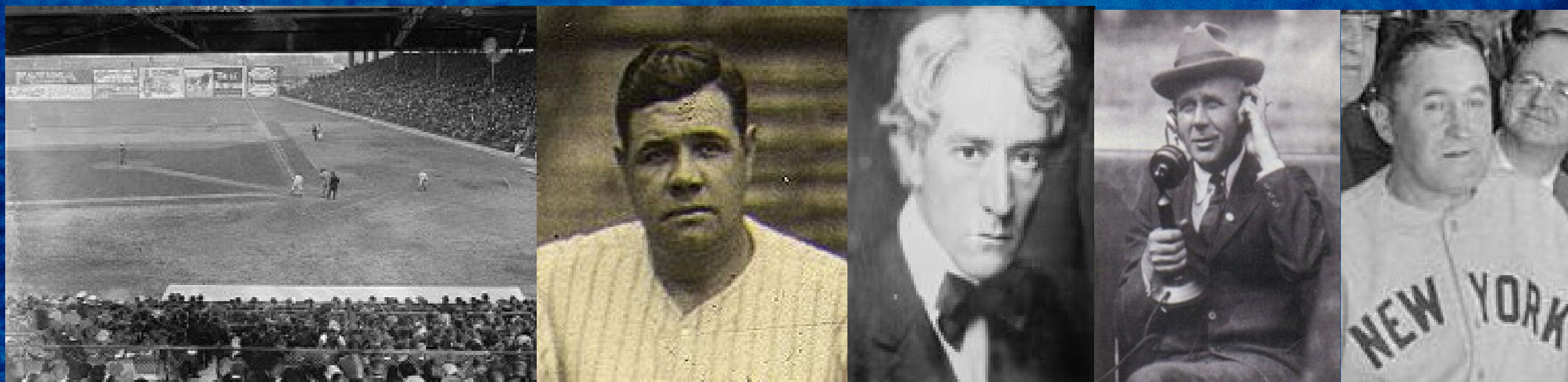
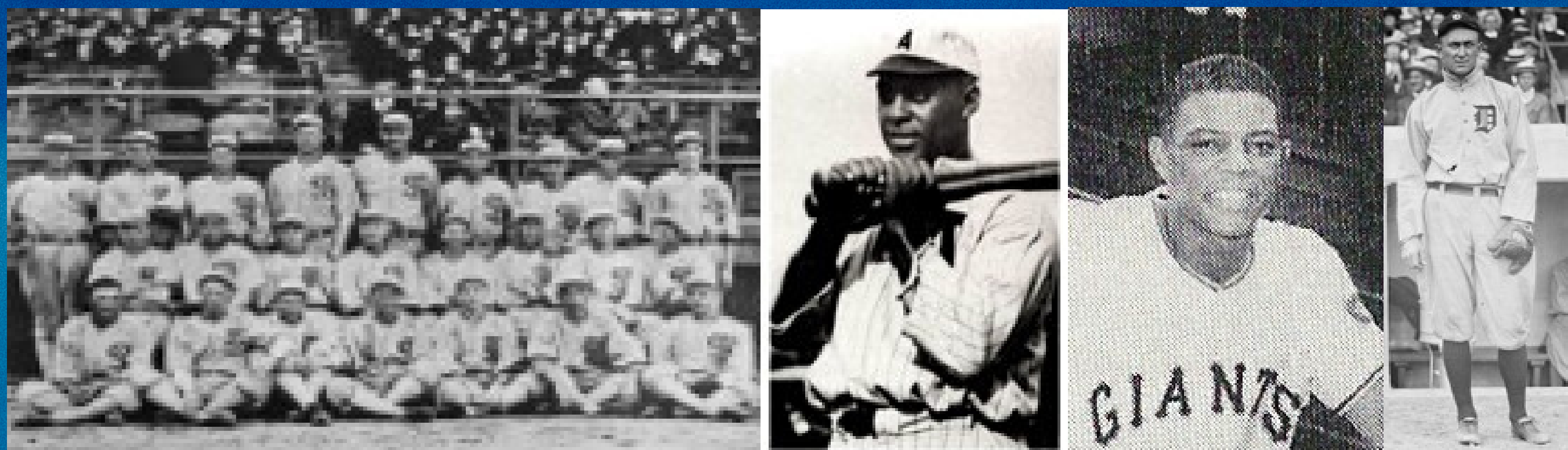


Bringin' Gas & Dialin' 9

A SEVEN SCORE ADDICTION
TO THE NATIONAL PASTIME
VOL I (1869-1949)



BALLPARKS
BIOGRAPHIES
ERAS
FINANCIAL MODEL
NEGRO LEAGUES
PROSPECTS
SABERMETRICS
TEAM HISTORY
WIN MODEL



Jason T. Powers

Deep Center Field Press

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Ballparks

Biographies

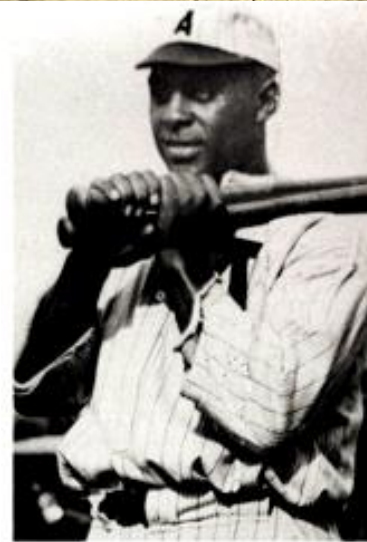
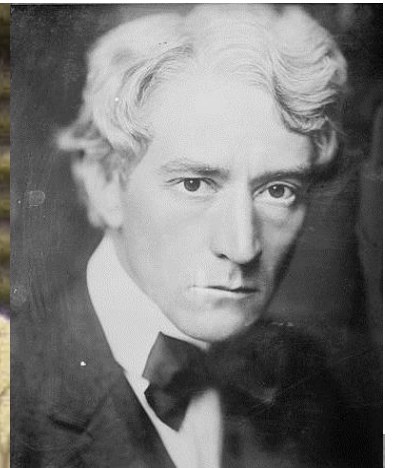
Eras

Financial Model ★★ Negro Leagues ★★ Prospects

Sabermetrics

Team History

Win Model

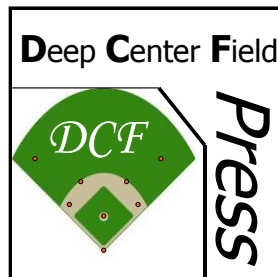


Volume I (1869-1949)
Jason T. Powers

**Bringin' Gas & Dialing 9:
A Seven Score Addiction to the
National Pastime**

Volume I (1869-1949)

Jason T. Powers



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For Mom
(1952 – 2011)

For all Reasons,
And all Seasons,
She Supported,
And Gave to my Causes,
Both great and small.
This is for You.
Your Love Endures.

Preface

Amongst my earliest recollections in life are sunny days spent at the little league ball fields in Winchester, Tennessee in the late 1970s and early 1980s. It was during this time my love for baseball grew and the desire to know the game increased almost daily. Playing was paramount to all other things at that particular age, in that town, and within that kid's world. Frankly, little else mattered more than playing and learning about the game.

During the latter part of each school year, the little league season started up. After signing up and trying out, I remember the practices were far from the center of town in a multi-field complex of rusty, small backstops, near a swamp, flies included. In those early practices, my first painful lesson was the concept of catching fly balls correctly, this after taking a couple directly off my head. (Which explains a lot of later troubles in my life.) I learned the basics of the game – hitting, throwing, fielding, and running the bases – but it never seemed like work. The skies never seemed cloudy and the ground never soggy. I enjoyed practicing with my first teammates and coaches in life that I remember more in spirit, than in fact.

Those were simple times.

When the season started, I trekked after school to the babysitter's house with my uniform, ball glove, and cleats in a plastic bag, with homework scarcely a thought. Being so anxious to play, I left her supervision shortly after putting on my uniform, and walked to the ball fields with the sun shining brightly in my face as I went down dusty side streets in Winchester, the sound of my Buster Brown footfalls echoing off Civil War era houses. The ball fields were close to the local racetrack where the noise of revving engines deafened on Friday nights, except for those early spring days when baseball dominated the scene.

I was usually the first one at the complex – two immaculate ball fields devoid of human life – but an energy was present already in the grass, the stands, and the fences encircling those fields. A sweet serenity existed all around, but just below that, was the happy tension of anticipation from envisioning all of us young ballplayers running around, while the grown-ups yelled and cheered us boys along. This was what I really liked the most: the waiting to play on these magical fields.

I'd sit up in the stands, now with my cleats on, with their echoed metallic resonations triggered by the bleachers, while looking at the fresh chalk, the scoreboard in center, the PA system, and home plate. Just the remembrance of an easier time, a purer place, and the raw and natural feeling of being a novice baseball player ready to make good on the practices with teammates and coaches is something I sorely miss in today's globalizing-by-the-nanosecond world.

I tried every game day to be at the park before anyone else.

Most times, I succeeded.

I watched the *Baseball Bunch* on Saturdays. Pete Rose, Johnny Bench, Ozzie Smith, and Mike Schmidt, among others, were my favorite guests on

teaching fundamentals and talking baseball. After that, *This Week in Baseball's* Mel Allen went over a week's worth of play in the MLB in his charismatic *How 'bout that* way. I still can bring to mind Mel's call of a 'Ranger in Danger' referring to a great outfield catch made by a Texas Ranger while slamming into the wall. Little did I know then how long Mel had been in the role of announcing the feats of baseball players, going back to the playing days of Lou Gehrig as Mel was the venerable voice of the dynastic, golden-era Yankees.

This particular time for me was 'the golden era' of baseball. As most fans do, we romanticize a point in our life, usually childhood, as the time when the game was perfect. We focus too on the one team our hearts were overjoyed to see. Closest to my heart: **The 1984 Cubs.**

I lived and died with them. I watched every game as a twelve year old, even those West Coast tilts that rarely got over before midnight, and long after any reasonable bedtime I might have had at the time. At this point, I'd been living in Indiana a couple of years after my mother and I had moved from Tennessee, and so, the Cubs were now my team to go to the mat for daily.

When I was not watching their games, I practiced with my grandfather, William L. Clark, Jr., in the backyard, with him hitting hard grounders, mammoth flies, or attempting to backstop my wild pitching while he crouched down with great difficulty. We talked for hours at a time about baseball, and life. He shared his times growing up in Gary, Indiana, as the son of a barber, and what his passion for baseball meant to him in his early years. He too had experienced the joys and heartaches of a lifetime that included the ill-fated run of the 1969 Cubs.

When the '84 season began, the 'Daily Double' of Bob Dernier and Ryne Sandberg tandem worked well on the April West Coast road trip, and never ceased to produce runs all season. They delighted my eyes with their speed on bases, the hit-and-run play, and the emerging power of Sandberg. Gary 'Sarge' Matthews batted 3rd, usually, wiggling his bat in that undulating manner and finding ways to get on in front of the sluggers. Then 'Zonk' Moreland, 'Bull' Durham, 'The Penguin' Ron Cey, and Jody Davis drove them home.

After a solid April and May, the Cubs traded for Rick Sutcliffe, unfortunately giving up a young and talented Joe Carter in process (who Negro League legend Buck O'Neil scouted), thus improving dramatically upon a staff that already had Dennis Eckersley, Lee Smith, Steve Trout, and Scott Sanderson to make ready for a long-desired playoff run. Unlike many of the past Cubs teams, thirty-eight since the 1945 World Series, this one had 'it.' I knew it, and my grandfather did too.

I watched the *Sandberg* game (now 30 years past) with Bob Costas calling the two home runs off Bruce Sutter during an amazing *Game of the Week* comeback win at Wrigley in June – and we finally knew, they were going to win the NL East. My grandfather and I watched game after game as the Cubs pulled closer to the then elusive goal of a winning season, and much, much more. I saw the last pitch Sutcliffe threw to clinch the pennant against Pittsburgh with Jody

Davis pumping his fist in the sweet triumph. And the celebration in the locker room with manager Jim Frey and the team relieved in ending a nearly four decade-old burden of getting to play in game 163...and beyond.

Thereafter, I remember 'conning' my 7th grade Social Studies teacher, Mr. Stewart (who later coached me in high school), into letting my classmates watch the Cubbies in the playoffs. The first two games in the early afternoon got me out of school work, and made the semi-hectic middle school life of a transplanted Southerner more bearable that year. The Cubs promptly stormed out to a 2-0 lead in the series.

But my heart broke in the fifth game of the National Championship series. My grandfather was rarely silent after any Cubs loss, but this time, he said nothing as if he knew it had been just magical enough to see these Cubs go this far. I firmly believe the Cubs win that series if they had three home games. That team destroyed San Diego at home and that is all there was to it...to my 7th grade way of thinking.

After the Cubs lost the 1984 NL championship series, I continued to watch their plights, often with joy, but it was never quite the same as that season was.

My grandfather passed away on July 4, 1986, 160 years after his favorite president had, Thomas Jefferson. William Clark was a baseball fanatic through and through. He tried out for the Brooklyn Dodgers during mid-World War II, and got a *Rickey* contract, but was soon off to duty in the Pacific once he turned eighteen in 1944. (Branch Rickey was known for bringing players on board without a signed contract. But those lucky to pass the 1st cut, were, gullible and excited enough, to think they actually had a position/contract. They were just another player in the hopper of his vast quality from quantity farm system.)

By April 1945, he landed his LCVP on the shores of Okinawa. Shortly after the war, William fondly remembered a day at Comiskey Park where the 'Splendid Splinter' hit a foul ball down the 1st base line. The ball went off his hand – that was driven just a bit out of reach – as he dived over his soon-to-be wife Mildred, much to her shock in the moment. If only he brought his mitt, he surmised, with a proud disappointment as Teddy Ballgame was his youthful idol. I miss them, one, and all. (Another near coincidence: Ted Williams passed on July 5, 2002.)

In 1988, Doug Basham, Ron Kessel Jr., and I went to Block Stadium in East Chicago to try out for the Pittsburgh Pirates. Doug was the flawless glove man with great plate patience; Ron was a true slugger with a nose-to-toes zone of hitting; and I was the wild lefty/outfielder with good velocity, but concrete feet. After arriving at 9AM, we warmed up for half-hour, ran the 60-yard dash, threw from right field to 3rd base, or around the infield under the watchful eye of scouts for the ball club – who were looking for 6.9 sixties and 90-MPH on the gun. None of us made the cut; but we did see the few that did, and they got to stay around for batting practice. Later, as we drove back home, we talked about how much better the next time would be while listening to classic rock on WCKG out of Chicago. As it turned out, I never tried out again. (The Toronto Blue Jays drafted

Doug's youngest brother, Ryan, nearly twenty years later. Ryan is still looking to make it to *The Show*.)

By 1990, I finished up my high school career and four years of playing high school baseball. I was never an elite player; never wowed any coaches or scouts; and had 'an attitude' that was not conducive to either helping my team win games, or garnering consistent playing time. But during the sectional playoffs, I made the best diving catch of my life in center field. It, for a fleeting moment, made up for the uneven way I played baseball in high school. And the promise I wished I had fulfilled, if not to myself, but to my grandfather's belief in me.

As college called, I found other interests (women amongst them) that bedeviled me rather quickly. In those pursuits, my batting average was far, far worse than any I had ever experienced in my first true love of baseball. But I kept on trying, nonetheless.

Where actually playing baseball was no longer a top pursuit, participating in fantasy leagues supplanted it, and took its place as a main diversion. I could envision in MLB players an ability to win games based on my selecting and managing such a group of 'my players.' The advent of the Internet only improved this ability to play, and so, it has continued to be a top, if sporadic, hobby, as unsuccessful as some fantasy seasons have been. (See: the *Bush Leagues* section.)

My love ebbed on baseball with the 1994 strike season. Somehow, when the players, ownerships, coaches, and managers failed me through their actions both on and off the field, I felt cheated on, and had great difficulty forgiving the transgression, likening it to a cheating girlfriend, or wife. It took me several years before I set foot in a ballpark again, losing interest in the exploits of the players, and avoiding the game for several years on the tube.

In 1998, the home run derby of Sosa and McGwire captivated fans, and brought back the excitement to many fans cast adrift by the strike. Baseball once again had its hook, its driver of excitement – the breaking of hallowed records – and it regenerated fan support: a real home run derby by the boys of summer.

Its purity then was rarely questioned; in the present, it is abhorrent to countless fans and media representatives. By 2005, the whole baseball world spoke of nothing but steroids. And my interest in baseball, again, took on a whole new meaning.

Baseball as a subject of discussion is far from original. Just about every angle has been covered by the elite *base ball* historians – that have countless personal books, old and rare magazine copies, intriguing memorabilia from defunct franchises, and stadiums and player interviews to work from – and, to wit, they are at the *very heart* of any journey into talking about baseball *at length*. It is hopeful that my research, if not as exhaustive as many others, provides a taste of the sound thoughts that others have introduced to the game. But more importantly, I hope to cover many topics in brief that are sometimes

overlooked, and some, that are always brought up, but with new angles and twists.

When I started out, I was tempted to do only a very short study about steroids and whether (or how) they applied to power surges seen in recent times. As my research about various things came about, I felt that was too cursory of an analysis to explain what has truly happened in baseball. And as time wore on, and information came together, my feelings changed significantly about the scope of the writing, and what should be the basis of the project.

Specifically, what should be included, relevant to the steroid topic, and what other issues I felt supported my overarching thesis: the evolution of baseball through various eras, and the relevancy they have in the 21st century, and the connections to America and its vibrant and progress-driven history.

As the project went forward, I surmised that I could spend years on each topic included, and write an entire book on just that topic alone. Though a heady ambition, I went back to what I was trying to accomplish: Reflecting a fan's perspective on the game, and utilize the research and histories compiled by those that have gone before me.

I ran into framework problems about halfway through the project. (This is not unheard of when approaching a history of baseball, or for that matter, any diverse topic.) Many authors use a decade-by-decade perspective. Others use biographical techniques to point to key figures, or only focus on one period. Some focus just on the statistics, and pictorial reviews of interesting figures in the game. Many others just pick one team, and their additions to the overall strategies and philosophies of baseball. I preferred to use a combination of all of these with some minor additions and modifications and with a trial-n-error approach never thrown away completely, and so, it may include stuff no one ever includes in their final editions. Hopefully, it works. But if not, I apologize.

This manuscript comprises various fields of baseball research: player and manager biographies; statistical analyses; baseball physics; team histories; evolution of baseball equipment; innovative new ideas; sports journalism; fantasy baseball growth; and, anabolic steroids, to name but a few. I felt it was necessary not to solely focus on one area, but to give more than a smattering, but not necessarily a definitive collection of information from all of these fields – with as much depth as I could muster for each area. There is considerable overlap; and that was partly the problem I had with structure. (That, and 19,000 players, and thousands of executives, managers, scouts, coaches, and umpires. Just a sentence on each of them is a 300,000 plus word document of little worth.)

So, by far, I did not covered every last detail there is to be seen. Many baseball experts have covered these topics before, more astutely, and with more depth and anecdotes to support their arguments made – and I thank them for doing the due diligence, and justice to the sport they love unconditionally.

An ultimate end was to consolidate certain facts and theories that have been espoused by experts and historians, utilize statistics and graphs to point out

trends, and address the wide-ranging field that is professional baseball. Conflicting reports exist – and I tried my best to sort out certain conundrums. Sometimes, I fell short – and that is solely my fault.

Additionally, I attempted to address thematic propositions: That United States history repeats itself; that eras should be separate and equal in their treatments; that America and baseball are evolving forces of nature that have failed, but also have far surpassed their originators' hopes. And they both march on – with the social upheavals, technological advances, and economic tides often mirrored, some induced, by the baseball field's daily box score. Or as historian Jacques Barzun once remarked, "Whoever wants to know the heart and mind of America had better learn baseball, the rules and realities of the game."

Baseball is much more than the game we see on the field. The romanticized verses of *Casey at the Bat*, *Tinkers to Evers to Chance* and *Take Me Out to The Ballgame* are a small part of the lore that we tie to the game. But beyond the lore, and the field, the statistics amassed, the physics, immutable, the social panorama conflicted, the people intertwined, and business and legal aspects that weighed on and evolved the sport significantly, there does lay real glory, and sometimes, truth.

As we see the game in front of us, the dark curtain hiding what is really going on is never really all that far from sight, even if we do not see it quite as clearly as fans. When a player makes the last out in a baseball game, '*The Hidden Game*' (Peter Palmer and John Thorn) begins anew for the next afternoon, evening, season, or even a decade to come. This fact certainly came out in many an author's analysis, or a ballplayer's biography, that the game discussed – Jim Bouton's *Ball Four* or Jim Bronson's *The Long Season* for excellent 'old school' examples – was not fully viewed by the public, even as sportswriters attempted to reveal it (or often, conceal it). The smoky, ill-lit rooms of owners' dealings or the precipitous downfalls of drug-abusing, womanizing, glorify-me players have been brought out into the light bit by bit via acid-tongued sportswriters. But nowadays, these crafty owners and their needy ballplayers *tweet* their escapades voluntarily. And so, these Men of Summer are now the Boys of the Facebook status update.

Overall, my goal was to set forth a foundation of basic understanding of those underpinnings of the game, and place steroids, home runs, baseball players, financials, and owners in their proper lights, when at all possible, and create a sharper picture of the course trekked in the 140 plus seasons of the sport. The overarching aspects of league play were also a goal. And at times, stand up for viewpoints not seen on the TV, in the print media, or via the information superhighway that is the Internet. Hopefully, I have supported my arguments, and added to the flavor of the '*Written Game*.' Maybe.

That is all any author attempts to do: to write what he sees from his perspective and try hard to include as many viewpoints in his research of a topic. As I went through this initial gambit of writing, I strove to include as much American history in concert with the spirit of the game tied finally to statistics,

pictures, and graphs. Any failures are again my fault – and I hope others forgive obvious shortcomings as best they are able.

Finally, the most troubling aspect to this project was title selection. For one, it is impossible to categorize this as a complete history, because it is not. Abbreviated, addressing a variety of topics, and far from an in-depth player overview of any merit. Statistics drove the project, but I felt it was not a statistical analysis solely. I delved into the business side of baseball, but it was not economics-driven project. Steroids, again, not solely about the steroids, yet it does put the topic in a different light as revelations still come to light daily. (Like May 20, 2010, a report of Floyd Landis, *Tour de France* winning cyclist, admitting (finally) to using performance enhancers. Or: October 2012, when Lance Armstrong's superman cape was stripped permanently off all his *Tour de France* titles.)

In the end, I picked two phrases that I thought were the defining characteristic of the pitcher/hitter confrontation: **Bringin' Gas and Dialin' 9.**

The ability to throw Cheese. High Heat. Smoke. The Hot Rock. Dialing it up. Number one. Going Powder River. As an erstwhile high school pitcher, I thought it was applicable to the thoughts I had: to come hard and direct from my research, put my thoughts to paper and attack the reader with statistics, graphs, and anecdotes like a fastball pitcher.

Dialin' 9 is a call for going long distance by a hitter. Taking him deep. Goin' Yard. Jacking it out. Lighting up the Scoreboard. A trip to Souvenir City. Leaving on a jet plane. Once again, the idea is to firmly crack the subject deep into the seats and tear the cover off the ball and look inside at 'the pill.' Both of these are ambitious goals, but no one gets anywhere without such motivation and belief.

As Branch Rickey, *The Mahatma* of baseball innovation (and judicious finances) said in a *Life Magazine* article titled, *Goodbye to Some Old Baseball Ideas*: "The most gripping moment in any field of sports comes when batter faces pitcher. Batter and pitcher eye each other. Psychologically one or the other is in command before the ball is thrown" (Goldman 2005, 115). In a recent book titled, *Sixty Feet, Six Inches* (Gibson, Jackson and Wheeler 2009, Ch. 1), this idea is expanded to a three-legged confrontation: physical, Gibson's heater versus Jackson's bat speed; strategic, a bases loaded, no outs with a two-run lead in a late-inning scenario; psychological, Gibson can run the ball inside, but if he misses to the meat of the plate, Jackson will pound it 450 feet if he sits only on a Gibby's fastball. (Gibson had a nasty slider that gobbled up hitters. Two pitches: that is all Bob ever needed.)

eBook 1st Edition Format, Research and Pictorial Credits

In 2014, I decided to split this project into two large volumes. This helped to create both a focus on the history of the sport, but to also include the most modern thinking in both volumes. So again, structure delayed the publication.

As the project progressed, it was designed for an eBook format – for the most part – and therefore, it includes a number of links to the websites embedded in the text. This includes direct linking to a particular cite. The first edition will be in a PDF (Adobe) format. This will change for future editions. (One hopes.)

Lastly, I would like to pass along my gratitude for the early assistance of Dr. Bryan Denham of Clemson University in forwarding his research articles, and Dr. Norm Fost for the encouragement to pursue this analysis of baseball.

I want to thank the enormous contributions of Lowell, Indiana public library and all of their staff, especially Sandy Fuller and Nell Fabish, for their assistance in obtaining books and articles and filling my every request. The Lake County Indiana library and the Purdue University library system for borrowing of books and their internet during the completion of the story I tried to fine tune in many places and situations.

The usage of the Internet – a must for all 21st century projects – came ‘for free’ via these public libraries. While this nation may deem cutbacks on many items, libraries are the storehouses of knowledge, past, present, and future, and need expansion while always remaining ‘free.’ (Thanks, in part, to a never-to-be-bored Benjamin Franklin.)

The Barnes & Nobles in Merrillville, Indiana for allowing me to research while drinking tons of soda and lattes in reading their books – for free. (Now closed due to other factors.) Buddy & Pals Bar and Grill in Crown Point, Indiana for the late nights and the live entertainment while I worked out graphs, charts, organizing this book, and their Internet. Not all free. (Yeah, I wrote *some* of this book at a sports bar. *A creature of habit.*)

The National Baseball Hall of Fame and Museum, the Society of Baseball Research (SABR) www.sabr.org, www.nlbpa.com (Negro Leagues Baseball Players Association), [Negro Leagues eMuseum](http://www.negroleaguesmuseum.com) (Negro Leagues Baseball Museum), www.baseballlibrary.com, Sean Lahman’s Baseball Database at www.seanlahman.com, www.baseball-reference.com, www.bizofbaseball.com and www.retrosheet.org for their vast resources of information compiled in a useful manner for any baseball project. Many others are included in the bibliography. Thousands of well-run sites exist – and they too are to be thanked – for keeping baseball vibrant as our oldest national sport.

The wonderful photos and illustrations of John Adams, Keith Allison, Scott R. Anselmo, Paul and Darth Bengel, Peter V.S. Bond, Amy Borden, Alain Carpenter, Sharon Chapman, Joseph De Leon, Ian Duke, Jeff Flowers, Dirk Hansen, Tracie Lynne Hall, Niklas Hellerstedt, Andrew Klein, Barbara Moore, Landon Owen, Steve Paluch, Chris Ptacek, Peter Roan, Kevin Rushforth, Darrin Schieber, Matt Schluder, Jeff Scott, Derek Semmler, John Shanahan, Jason Swain, John VanderHaagen, Salim Virji, Paul M Walsh, Bernard L. Waxman, and Michael H Wu.

The National Archives, the Library of Congress, the George H.W. Bush Presidential Library, and the Ronald Reagan Presidential Library for their histories

and collections of baseball and American history images that are for anyone's edification and expansion of personal knowledge.

(Credits Note: I took great efforts to credit all ideas found in research from many sources (SABR, for example). I put together their research with my own thoughts then found supporting references that bolstered the point made. These are credited in the numerous citations, the bibliography, and in the written work itself. I apologize completely if my work has left anyone unaccredited. Please contact for inclusion in future editions.

I included many important images. In doing this project, some books I scanned images to create a guide post for later writing and original thoughts, only later to replace them with *Library of Congress* collections, and other approved and credited (above) images. I have credited all sources as best I could. Again, please accept my apologies, and assist me in rectifying any issues that may surround image usage or its distribution.)

Thanks to Jamie Bray, Josh Brewer, Randy Kimmel, Glen Powers, Tim Richardson, Mark Richardson, Teresa Roberson, and Kevin Wheeler for their review of my work, some in whole, others, just a chapter or two. Many others too – my apologies if I left out.

My mother, Donna Mae Clark, who always supported the endeavors I took up, even the flawed ones. In late 2010, my mother faced a battle with metastatic cancer and early onset dementia that took her life on June 27, 2011. She was always a lover of baseball, a diehard Cubs fan, and her 'field of dreams' would include a 1:20pm tilt of watching the Cubs eventually pulling off a comeback with 'Go Cubs Go' playing out a WGN broadcast.

Her life's persistent and happy-go-lucky spirit inspired me to complete this work. I did the best I could, *mom*.

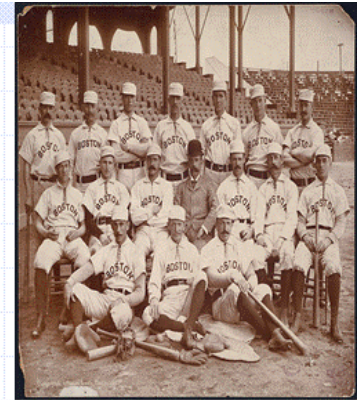
Lastly, anyone that taught me baseball appreciation that includes the authors I have read, and the people I have met and discussed the game with over the years, and during the course of this enjoyable project.

Too all, I owe it to Bring the Gas. Dial Me Up, if you can.

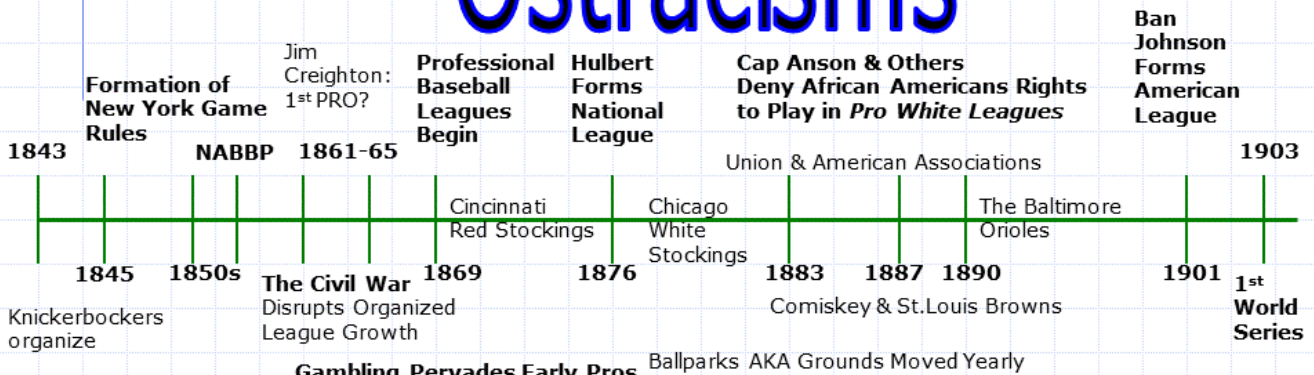
Chapter 1: Grant Era (1869-1907)

- ◆ Elysian Fields
- ◆ Knickerbocker Club
- ◆ Cartwright & Adams
- ◆ NABBP (NAPBBP)
- ◆ Professional Baseball
- ◆ Gambling & Competition
- ◆ Locating Ball Fields
- ◆ Refining Rules
- ◆ African Americans Banned

Grant ERA: Origins & Ostracisms



19th century Baseball



Best & Unique Players: Jim Creighton, Fergy Malone, Al Pratt, Harry Wright, George Wright, Ross Barnes, Deacon White, Cap Anson, Cal McVey, Paul Hines, Charles Comiskey, Wee Willie Keeler, King Kelly, A.G. Spalding, Tommy Bond, Candy Cummings, Kid Nichols, Larry Corcoran, John Clarkson, Monte Ward, Hoss Radbourn

We are a band of baseball players
From Cincinnati city.
We come to toss the ball around
And sing to you our ditty.

Opening verse to *The 1869 Cincinnati Red Stockings* theme song – From *The Official Encyclopedia of Baseball*, 5th Revised Edition.

Baseball from its outset has been a game of changing rules, conflicting tides, curious legal rulings, and player ostracisms that have affected the game forever. Even the origins of who exactly invented "base ball" are muddled by differing opinions, going back to a special committee appointed in 1906 which decided in December 1907 that Abner Doubleday was the progenitor of the game in 1839. This conclusion ignored several others, namely, Alexander J. Cartwright's 1845 formal rules for the 'New York Game', and plenty of ancillary evidence supporting the games' origin pre-existed either man's notion of the sport (Danzig and Reichler 1959, 21-24). And others, in Cartwright's era, that could lay legitimate claims to the title: "The Father of Modern Baseball."

This special committee included men at the very root of the professional game of baseball including the 1st, 3rd, and 4th presidents of the National League. Yet, when pressed by the legendary Albert G. Spalding, and his introduction of one witness, Abner Graves, a boyhood acquaintance of the future Civil War major general in Doubleday, they concluded a man scarcely considered in any regards to baseball had 'invented' the game which millions upon millions have adored to the present day. This after 36 years of its existence as a 'professional' game!

At least in Colonial America, the game could be traced back well into the middle 18th century, when a pirated copy of an English title called *A Little Pretty Pocket Book* by John Newberry, was republished by Hugh Gaine in 1762 with the *Pocket* omitted from the title. In it, the term "base-ball" and an illustration depicts the game, crudely, but identifiably, as played by children (Danzig and Reichler 1959, 27). Later, other titles came out in the early 19th century in Paris, London, New York, New Haven, and Boston that tell of the rules and/or similarly calls the game "base-ball", "rounders", "base", "cat", "one old cat", or "goal ball", while using the scoring rules of cricket, or a modified version of cricket to suit the equipment of players of various levels.

On the world stage, English author Jane Austen wrote of base-ball before the 19th century while equally renowned American writer and dean of Harvard Medical School *Oliver Wendell Holmes Sr.* (1809-1894) spoke of playing the game at Harvard while Andrew Jackson was becoming the 7th U.S. President in 1828. The Lewis and Clark expedition, after reaching the vast Pacific, utilized a "prison base" game with the Nez Perce Indians in the summer of 1806 (Fausz 2013). This all leaves aside the appearance of 'stick and ball games' long prior in Egypt (McNeil 2006, 3), Medieval Europe, and Asia (Holway 1989, 14).

(Side Note: *Oliver Wendell Holmes Jr.* (1841-1935) became the most famous American adjudicator of the first half of the 20th century. "Right or wrong, an opinion from Holmes was like Moses delivering the Ten Commandments" (Snyder, *A Well-Paid Slave: Curt Flood's Fight for Free Agency in Professional Sports* 2006, 21). Holmes later weighed in on Federal Baseball Club, Inc. v. National League of Professional Baseball Clubs, 259 U.S. 200 (1922) with a decision that baseball did not engage in "interstate commerce," and thus, not regulated by federal anti-trust laws. A source of conflict throughout the 20th century in baseball started with this landmark ruling.)

The Organizers of American Baseball

Alexander Joy Cartwright (1820–1892) a bank clerk/financial advisor/fire chief drew up the first identifiably 'modern' rules for baseball – including three strikes and three outs per "hand" (Danzig and Reichler 1959, 33)- and the first recorded game was played under those rules in Hoboken, New Jersey in June 1846. (Historians Palmer and Thorn reflect a first box score was recorded several months prior, October 25, 1845, in the *New York Herald*. Similar in fashion as cricket games were scored (Palmer and Thorn 1984, 9).) The Knickerbocker Club, which was officially formed on September 23, 1845 (Morris, *But Didn't We Have Fun?: An Informal History of Baseball's Pioneer Era (1843-1870)* 2008, 26), played in these games.

In that initial game, the Elysian Field players for the Knickerbockers and the New York Nine were: D. Anthony, H. Anthony, Tyron, Daniel Adams, W.H. Tucker, Birney, Turney, Pauling and Avery, for the Knickerbockers, Davis, Winslow, Lalor, Thompson, Case, Trenchard, Murphy, Ransom and Johnson, for the New York Nine. New York won 23 to 1 in 4 innings and several years would pass before any significant recorded observation was made about the new version of the future National Pastime (Palmer and Thorn 1984).

Yet, a more realistic version has one Dr. Daniel Adams as a driving force behind the creation of the greater particulars such as field size and orientation, 'foul' grounds, and the formation of the baseball out of horsehide. Adams was a founding member of the Knickerbocker club, when formed in 1843, and too played in that first game at Elysian Fields in Hoboken (Morris, *But Didn't We Have Fun?: An Informal History of Baseball's Pioneer Era (1843-1870)* 2008, 10).

Cartwright's influence is overstated, but he did assist in formalizing the rules of 'The New York Game.' Most of these rules had to do with peripheral things like attendance of the players in a timely manner, reflecting the non-competitive nature *then* of the sport (Morris 2008, 10).

Whether by luck or astute observation, it was Adams who determined 90 feet was an appropriate distance for the space between the bases, nine men would play the field, put outs would be made to the bases (eliminating "soaking" – throwing at the player) and umpire(s) had final say so on all appeals made to them. (Cartwright is again alleged to have umpired the first game; and handed out baseball's first fine of six cents for swearing (Kaplan 1989, 34).)

Adams was a more technical, innovative spirit than Cartwright – credited for the 42 paces (3' steps) between 1st and 3rd and home and 2nd bases, utilizing the ideas of a Scottish soldier in forming the baseball out of horsehide, and the creation of the shortstop position (Morris, *But Didn't We Have Fun?: An Informal History of Baseball's Pioneer Era (1843-1870)* 2008, 31). Adams too became President of the Knickerbocker Club and the governing officer of the NABBP (National Association of Base Ball Players) in the middle 1850s.

Adams cemented most of the field design and large-scale organization; whereas, Cartwright should receive credit for bringing together the players and to

the 'strict' adherence to a set of rules, (borrowed as they undoubtedly were) from the prior writers on this of many childhood games.

Much of the 'Knickerbocker Rules' or Cartwright's initial ground work was likely borrowed from Robin Carver's 1834 *Book of Sports* as was pointed out by the diligence of a White Plains, New York Library chief of research, Robert W. Henderson (Danzig and Reichler 1959, 26-27). With the official development of a 'team', the Knickerbocker club brought baseball to an "organizing effort" by the mid-1840s. (Which might be the only point historians are likely to agree on in near unanimity.)

For Cartwright's efforts, he was on the move; first to the California gold rush by July 1849, then to Hawaii (then called the Sandwich Islands) by late August 1849 (Menke 1963, 70) while also recovering from a bout of dysentery (Historic Baseball, Cartwright Bio). Cartwright semi-retired in Honolulu, Hawaii in becoming a respected advisor to King Kamehameha V, and his successor, King Kalakaua, while assisting as fire chief on the big island (Historic Baseball). Babe Ruth visited long after Cartwright's death in 1892 to commemorate his contribution to the origins of the game. Cartwright was placed into the new Hall of Fame in 1938, at the urging of his grandson, Bruce. Cartwright's most sustainable baseball connection came through his old boss, Daniel Ebbets, father of Charlie Ebbets, Sr., who built Ebbets Field while owning the Brooklyn Dodgers (Baseball: A Film by Ken Burns 1994, Episode 1).

The Three Boroughs League and 1858 All Stars

In the 1850s, baseball was developing in this New York womb, refining itself from just a one-off, social event into a more frequent, league-destined future. In 1853, the ball by rule took on the usual modern weight and size, rounding to form at 5 to 6 ounces with a 2 ¾ to 3 ½ inches in diameter requirement (Orem 1961, 12). The exuberant nature of the game took to the headlines as baseball was called "healthful" and featured in *American Pastimes* by the 1860s because of the exploits of the Atlantics, a dominate early team.

Yet, it was the formation of a league – for our purposes, the Three Boroughs League – that firmed up the nine innings design by 1856, eliminating the games to be play to 21 runs, tallies, or aces (Orem 1961, 12). This league centered on the pre-consolidated New York area of Manhattan and Long Island (Queens and Brooklyn) as Daniel Adams called forth a "Baseball Convention" in December 1856.

From the convention, the Three Boroughs League came to pass in 1857:

Knickerbocker	Eckford	Harlem
Gotham	Baltic	Continental
Eagle	Bedford	Excelsior
Empire	Harmony	Union
Putnam	Olympic	Nassau
		Atlantic

After a year of play, more teams cropped up, wanting to join the "healthful" game. At a January 1858 meeting, the remaining thirteen clubs from 1857 were joined by an additional thirteen for league creation (Orem 1961, 16). Bedford, Harmony, and Olympic went defunct. The 1858 additional teams are as follows:

The 1858 Three Boroughs/New Jersey Entrants

Mutual	Stuyvesent	St. Nicolas
Continental	Hamilton	Oriental
Metropolitan	Pastime	Liberty (NJ)
Columbian	Monument	
Osceola	Amity	

At this point, the league "schedule" consisted of 5-10 games for a season, very much like an employee league in the *information age*, where undoubtedly finding time to enjoy the pastoral, outside play as a male adult was hampered by bills, family responsibilities, and other social activities with spirits aplenty. (Why we incorporated games with "spirits" – when and where allowed – thus a running theme for baseball advertisement and greater growth was born too.)

More often than not, the teams failed as their interests or obligations stop full league participation. Nine of the original thirteen teams competed in 1857 (Orem 1961, 17). The Atlantics went undefeated, twice defeating the Putmans and Eckfords; league play lasted from June 8th to November 6th; and, the Gothams and Eagles scored a league best 43 runs for a softball score, while the Atlantics and Putnams struggled to low of 3 runs, reflecting better defense, superior strategy, or more likely: ineptitude at the plate for that day.

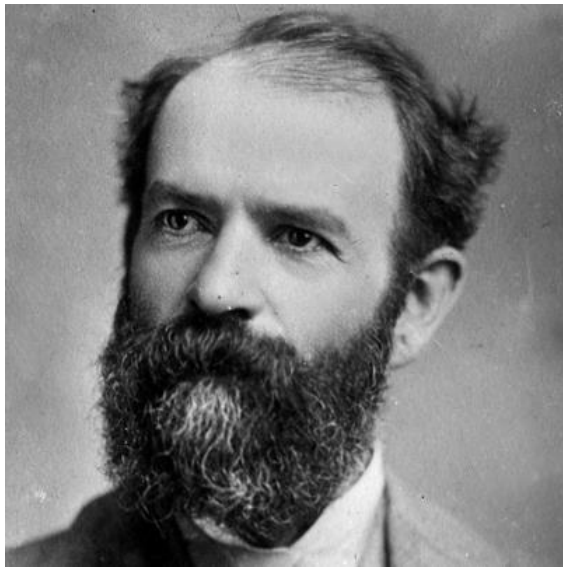
But this league created the first desire to showcase the best talent as an all-star challenge was engaged in 1858 between the Brooklyn Borough versus New York proper. This match required \$.50; was postponed due to weather; and was played near Flushing in Queens (New York), reachable by various ferries routes. 4,000 spectators eagerly showed up on a cloudy June 20th in 1858. The ladies were welcome, mostly players' wives; but the "base" element (Orem 1961, 19) was present as three-card Monty carnivalized this nature of the event.

All of this contradicts the notion of Doubleday's 'invention' of the game. Yet, like other curious aspects of the game, the truth is difficult to ascertain completely. And even with the research done upon request by the commission, it made a more interesting mystery for the principals in charge of reporting the outcome. (Evidently, the chairman of this commission, A.G. Mills, 3rd National League President, was a long-time friend of Doubleday yet had no idea about Doubleday's inventing the game, years after Doubleday's death. Yet that did not stop Mills support of the 1907 decision (Danzig and Reichler 1959, 31).)

Cartwright's role was less profound, but more certain than Doubleday's. While Daniel Adams, Duncan Curry, and William Wheaton also have their legitimate claims to founding and creation of the modern baseball game (Nucciarone 2013). This sole subject, undoubtedly, could be a book unto itself as many invention and origin stories are in American industry.

While baseball was just a content newborn with various claims to its parenthood, America was entering adulthood and its first crisis of maturation and existence since the Revolution. The seeds of the Civil War were sown in the Three-fifths Compromise and the abhorrent continuation of slavery, predominately in the South. The 1857 Dred Scott Supreme Court case was a priming charge lit before the South took to arms against the North.

With war, ideological and political breaks cemented; and a radical reorganization of the Union ensued. The Civil War destroyed and divided and curtailed social and economic growth in many respects. It pitted brothers and close friends against each other – not over the “slavery issue” - but over the



existence of the Union, and the laws that would rule the land henceforth. As sides erased families, scorched earth, and Lincoln broke bondage by Emancipation, baseball adapted and spread from a guild and collegiate association to a universally democratizing force, “creative destruction” if ever there was one. (Lincoln played “town ball” from youth to the White House lawn.)

From the war’s blood and ashes, General Ulysses S. Grant was elected president while Reconstruction was driven by iconic business names: Carnegie, Mellon, Morgan, Pullman, Rockefeller, Vanderbilt, and Ward, amongst a short list of ‘robber barons.’ Baseball soon saw its share of

business magnates of renown over the years to come as the baby grew teeth, and tasted financial fruits for the first time. (President Grant attended the New York ‘Gothams’ first National League game on May 1, 1883 (Thorn 2014).)

(Pictured above) Jay Gould (1836 -1892): Railroads, gold panics, and the Western Union Telegraph services were all in a day’s work for this robber baron. (*Bain Collection, Library of Congress.*)

1.1. Professional Baseball Begins

As with many exciting and innovative ways to pass time, soon enough, someone figures out that people will pay to see “their” team defeat the other side. As a result, to acquire, or keep talent, payments became a necessity, even if against the ‘official’ NABBP rules. Organized baseball most likely first professional player: pitcher Jim Creighton for the Brooklyn Excelsiors in 1859 (Morris, *A Game of Inches: The Game Behind The Scenes* 2006, 179). Another name synonymous to baseball growth, Al Reach, was an early pro in the 1860s.

Soon, whole teams were paid in various ways: offered a percentage of the gate, off-season/off-the-field do-little jobs (in the IRS department (Morris, 179)), or playing as “revolvers”, hired gun services. (Revolving is recruitment from other nines to play in games – the best of the best from the rest.) But most

incentives were kept fairly quiet; or under the table away from those that found such practices unacceptable – or envied – the amounts being paid for such circumstances. Those thoughts morphed quickly enough when the Cincinnati Red Stockings of 1869, most famously, announced their intent to pay all their players a salary. And as with all paying practices, managing said talent comes immediately into play.

Harry Wright (1835-1895) came to be influential first as a young observer, then as a ballplayer, and ultimately, the player/manager of those dominant Cincinnati Red Stockings in the late 1860s and the Boston Red Stockings in 1870s. His first connection took place with the originator of the Knickerbocker team, Alexander Cartwright, while growing up as a son of a professional cricket player in Hoboken, New Jersey in the 1840s. Harry's father, Samuel, worked at the St. Georges Cricket Club in New York while all of his sons grew up with cricket and baseball fever. In 1858, at 23, Harry Wright joined up with Knickerbocker club as the game was evolving into a more organized concern across the eastern United States under the National Association of Base Ball Players (Allen 1950, 12-13). He continued playing both baseball and cricket well into the 1870s, but found his influential calling as the premier player-manager of the *Grant Era*.

After moving to Cincinnati in 1866 and taking a position at the Union Cricket Club, Wright soon ran the baseball operations, acquiring talent from the east, and fielded a strong team. (Losing rarely; one loss came against the Nationals of Washington in 1867, a dominant team in the post-Civil War games.)

In adding one of his younger brothers, George, the Red Stockings became an openly salaried baseball team in 1869 amidst the National Associations' still classifying the game as an amateur affair while many teams had paid players to join their squads to outdo other teams for nearly a decade (Allen, 15). George earned the highest paid at \$1,400 for nine months, seven times the yearly wages of an ordinary man (Baseball: A Film by Ken Burns 1994, Episode 1).

These salaries attempted to mitigate the usual problem of gambling. With adequate pay, the hustlers and gamblers could not as easily buy off players, since each player could earn a salary (from the gate or a flat rate), and thus, was attached to furthering the fortunes of his team. Better team, more money, from more crowds, in theory, and hopefully, devote practice time to improve skills.

Harry Wright built his professional juggernaut, backed by team president Aaron Champion's stock offering, in winning 147 of 160 games while in Cincinnati from 1868-1870. Although, this initial professional team *barely* broke even financially, and soon, Champion was ousted from a fiduciary position. The team too splintered apart shortly after losing to the Brooklyn Atlantics in extra innings (Baseball: A Film by Ken Burns 1994, Episode 1). The fan appeal and cash flow crashed (such as it was) after a boom time of 92 straight wins. But the baseball 'success model' was set up despite the abysmal finances.

When the 'Professional' tag was permanently added to the association, Harry took over the operations of the Boston Red Stockings in 1871, finishing

first in four of five total seasons of the National Association (the pre-cursor of the National League) with his much younger brother George playing shortstop on those teams. Harry Wright played the outfield as well, the oldest full-time outfielder in the 1871 association by 3 years, and pitched sparingly for his championship clubs. Harry's fielding was amongst the best in overall percentage and his singles bat was adequate in 1873 and 1874, while into his late 30s, then a ripe old age. Among his players in Boston was a man recognized later for his century-old sporting goods empire: pitching great Albert Goodwill Spalding.

Best-selling baseball novelist and historian Darryl Brock sums up Harry Wright, the player and manager:

"A rare second-generation professional athlete, Wright was universally respected for his dedication and integrity. Playing center field – he would hit .493 and serve as the relief pitcher in 1869 – 'Captain Harry' was equally skilled as a field tactician and handler of men. He pioneered many tactics now accepted as fundamentals, such as shifting fielders, employing defensive signals, backups and cutoff men, and place hitting in order to advance runners." (Bresnahan 2006, 13)

With the formation of the National League in 1876, Harry Wright lost several of his star players – P Al Spalding, 1B Cal McVey, 2B Ross Barnes and C Deacon White to the Chicago White Stockings (a.k.a. the Cubs in the 20th century) – but overcame the setback and won the league in 1877 and 1878, his last championships in Boston. He continued to manage until 1893 in Philadelphia (most years), but never won another league title. Wright's lifetime record of 1436-920 is considerable, spanning the first four decades of professional baseball, amassing 6 titles in these first professional leagues.

George Wright, who played the light-hitting, but solid-fielding shortstop to the mold, later managed the Providence ball club in the 1879, finishing first in his only managerial reign. (Baseball HOF inductee in 1937.) The youngest of the Wrights – Samuel – played in 12 games scattered over 1876-1881 seasons.

In 1953, Harry Wright gained induction into Major League Baseball's HOF, 58 years after his death on October 3, 1895 in Atlantic City. The Cincinnati Reds belatedly inducted Harry Wright into their Hall of Fame in 2005 (Reds Hall of Fame Museum).

If "Doc" Adams, Cartwright, and Wright are the founding fathers on the field, then **Henry Chadwick (1824-1908)** was the essence of a founding father off it. As the first full-time sportswriter in baseball, Chadwick initially wrote columns for cricket matches in *The New York Times*. As a child, Chadwick had played rounders, but became intrigued with the development of baseball in 1856 after watching a good game (Baseball Library 2006, Henry Chadwick). (Apocryphal.) He saw the game as "uplifting" and "fast-paced" like American life (Baseball: A Film by Ken Burns 1994, Episode 1).

In 1857, Chadwick reported on the first organization – NABBP – that consisted of 24 different teams around the New York area (Menke 1963, 71). Initially, the games played were free to see and expenses were handled by these clubs. But when a championship series was held, the costs to rent a racetrack for

the finale led to a 50-cent admission fee. Once again, the capitalistic desires of the owners, managers, and players were forged, and the growth of clubs decidedly influenced by it, as by 1867 there were 237 ball clubs in Northeast America (Menke 1963, 72). Little wonder the first amateur organization ceased to function by 1871.

On August 16, 1870, Chadwick witnessed the exploits of Fred Goldsmith, who threw the first curve ball in a demonstration while in the same timeframe the Cincinnati Red Stockings lost their first game since turning professional (Menke 1963, 78). This feat, tested by physicists in lab experiments and considered "an illusion" by naysayers, such as *Life Magazine*, is a cornerstone of nearly all pitchers' repertoire, the breaking pitch. (Candy Cummings laid claim to this fame of throwing the first curve in an 1867 amateur game. Chadwick and Wright maintained this pitch saw use as early as the 1850s (Martinez 1996, 21).)

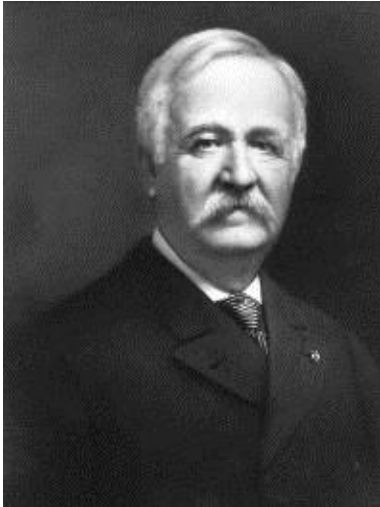
Through Chadwick's urging and influence, the baseball game was consistently modified via rule changes, and improved upon through the abolition of gambling by the players. Chadwick's writing became instrumental reading for any fan to know about the stars of the game, as he wrote for the *Spalding Guide* for nearly thirty years. Chadwick's interest in sports included a wide breath of experience from chess to yachting while his personal pursuits revolved around the performing arts. Henry Chadwick was elected to the Baseball HOF in 1938, honoring his vast achievements in fostering the game through his writing, rule modifications, box scores, and the scoring of the game. Every generation of sportswriter owes his position to the industrious work of Chadwick: "The Father of The Language of Baseball."

1.2. A More Permanent League: Business, Rules, and the Color Line

On February 2, 1876, **William Hulbert (1832-1882)**, former grocer, coal merchant and Chicago Board of Trade member (Allen 1950, 28), founded the National League with the aid of Albert G. Spalding, Harry Wright (as its secretary) and Morgan Bulkeley (1st National League chairman and future governor and U.S. Senator of Connecticut (A. S. Zimbalist 2006, 17)). Hulbert's league eliminated any player control or interference over the mechanisms of business, contracts, rules, or disciplinary decisions. His overriding idea was to keep together the league as a monopoly. This action followed from the tumultuous ride of National Association of Professional Baseball Players (1871-1876) and its battles for respectability in light of countless gambling rings, fighting, drunkenness, and contract jumping (Danzig and Reichler 1959, 42-43). In 1877, Hulbert took over as President of the National League until his death in 1882 after a one-year stint under a do-nothing Bulkeley.

Hulbert first faced down a 4- man gambling ring led by Louisville Grays star pitcher Jim Devlin who even wrote Harry Wright for assistance. None came. Hulbert banned the liquoring Devlin for life, which came to an end in 1883 at age 34 (Burns and Ward, *Baseball: A Film by Ken Burns*, Episode 1).

With Hulbert came the integrity and business sense that was ultimately needed to keep a league in operation, and maintain enough support (even when ball clubs reneged on agreements) to further the game along. Later, rival contingents from the American Association led by H.D. McKnight and Justus Thorner, the Union Association guided by Henry V. Lucas, and the Players' League presided over by Colonel A.A. McAlpin were rebuked, but not without a price. The wildly fluctuating fortunes of owners and players alike during the formation of these opposing leagues and the ensuing battles (Danzig and Reichler, 48-53) meant smooth operations were far from a certainty.



The American Association (AA) was the strongest of the NL competitors, due in part to its acceptance of Sunday baseball in 1882 which the National League disallowed through "blue laws" (especially in Pennsylvania until 1934 (Morris, *A Game of Inches: The Game Behind The Scenes*, 343)). A settlement on a 'National Agreement' to maintain territories and avoid player poaching was entered to assist both sides. (The liquor along with a \$.25 admission price helped the AA cause too at that moment.)

Morgan Bulkeley (left): Figurehead of the fledgling National League. Hulbert was the real force behind the league's survival.

The agreement on boundaries was necessary as were a player's contract validity. As John Montgomery Ward in *Lippincott's Magazine* in 1886 reflects: "Ten years ago baseball was looked upon merely as a pastime...Three institutions – the National League, the reserve rule and the national agreement – have changed entirely the nature of the game. What was formerly a pastime has now become a business, capital is invested from business motives..." (A. Zimbalist 1992, 5) Maybe most importantly, it was the 33 teams operating in three major leagues (National League, American and Union Associations) in 1884 that reflected the greater extent of motivations. As league developers looked at rising costs, and eager players competed to first get (and then raise) salaries, the market could not sustain this many professional teams profitably. By comparison: After the American League forced addition, 58 years passed before expansion in the early 1960s happened too by threat. The minor leagues had wild swings in their fortunes through National Agreements. Good leagues were ruined fast; bad leagues carried on too long; all from financials and number of teams fielded.

Albert Goodwill Spalding (1850-1915) utilized his preeminent standing in the game in the 1870s as its greatest pitcher to further promote it as a down-to-earth but shrewd businessman who had little tolerance for slapdash ballplayers. As the growth of game depended on intelligent decisions, he was a driving force behind the dissolution of the National Association and was willing to put aside his 'principles' of contractual obligations for the betterment of the sport. (He secretly signed with Chicago while still a member of Boston Red Stockings

(Gentile 2004, 10.) Soon after the league took off, Spalding and his brother, J. Walter, opened up a sports store, providing equipment for what would become millions of customers, and instituted, via 'official' rules printed in the *National League Guide*, that his baseballs were to be the 'official' game balls (Gentile, 11-13). (Al Reach used the same ball-supplying technique in the American Association.)

Aside from the business-building aspects of baseball, most of the 1880s and 1890s turned on redefining the appropriate statistical measures (and how their achievement via the ground rules). The probable, *indirect* intent was to gauge individual performances of players, outside of the team wins and losses, for the evaluation and procurement of talent. As *Game of Inches* baseball historian Peter Morris points to an 1869 *National Chronicle* article (182): "Premiums will be paid to those who excel in the special departments of the game as shown by regular statistics at the close of the season." This early analytical research increased as ownerships looked to attract players (often through player raids) to increase current profits; and to justify increasing the size of ballparks (or rebuild old ones) for the furtherance of profits, and thus expand the game. But, in contrast, it perversely eliminated one player pool completely for more than sixty years, contrary to the overriding talent gathering and profit-making motive: African-Americans.

This particular aversion to black ballplayers began in earnest in 1867 when the NABBP decided to formally exclude all "colored persons" from clubs. This agreement was carried on by the future NAPBBP through exclusion by a handshake agreement. Exceptions did arise throughout the 1870s and 1880s.



Bud Fowler, Moses Fleetwood Walker, Weldy Walker (brother of Moses), Frank Grant, and George Stovey are among many recorded men that played consistently against whites in the 1870s and 1880s in various leagues, both major and minor (Peterson 1970, 18-25). But when Adrian Constantine (Cap) Anson raised the racial issue again (The Bill James Guide to Baseball Managers: From 1870 to Today 1997, 23-26) in 1887, because George Stovey was to pitch an exhibition for a Newark team, the barrier was erected again. Black ballplayers were banned from any Major League competition until 1947.

George Stovey still holds the record for most wins (34) in the International League (White and Malloy 1995, xx).

Cap Anson (above): Amongst the best player-managers in the pre-modern era, Anson was partly responsible for the exclusion of African Americans from the Major Leagues for over 75 years; but not the sole grouser in the exclusion of African-Americans. Physically imposing, and vocal, Anson had a hand in developing spring training rituals. Late in life, the immensely proud man went bankrupt, needed assistance from his daughters and *vaudevilled* until near death.

Table. League Champions & Dynasties (1871-1898)

Sources: Lahman Database; The Baseball Encyclopedia 7th Edition, 1988

Year	League Champion	LG	Wins	Losses	Ballpark Name
1871	Philadelphia Athletics	NA	21	7	Jefferson Street Grounds
1872	Boston Red Stockings	NA	39	8	South End Grounds I
1873	Boston Red Stockings	NA	43	16	South End Grounds I
1874	Boston Red Stockings	NA	52	18	South End Grounds I
1875	Boston Red Stockings	NA	71	8	South End Grounds I
1876	<i>Chicago White Stockings</i>	NL	52	14	23rd Street Grounds
1877	Boston Red Caps	NL	42	18	South End Grounds I
1878	Boston Red Caps	NL	41	19	South End Grounds I
1879	Providence Grays	NL	59	25	Messer Street Grounds
1880	<i>Chicago White Stockings</i>	NL	67	17	Lake Front Park I
1881	<i>Chicago White Stockings</i>	NL	56	28	Lake Front Park I
1882	Cincinnati Red Stockings	AA	55	25	Bank Street Grounds
1882	<i>Chicago White Stockings</i>	NL	55	29	Lake Front Park I/Lake Front Park II
1883	Philadelphia Athletics	AA	66	32	Jefferson Street Grounds
1883	Boston Beaneaters	NL	63	35	South End Grounds I
1884	New York Metropolitans	AA	75	32	Polo Grounds I West Diamond
1884	Providence Grays	NL	84	28	Messer Street Grounds
1884	St. Louis Maroons	UA	94	19	
1885	St. Louis Browns	AA	79	33	Sportsman's Park I
1885	<i>Chicago White Stockings</i>	NL	87	25	West Side Park I
1886	St. Louis Browns	AA	93	46	Sportsman's Park I
1886	<i>Chicago White Stockings</i>	NL	90	34	West Side Park I
1887	St. Louis Browns	AA	95	40	Sportsman's Park I
1887	Detroit Wolverines	NL	79	45	Recreation Park
1888	St. Louis Browns	AA	92	43	Sportsman's Park I
1888	New York Giants	NL	84	47	Polo Grounds I
1889	Brooklyn Bridegrooms	AA	93	44	Washington Park I
1889	New York Giants	NL	83	43	Polo Grounds II
1890	Louisville Colonels	AA	88	44	Eclipse Park I
1890	Brooklyn Bridegrooms	NL	86	43	Washington Park II
1890	Boston Reds	PL	81	48	

Years	Team	Manager	Best Player(s)	League
1872-75	Boston Red Stockings	Harry Wright	A.G. Spalding, Ross Barnes	NA
1876-78	Boston Red Caps	Harry Wright	Tommy Bond, Deacon White	NL
1880-86	Chicago White Stockings	Cap Anson	King Kelly, Cap Anson, John Clarkson	NL
1885-88	St. Louis Browns	Charlie Comiskey	Artie Latham, Tip O'Neill, Bob Caruthers	AA
1891-93	Boston Beaneaters	Frank Selee	Kid Nichols, Herman Long, Hugh Duffy	NL
1894-96	Baltimore Orioles	Ned Hanlon	Hugh Jennings, Willie Keller	NL
1897-98	Boston Beaneaters	Frank Selee	Jimmy Collins, Kid Nichols, Billy Hamilton	NL

1.3. Players' League

After more than a decade of squabbling over contract amounts, the reserve clause and classification of ballplayers (the owners decided to label their horses – based on ability and character), the players formed their own league: The Players' League. (A.K.A. *The Brotherhood* (Baseball: A Film by Ken Burns, Episode 1).)

The Players' League brought in significant physical and mental talent from the National League and American Association: King Kelly, Monte Ward, Buck Ewing, Charlie Comiskey, Ned Hanlon, Hugh Duffy, Old Hoss Radbourn, Silver King, Tommy Corcoran, Dan Brouthers, and Fred Pfeffer, to name a few, were either player-managing, or providing the star power at the dish, or on the bump. (Many rebels became leaders in the future doings of baseball.) The inaugural year developed into a relatively close race with King Kelly managing the Boston Reds (81-48) over Brooklyn Ward Wonders (76-56), New York Giants (74-57) and Chicago Pirates (75-62) (Reichler 1988).

Boston recorded 412 stolen bases. Brooklyn thieved 272 stolen bases. Philadelphia and Cleveland had three managers. And every team's pitching staff completed over 100 games in the supernova league of experimental Socialism. And though the league lost \$125,000, the National League lost more than double that amount (Bresnahan 2006, 20).

While in post-season negotiations, the Players' League folded into the National League without much of a fight, not realizing (or unwilling to try again) their plights were modestly successful in creating serious competition and near financial ruin for the established National League. Al Spalding accepted the unconditional surrender of the Brotherhood's representatives.

The end result: The Chicago team sold out to Spalding. Boston, Brooklyn, Pittsburgh, and New York merged into the National League franchises. Philadelphia gobbled up the American Association counterpart. Cleveland and Buffalo disappeared. (With Cleveland soon back as American League entry.)

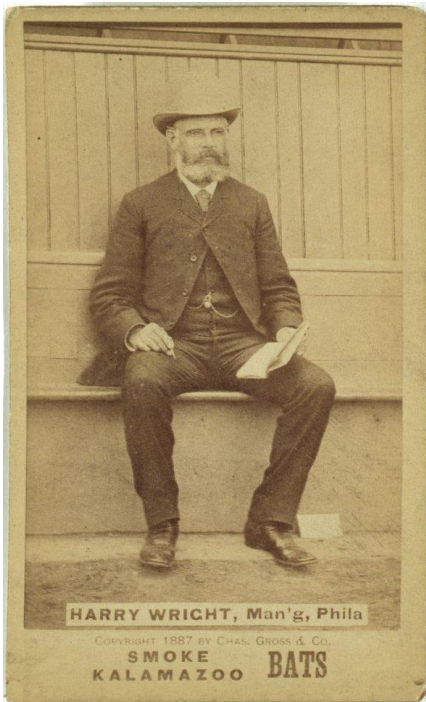
And with a different turn of events – knowledge of the total extent of the National League losses or the ability to refinance their baby – the socialistically-minded Brotherhood League may have lived on, and replaced the National League, albeit, with inevitable squabbles, and restructuring, and more competition from outside. (The hallmark of professional baseball's initial growth phase was such internal strife.)

After this competitive demise, the National League once again held its powerful sway on the players and offered minimal concessions. Park attendance stagnated, more on-the-field conflicts arose, all while Boston and Baltimore made their pre-1900 dynasties in the new 12-team league formed. In a decade of domination, the NL became a weaker league, and ripe for challenge. (The ill-fated American Association could not muster out as a competitive rival even after the Player's League capitulation. The United States' economy played a factor too.)

By 1890, the United States grew accustomed to *The Gilded Age* of Mark Twain's titling, but by no means was unanimously happy for this course. The

boom of business was in no small part due to a healthy taste of *laissez-faire* market principles that ran amok, but were promoted by the überwealthy and their monopolies; thus, lauded by the beneficiaries, but derided by the lower social-economic strata. Yet, the United States transformed into a first-tier world power between the oceans, bringing millions of immigrants to its shores for onerous work, and infrequently: the childlike play of sport. Or as Mark Twain commented of baseball linkage to America's plight: "The very symbol, the outward and visible expression of the drive, and push, and rush and struggle of the raging, tearing, booming nineteenth century! (Baseball: A Film by Ken Burns, Episode 1)"

Meanwhile, Democrat, and 22nd President Grover Cleveland did the singular in his presidency: winning his first term in 1884 after 24 years of Republican/Union party domination; marrying the youngest 1st lady in Frances Folsom (21 years old), who gave birth to Esther Cleveland, the only child born in the White House; answering the phone at the White House at 3AM; and losing the presidency, only to win it back in 1893, with his running mate, Aldai Ewing Stevenson, grandfather to the future Democratic nominee for President. President Cleveland lived on in baseball history as the namesake of **Grover Cleveland Alexander (1887-1950)** – 373 wins in the next century, tied for 3rd all-time. Later, that Alexander of greatness was played in the movies by future Republican President, Ronald Reagan.



The United States dedicated the *Statue of Liberty*, a national gift from France, in 1886. Joseph Pulitzer, new publisher of *The World*, raised funds for the pedestal on which lady liberty stands. The impetus for this symbol of freedom was born in the mind of French historian Édouard Laboulaye at the end of the U.S. Civil War. Indeed, as the world gave us its tired, poor and huddled masses, it also gave us its men and muscle to surpass all the nations of Europe and Asia as the premier trading power. Such American freedom had an arduous price for the millions of men and women passing through Ellis Island tempered only by dreams of prosperity.

Manager Harry Wright (left): In 1887, had already seen cosmic shifts to the game, and the country. (Library of Congress)

Terms and events like the Mugwumps, the spoils system, the Haymarket Riot, the gold standard and free silver swirled in the panorama and minds of Americans. The Interstate Commerce Act of 1887 was passed to regulate railroads, but eclipsed and overshadowed in significance very early on. Ex-Indiana legislator Eugene V. Debs supported the Pullman Strike of 1894 as rail

cars were ignored; disrupted by the American Railway Union that Debs had formed. Debs went to prison (twice), but ran as a Socialist candidate for President five times, winning more than 1 million votes in 1920, from behind bars. Debs' trial lawyer for the rail case: Clarence Seward Darrow.

The Panic of 1893 saw over 15,000 business failures and put millions out of work. J.P. Morgan, Sr. rescued the U.S. government from itself – taking on bonds issued and profiting as usual – while the battle between 'silverites' versus 'goldbugs' waged on to Mr. Morgan's further economic benefit.

1896: Plessy v. Ferguson was decided with the "separate but equal" doctrine eroding the firm intent of the 14th Amendment to the U.S. Constitution (that was ratified after the Civil War). This decision smoothed the way for more *Jim Crow* laws passed around the country for the next seven decades. Creole and "octoroon" (Irons 1999, 224) Homer Plessy boarded a train in New Orleans with the intent of being arrested for violating an 1890 Louisiana statute of "separate cars", regarding blacks. New Orleans, by and large, was progressive in its treatment of the race issue, especially with regard to baseball participation until the mid-1880s (Hogan 2006, 18-21). (Note: An octoroon was then used to describe a person with seven white great-grandparents and one who is black.)

In 1898, the Spanish-American War began. Shouts to "Remember the Maine!" were a rallying cry as Teddy Roosevelt's Rough Riders galloped up San Juan Hill, coming back a hero from the war, and soon enough: President of the United States.

And while the turn of the century approached, professional baseball entered into another war of its own that rounded out modern baseball for the 20th century, and beyond.

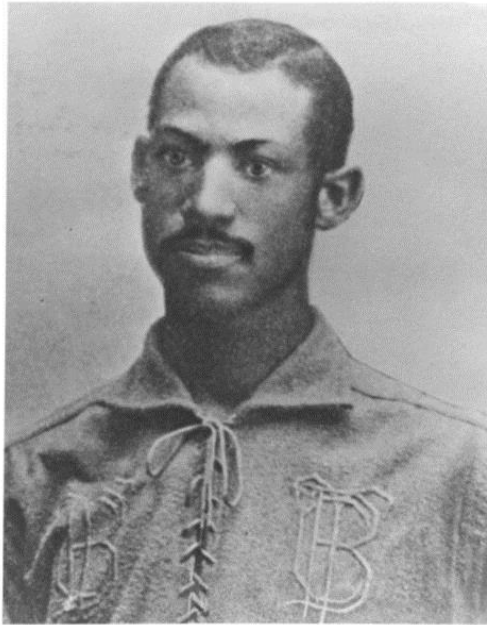
1890-1920 Pre-Negro Leagues

While the National League stood as the lone major league by 1895, black baseball enterprises sporadically launched throughout the country during the next quarter century, usually as traveling teams. The Page Fence Giants, Chicago Unions, Cuban X Giants, Original Cuban Giants, Leland Giants, Philadelphia Giants, and the All-Havanas left behind names and legacies of great performances during the era. (*Giants* was code for a "black" baseball team.)

Cuban pitcher José Mendez – a.k.a. 'Black Diamond' – whose career started at 16, was compared to New York Giants' ace Christy Mathewson, leading the Cuban Stars, among others, to renown. By 1900, Cuban players were an integral part of black baseball, while playing a more obscure, but vital, role in the majors for the Cincinnati Reds and Washington Senators by the 1910s, and thereafter. (See: FDR Era, Ballparks.)

The obstacles to these professional players were still onerous, especially as Nathaniel C. Strong controlled the booking of games in the profitable New York area. Most black teams could not make arrangements for field and promotions without white booking agents/promoters that leveraged the rights to the fields. Strong's power grew out of *Tammany Hall* via Andrew Freedman (owner of New

York Giants) and Richard Croker, a political boss (Hogan 2006, 101). (Tammany was most notorious under William "Boss" Tweed in 1871.)



One result was that most teams were regionalized around "black" metropolitans – Chicago, Philadelphia and the New York/New Jersey areas. The far West, near Kansas City and the upper Midwest in Minnesota and Michigan, provided other tolerant outlets for play, safe travel, and begrudging respect. The Deep South was barren of top black teams this close to Reconstruction. They did play – as later, greats such as Satchel Paige, Willie Mays, Ernie Banks, and Hank Aaron blossomed out of southern league beginnings.

(Pictured Left) Moses Fleetwood Walker (1856-1924): In 1884, he played in the American Association for Toledo. In 42 games, 40 hits in 152 at-bats as a catcher, Moses never knew what his pitcher would throw due to his

race.

(A Game Note: As early as 1869, an all-black team from Philadelphia (the Pythions) defeated soundly an all-white team constructed of mainly sport writers. If only this example had carried forward, what then of U.S. history?)

1.4. American League Formation

After a quarter century of operation, the National League gained a new competitor in major league baseball, the Western League, headed by former journalist **Ban Johnson (1864 –1931)**. The Western League operated successfully as a minor league in the 1890s – playing in the "old western" cities of Minneapolis, Kansas City, and Milwaukee, among others. Johnson, as the top man, was received coldly; scoffed at by the National League representatives; and ordered to send in his fees for the National Agreement (Menke 1963, 75). This response only served to embolden Johnson in achieving his ambitions. Yet, as 19th century baseball historian Peter Morris states: "Johnson moved with an astute combination of speed and deliberateness" (Morris, *Level Playing Fields: How The Groundskeeping Murphy Brothers Shaped Baseball*, 68-69).

Johnson recruited well his managerial cohorts in forcing the National League into acceptance of the American League. Within these men, Ban found talent for management and ownership (in both leagues) that ruled baseball's post season during the first three decades of the twentieth century.



(Pictured Left) Ban Johnson: The man behind the American League. (Courtesy of the *Library of Congress, McGreevey Collection*)

Jimmy Collins (1870-1943), a star third baseman for the 1890s dynastically-minded Boston Beaneaters before becoming the draw for the Boston Americans, he led them to an inaugural World Series victory while stealing three bases in the tilt.

Connie Mack (1862-1956), a weak-hitting, but strong defensive catcher in the National and Players' League, owned and managed his Philadelphia A's for 50 years. He racked up a 3,776-4,025 record with five World Series wins. Mack knack for obtaining quality personnel, analyzing tendencies of players, and dismantling championship rosters for financial reasons (Angus, *Management by Baseball: The Official Rules of*

Winning Management in Any Field 2006, 106-108) were copied again and again.

Charles Comiskey (1859-1931), a svelte and smart first baseman/manager in the American Association and Players' League of the 1880s and 1890s, innovator of outfield shifts (Golenbock, *The Spirit of St. Louis: A History of The St. Louis Cardinals and Browns* 2000, 20), became the stalwart owner of the Chicago White Sox. He joined Johnson's 'circuit committee' in 1900-1901. Comiskey achieved malign and mockery later for his team's throwing of the 1919 World Series and blatant cheapskate tendencies. Comiskey developed a healthy antipathy towards Johnson's rule in the years that followed.

John McGraw (1873-1934), an irascible, sarcastic, tough-nosed, but often kind 3rd baseman for the original Baltimore Orioles of 1890s, partnered with ex-catcher **Wilbert Robinson (1863-1934)** for the Baltimore club (and the Diamond Café). McGraw achieved baseball immortality skipping the New York Giants to 2,763 wins against 1,948 defeats while appearing in nine World Series, winning three. His management style was nearly dictator-like, allowing for little compromise in any player's life on the field, or off (Angus, *Management by Baseball: The Official Rules of Winning Management in Any Field* 2006, 106-108), which made McGraw's fallout with Ban Johnson inevitable.

McGraw created the most extensive scouting network during the Taft Era, employing characters such as bird dog talent evaluator *Sinister* Dick Kinsella (Kerrane, *Dollar Sign on The Muscle* 1984, 6). McGraw's competition on scouting came later from icons Branch Rickey and Ed Barrow, who surpassed McGraw as their multi-tiered farm systems kicked in during the Coolidge Era. After 1924, McGraw never competed for another title.

Robinson managed the Brooklyn Robins (so named for the manager, and later changed to the Dodgers in 1932) from 1914-1931, appearing in two World

Series. Both men, though friends and business partners, came to loggerheads and created (if by mere accident) the heated *Giants – Dodgers* rivalry. (With the proximity of the fan bases of both franchises, it was bound to happen. Both moved west and kept up the tradition as rivals.)

To further Johnson's strategy, after getting into continuous battles with the National League, he raided players in 1901, offering higher salaries, and multi-year contracts. This resulted in "peace" talks, led by A.G. Spalding for the Nationals, and Ban Johnson for the Americans. This time, Spalding surrendered.

HOF 2B Napoleon "Larry" Lajoie (1874-1959) jumped ship, joining the American League. Court battles ensued, adding to the discord and tension in the league battles. (Lajoie avoided purposely Pennsylvania for years because of a *standing violation* of a court order to return to the Philadelphia Phillies, even after the dust settled (Menke 1963, 75-76). In 1914, he played against the A's at Shibe Park. The majority of his MLB career was spent in Cleveland until 1915, returning to the Philadelphia Athletics at age 40. He played his final seasons in the IL and AA leagues for Toronto and Indianapolis, age 42-43.)

Ban's money man: Coal magnate Charles Somers financed most of these maneuvers: owning most of the Cleveland Naps; putting in cash to build a grandstand expansion in Chicago; plunking down \$7,500 in Philadelphia to assist Mack, and ball maker, Ben Shibe; and fronting cash to the Washington and Boston franchises (Macht 2007).

The Accidental Dynasty

The strong-willed personas of Johnson and McGraw predictably clashed, triggering (in part) McGraw's sale of his Baltimore stock to a 3rd party, who then sold it to John T. Brush, Giants owner, and by extension, the National League. McGraw jumped ship to manage the Giants, mid-season 1902. When the National League released various players off the Baltimore club and aborted scheduled games in order to kill the team, and supposedly the league, Ban Johnson rescued his vision through mastery of the law. A fortuitous clause in the American League charter kicked in, making worthless Brush's \$15,000 investment. The franchise's ownership reverted back to American League and to a serendipitous move from Baltimore to New York on Johnson's part. The Highlanders were sold for \$18,000 to Frank Ferrell and Bill Devery (Schaaf 2004, 60).

The league battle ended in January 1903 – allowing for the separate leagues to consider World Series play on a yearly basis and territorial rights meted out upon review. (In 1904, John McGraw's Giants refused to play the Boston Americans, the American League winner. In 1994, a player's strike took place in August.) But the American League gained its foothold; siphoned off talent; and begrudging respect grew as never was it a 'minor' concern again.

Since that truce, the American League won more World Series than the National League (63-46 through 2013) thanks to those New York Highlanders later Yankees (27 titles), who were an outgrowth of the defunct Baltimore Orioles team in 1903. The Highlanders finished 4th in their first season (72-62) under the management of **Clark Griffith (1869-1955)**, future Washington Senator owner,

and former Chicago Colt pitching star and first Chicago White Sox manager. **Ed Barrow (1868-1953)**, the man who ran the 1st Yankees dynasty and converted Babe Ruth over to a full-time hitter, managed the Tigers to 5th place (65-71).

20th Century: Modern Baseball

Since 1903, both leagues have existed. As with many sports businesses, baseball grew through several decades of trial and error. It developed standards regarding statistics, firmed up ground rules, and created unique management techniques for its ballparks, player talent, and dealing with competitors. To handle rules, it established committees – *The Special Baseball Record Committee* and *The Baseball Rules Committee* – to settle disagreements over record-keeping and ground rules during off seasons. With their oversight, fifty-seven changes were made to the ground rules (and to the official scoring records) prior to 1903 and the joining together of the National and American Leagues for the first World Series (Reichler 1988, 2875).

Ballparks grew in size and complexity, requiring more backers, greater business acumen, but ample baseball knowledge. To draw in fans required a successful team and inviting ballpark to mesh together. Within the next decade, the newly designed ball yards furthered a fans' connection, becoming the more stable constant against the fluidity of player rosters.

The management-player battles, over the reserve clause, lurked in the background for the next 65 years. For owners, players threatened less than financial interlopers into their baseball business field. The players represented minor skirmishes; not a full on siege with cohesive tactics league wars presented.

Professional baseball leagues, at just thirty-two years old, were extremely popular, being the only (and first) closed professional sports leagues in America (A. S. Zimbalist 2006, 17). Since that one score and twelve years, adaptations occurred, but not with the same rapid pace as in those early seasons. Baseball's growth entwined with the American 20th century march from an upstart, isolated nation to a superpower. Baseball grew from a pastoral, rough-n-tumble affair to a daily rhythm and beloved aspect for millions of park visitors and TV viewers.



Ty Cobb and Joe Jackson conversing about what else: **hitting**. Ty Cobb ended up as the all-time hit king (4,189 or 4,190 depending on the most recent research) with a lifetime .366 average. Joe Jackson was 3rd all-time (.356) with 1,774 hits before his expulsion from the game over the fixed results of the 1919 World Series. Given he hit .375, with the series lone home run, Joe did not give up much to the Cincinnati Reds. In 1920, he pounded out a .382 average with 12 home runs and a league-leading 20 triples. Joe did not say it was so, but he did not say it wasn't so. As it seems he was much more accountable than romantically realized by his defenders. (From the *Library of Congress*)

1.5. Statistics, Era and Evolution of The Game

The tracking of ordinary (and not so ordinary) statistics to determine who is considered the most productive player of the week, month, season, or in a career represents on paper (and computer screens) an essence vital to Major League baseball's tradition. This is not new. Generations of fans discussed daily which players are the supreme based upon their individual fielding, pitching, base running, and most discussed: hitting. The comparisons and contrasts abound so numerous because each individual fan values *certain numbers* more than another fan does. Arguments based on the particular stats obtained, but scrutinized only within the extreme biases of fandom, live on. As baseball fans would have it no other way. As noted baseball historian Robert Peterson surmised, "... statistics, the lifeblood of the fascinating game of baseball (Peterson 1970, v)."

Few, if any, professional sports are analyzed statistically with quite the same fervor as Major League baseball. Though because of that fervor, the vast collections of statistics seen now in professional football, basketball, hockey, golf, and tennis, one can connect an overarching influence Major League baseball created on the compilation of 'stats'. Those sports during the *ESPN* world of analysis through thirty-second sound bites contrasts against bygone years of flowery, poetic sportswriters such as Grantland Rice, summarizing greatness from minimal achievements. Baseball adds to its vast array of statistics, almost to the point of ad nauseam, yet retains the fascinating aspect which fans and writers alike argue over in asking, "Who is the best player? And what makes him so?"

In the 1880s, Cap Anson, Dan Brouthers, John Clarkson, Ed Delahanty, Hugh Duffy, Buck Ewing, King Kelly, and Billy Hamilton were the round of answers given by fans about the best in the game. By 1903, Frank Chance, Jack Chesbro, Joe McGinnity, Christy Mathewson, Nap Lajoie, Addie Joss, Kid Nichols, Cy Young, and Honus Wagner wagged the sportswriter's pen.

All saw induction into the Baseball Hall of Fame.

Their records are mostly washed away by time and modernization of *their* game – since they are the true founding fathers of what we love – but a few of their records remain intact. Whenever such is mentioned on a broadcast as a *modern* player approaches their once unlikely feat. Their era of baseball, differentiated by equipment, game play, odd parks, ground rules, and race exclusion, is reminisced on – a less complex time unfolds as a researcher provides the broadcasting talent a story or two for their viewers. But would these bygone players be able to compete in the modern game and set records?

Equally famous as a sportswriter, and a dramatist, Damon Runyon wrote on *July 9, 1912* presciently about eras, statistics, and glory:

"Old-time fans seem to feel that there is a modern-day tendency to discredit the work of the baseball stars of long ago. [Rube Marquard's 19 straight wins]...the old-timers of the game are entitled to much more credit for their accomplishments that their modern successors, just as the pioneers who blazed

the path through the wilderness are entitled to more credit than descendants who live in peace and quiet as a result of the achievements of their forebears.

[Charles 'Old Hoss' Radbourne had held the consecutive win record of 18 wins, but pitched in the pre-1900 era.]

The style of pitching, or the distanced pitched, makes no particular difference – the physical and mental effort was there. It would be equally idle to contend that any modern-day ball club will match the record of (Cincinnati) Red Stockings of '69 and '70. The base running of the (Arlie) Lathams and (Billy) Hamiltons and (Harry) Stoveys of the bygone time will probably never be touched by modern-day players.

[Until the color line was broken. Maury Wills, Lou Brock, and Rickey Henderson reset the base running record books.]

Certain it is, too, that not many of the catchers of today would stand the gaff that the old-timers took – catching day in and day out without gloves or protectors.

Rube Marquard is a marvelous pitcher and has hung up a record that will probably stand for many years to come; he will probably be remembered for his work as long as they play baseball, but so, too, will the (John) Clarksons and the (Charles) Radbournes, and there is sufficient glory for all in their eras they represent.

But as for belittling the work of the old-time stars – NO, I wasn't there to see them, but I've been told, and I believe." (Reisler, Guys, Dolls and Curveballs: Damon Runyon on Baseball 2005, 81-82)

Certainly, the long-standing records are revered by 'the purists.' **60 (61)*** home runs in a season, **.366**** batting average, **257** hits in a season, **56-game** consecutive hit streak, **755** home runs in career and **511** wins by a pitcher are all venerated examples. But as master sports scribe Fred Lieb once stated: "Records are made to be broken." (**Just as recent scholarly research adjusted Ty Cobb's lifetime batting average from .367 to .366. For this writer's entire youth, the average was always quoted at .367.)

And as sure as the century turned to the 21st, many of these formerly revered marks were assaulted, and surpassed, by a new generation of player not born prior to Baby Boom Generation (1946-1961). But, more specifically, the surpassing of the lifetime home run records garnered the most antipathy (ESPN Outside the Lines 2006). And when accusations, media attention, online and print articles mentioned steroids and enhancements, the validity of these recent numbers obtained are intensely questioned, haphazardly debunked, and forever labeled as ill-gotten to the sole benefit of the prior eras. (This is as unjust as ignoring the past accomplishments framed in their unique contexts as Runyon did above.)

To many onlookers, the old records in baseball mean so much more than the records set in today's environment. That is in part due to recollections of a

much older generation (as Runyon allowed) who saw a Babe Ruth, Lou Gehrig, Ted Williams, Joe DiMaggio, Willie Mays, Hank Aaron, Bob Feller, Warren Spahn, Bob Gibson, or Sandy Koufax play live, starting back in the 1930s, or via television, beginning in the early 1940s and continuing on through to the present day. They saw them as heroic, free of the vices we deplore today; and certainly outstanding, beyond the normal star player seen on the diamond at present.

In *The Hidden Game of Baseball*, John Thorn and Pete Palmer summarized this idea best: "In our drive to identify excellence on the field (or off it), we inevitably look to the numbers as a means of encapsulating and comprehending experience. This quantifying habit is at the heart of baseball's hidden game, the one ceaselessly played by [Nolan] Ryan and [Walter] Johnson and [Babe] Ruth and [Hank] Aaron – and, thanks to baseball's voluminous records... – in a stadium bounded only by the imagination" (Palmer and Thorn 1984, 2). In this expansive stadium of the mind, players are heralded as beyond mortal and worthy of our daily praise.

But the assumed jaded façade of the present day player diminished his power to spark awe in many fans through his new records and achievements. The millions of dollars (the avarice vice not inherently seen in the players of yester year) being paid out to play a game sparked resentment and furthered reasons to tear down the high-performing athletes. The brusque nature of a many players today is an additive feature, but once again, that is due more to our instantaneous media outlets reporting than just their crass behaviors alone.

Lo, they are human, and have their bad days and unthinking behaviors too. But the old timers were no angels; they just had better publicity agents – their overly loyal sportswriters. (An academic review of the media's reporting of 'current events' would reflect an instantaneous need to report stories not necessarily substantiated thoroughly by a consistent methodology. More to the point, the media outlets refuse to acknowledge sloppy and jump-to-conclusions assertions of facts, and the common misconceptions passed along to society in a 'slicked up' language to garner ratings, advertisers, more importantly, better news assignments by even the reporters themselves.)

But that is one reason why one should *fairly assess* the numbers and not the particular player psychology (and misconceptions) driving such resentment. Or, at least discover if today's ballplayer is equal in some perspective to the glorified image of old athletes. Or maybe put a better light on the accomplishments of each generation (in their era), realizing each played under different ground rules, recording methods, motivators, and player universes. Or that the parts of the game, the scoring of runs, stoppage of runs, developing talent, or maintaining performances has seen a significant changes. That each ballplayer does what he does in the ballpark and era he finds himself in, and within the paradigms he faces from the management on down to the media's whimsical reporting.

In searching for such comparisons, the contrasts may ultimately decide the remembrances we should take from every generation of baseball player. Not to

disparage any accomplishments, but to frame them properly in a positive light. It is among a myriad of subjects reviewed by these volumes.

Maybe more importantly, incorporating the thoughts of other statisticians, players, general managers, beat writers, scientists, and opinion makers can be more persuasive than the musings of this writer/analyst are. Their voices come from countless games, numerous readings, and sharp perspectives honed over years of following the American Pastime. But even the best analyst fails sometimes to see another angle – blinded by methodology and bias – but hopefully, this will prove informative, interesting, and maybe, entertaining.

1. A few of the baseball factors/situations analyzed are:

Age Curves: Players' peak performance

Best Teams: Top 5 by statistical category in an era; top 100 by *WAR*

Bulking Up and Bashers: Introduction, efficacy, and the media in the 'Steroid Era' (Volume II, Clinton Era)

Business Model: Financials, revenues, home attendance, TV market

Equally Special: Players in an era (The Negro Leagues)

Free Agency: The birth of the free market in baseball (Volume II)

Macrosabermetrics & Microsabermetrics: Big Data influences the MLB

Physics: Baseball composition livens up the game (Volume II)

Player Valuation: How much is baseball talent worth *in excess*?

Prospects: The failure rate and exponential nature of talent

Role Changes: Pitchers evolution from iron man to specialists

Run Rabbit Run: Astroturf and stealing in 1970s and 1980s (Volume II)

Runs: OBP% and SLG%, linear weights, runs created formulae

Salary Escalation: Inflation of the salaries (Volume II)

Stadium Builds: Ballparks built to increase attendance; and cater to billionaires' whims? (Volume II)

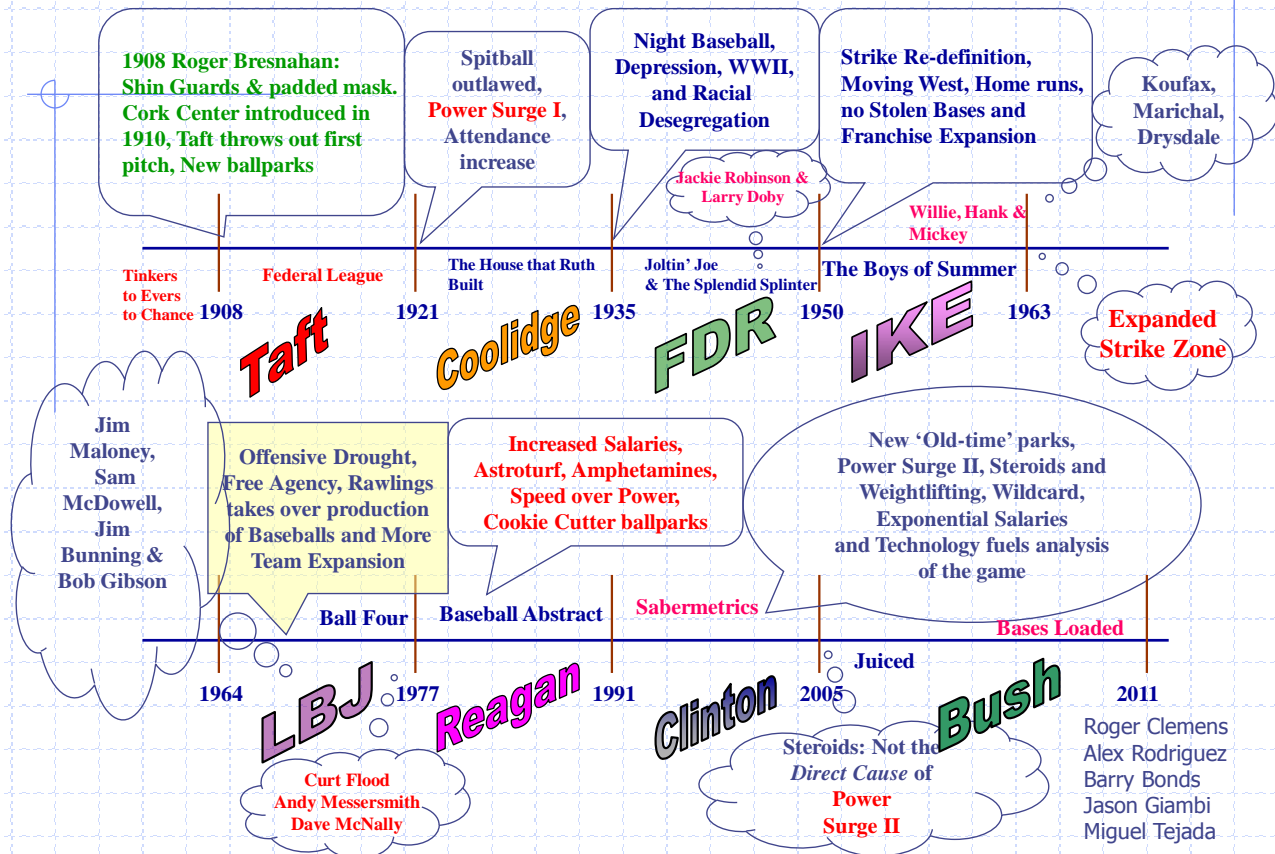
Swing or Miss: Strikeouts relationship to walks; home runs (Volume II)

The GM: *Moneyball* evolution comes out of elite colleges

WAR Modeling: An analysis of *Fangraphs* and *Baseball-Reference* (Wins Above Replacement) model for 480 teams (1998-2013)

Win Model: How teams build winners; linked to the business model

Time Line for Baseball Era Definitions



2. The Eras discussed and measured:

TAFT/COOLIDGE ERA (1908–1935) – Introduction of a livelier baseball, 1st generation concrete-and-steel ballparks, Babe Ruth, racial segregation, commissioner’s office

FDR ERA (1936–1949) – Interrupted by WWII and initially marred by segregation policies (April 15, 1947 – Jackie Robinson plays 1st MLB game and scores deciding run in a 5-3 victory over the Boston Braves (The Northwest Indiana Times 2006, C:6).), night baseball, radio, and TV first changes the game

IKE ERA (1950–1963) – Strike zone re-definition, integration, expansion, and franchises moving to the West Coast

LBJ ERA (1964–1977) – Dominate pitchers, 2nd generation ballparks, stolen base revives, rule changes, free agency and strikes

REAGAN ERA (1978–1991) – Astroturf, speed, 1987 home runs, increased player movement, competitive balance and collusion

CLINTON ERA (1992–2005) – Money, 3rd generation ballparks, performance enhancing drugs (PED)

BUSH ERA (2006–2014) – Fallout from steroids, applying lessons, and future stars

3. General Methodologies to be used:

Access Databases (Lahman 1995-2014), for queries, Excel, @Risk
Graphs and Tables of ERA-to-ERA differences, using Baseball-Reference, Fangraphs, and other baseball sites

Linear Regression for correlation factors

Internet Searches of MLB and minor information; biographies

Network & Radio Interviews posted on video websites (Youtube.com)

The definition of each era (FDR, IKE, etc.) was determined by ground rules, technology modifications, or off-the-field dealings that took place distinctly at/near the beginning, or end, of each period. Starting in 1908, tarpaulin was purchased and used by the Pittsburgh Pirates (James, *The New Bill James Historical Baseball Abstract: The Classic – Completely Revised 2001*, 78). A year earlier, shin guards and the padded facemask were incorporated by Roger Bresnahan (James, 377) to the delight of any man that has don them in a game. This after various attempts failed to incorporate them from the 1870s on. In December 1908, the baseball writers, long since influential, formed their final union, the Base Ball Writers' Association of America (Turkin and Thompson 1970, 621). By 1910, the baseball modified (a cork center) to the delight of fans and batters. Ben Shibe, who opened the first concrete-and-steel ballpark, designed the new ball (James, 90,94) and pushed ahead the new stadium builds. These changes defined the start of the modern game: rounding out the modern catching style; providing a way to protect the field; building new grandstands that survived for a century; modified baseball; and the off-field professionalization of sportswriters who make up the HOF voting mechanism.

In 1919-20, Babe Ruth came to national attention and ownerships reaped the rewards (even after the Black Sox scandal.) By 1922, the Ruthian shift completed, modern baseball included the home run as its primary weapon that never disappeared from the consciousness of baseball fans. During this time, Branch Rickey grew influential, holding tryouts for talent procurement for his St. Louis Cardinals. Sportswriter Grantland Rice took the mike for 1921 World Series, the first World Series broadcasted to three radio stations (Morris, *A Game of Inches: The Game Behind The Scenes 2006*, 147).

In 1935, baseball came under the lights and Babe Ruth finished out a landmark career. Joe DiMaggio replaced Babe's star in New York and the Great Depression eventually lost its catastrophic hold on America. Radio stirred millions, and the new medium, television, launched in this era to the delight and, sometimes, the derision of fans. 1936, the first inductees into the newly formed Hall of Fame in Cooperstown, New York were received. Ty Cobb, Walter Johnson, Christy Mathewson, Babe Ruth, and Honus Wagner made up that first class. WWII interrupted the normalcy of the game, but the game survived, and flourished, soon, the boys came home in victory. Attendance again soared at the end of 1940s, FDR Era; and brought the most glaring player innovation to the forefront: Equality.

In 1950, a re-definition of baseball: the strike zone altered; and the early stages of racial integration revolutionized the game. The home run was the most popular weapon used as stealing seemed a lost art for an average player. The long ball hitters of the era soon owned the record books: Henry Louis Aaron, Willie Mays, Mickey Mantle, Harmon Killebrew, Eddie Mathews, and Ernie Banks are amongst the greatest at *Dialin' 9* for long distance. The IKE era saw teams leave their roosts for populated areas west. New York City, a dominant power source for sports, declined. Two teams left for California in the late 1950s: following suburban growth; newly minted interstates crisscrossing America; and air travels' convenience cementing from an executive's luxury to everyday man's good.

The 1960s league expansion to twenty teams, a 162-game schedule, and strike zones and mounds tweaking created shocks to the system. Both leagues' offenses altered with a 'reintroduction' of stolen base attempts. This tactic combated unsuccessfully the decline of runs scored by teams, leading to further offensive tweaks. (Maury Wills smashed Cobb's half-century old mark (96) in 1962 with 104 swipes.)

The beginning of a 6-year battle against the reserve clause was launched on Christmas Eve, 1969. (The present of free agency opened up with the nation marking its bicentennial and the National League's centennial anniversary in 1976.) The Designated Hitter (DH) came to the AL to spark of run scoring. Lockouts and strikes, like never before, became a yearly possibility.

By the late 1970s, as ownerships lost their battle against free agency, more teams were added (then at 26), and attendance grew, but also, more conflict was to come in 1981. *The Bronx Zoo*, the 1978 Yankees, began the run of 10 different teams winning the World Series. But they were a microcosm of the newly visible game: a meddlesome owner, a fiery and firewater-abusing manager, a diva slugger, and a never-dull-moment clubhouse fueled for, and by, reporters. The mass media became an ever-present thorn of quick sound bites to be exploited and disseminated widely. And sports junkies were satiated, even when annoyed by the bite.

Ownerships colluded; holding down salaries on newly minted free agents in the mid-1980s, leaving seeds of distrust, while players were outed as drug abusers or worse. 'Charlie Hustle', Peter Edward Rose, was found gambling on baseball, the ultimate baseball sin going back to the 1870s. His punishment: ineligibility for the Major League Baseball Hall of Fame. Once, an honor he richly deserved, as a player. Yet, pride went before the fall into a resulting media circus.

The 1990s bulked up on new 'old-time' ballparks built, more teams (30), playoff restructuring, increasing TV revenues, and a hidden shot to the backside: steroids. By 2005, the story in baseball was not about player's heroics and playoff races, but cheating through performance-enhancing drugs (PED) and home run records with asterisks behind them. At the heart of the matter, Barry Lamar Bonds came under intense public and governmental scrutiny, leading to a federal investigation of perjury, obstruction of justice, and tax evasion whilst a

baseball inquiry by former Senate majority leader George Mitchell examined the entire *Steroid Era*. The Mitchell Report introduced us to a bevy of evidence against these heroes of the bat and ball. But extreme clarity of the issue did not necessarily result from this or other reports.

In 2009, the seven score addiction of baseball saw its then highest paid player, Alex Rodriguez, have a come-to-Jesus moment in front of millions while talking to Peter Gammons about his usage of steroids. A-Rod admitted his use, after it was made public that 104 players tested positive for controlled substances during a MLB-sponsored confidential testing program, and a tell-all A-Rod screed reached the book-buying public.

Manny Ramirez was ensnared in the steroid scandal – the first HOF-type player suspended for 50 games under the new banned substance policy tied to performance enhancements.

As the Aughts became the Teens, Mark McGwire broke his own PED story to broadcaster Bob Costas. McGwire's 1998 home run battle with Sosa triggered much of the recent dismay with baseball players' statistics and efforts. Big Mac's admission of guilt came out as self-serving – given the skeptical public environs of 2010 – and the jury has long since made its decision about his career, fairly or not.

Big Mac hired on as a hitting coach for the Los Angeles Dodgers, the \$2 billion franchise (when bought) with a \$230,000,000, 2014 payroll. As the Bush era (2006-2019) rolls ahead, big business efforts (and big data) control baseball. The goal is not so much tied to wins and losses and championships, but rather: promos; ad revenues and website clicks; brand labeling and modeling; analyzing the gate; corporate ticket packages and luxury boxes; and players seen as financial assets, more than people. Again, the horses have their quantitative labels.

The game has never truly ceased to evolve into a different game with dark spots to be scrutinized while still playing well in the sultry afternoon sun. Each generation becomes enthralled with the game in its own way – sometimes overlooking the obvious problems, other times, focusing efforts on fixing (or hiding) the broken pieces – and yet, fans support their favorite players, and teams, by coming to parks year after year.

Even in America's darkest moments, during the Great Depression and World War II, when the fate of the nation hung in the balance, baseball, survived, grew stronger, with new visions of athleticism, integrity and teamwork shining brightly beyond that finest of hours and greatest of generations.

Play Ball!



A Meeting of Legends: 2B Napoleon Lajoie (far left) and SS Honus Wagner (near right). Lajoie was restrained by court order from playing in Pennsylvania for over half of his 21-year career. (Yet, he must of played. In 1906, 1908, and 1910 Lajoie participated in enough games to violate the order.) Lajoie's Lifetime batting average: **.339**. Obtainment of walks: **Scarce**. Likeable player: **Not so much**.

SS John Peter 'Honus' Wagner a.k.a. 'The Flying Dutchman' was a quality guy on and off the field. He led the National League in batting and/or slugging fourteen times; and one of the first players to obtain consistent endorsement contracts for the pushing of various products. A century-old tobacco baseball card of Wagner's listed north of \$600,000 in value in 2002. (Courtesy of the *Library of Congress, McGreevey Collection*.)



John Franklin 'Home Run' Baker (middle left): Led American League in home runs four times (11,10,12,9), but swiped more than triple the amount of stolen bases (38,40,34,19) in the same years under Connie Mack. Later, Baker played for the New York Yankees (1916-1922) in the waning years of his career when Babe Ruth came along and rewrote the *Home Run* record book. (Courtesy of the *Library of Congress, George Grantham Bain Collection*.)



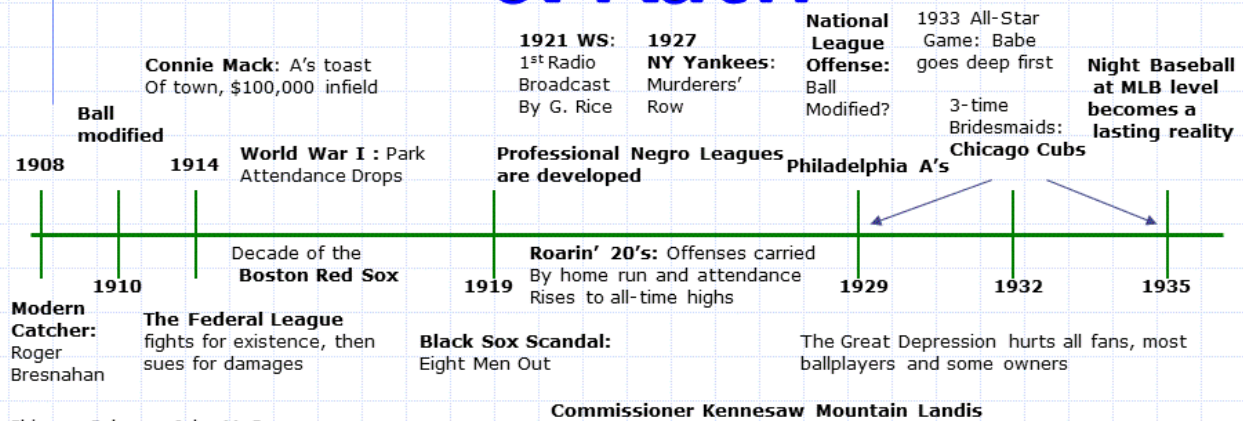
Denton True 'Cy' Young (left):

Born two years before the start of professional baseball, Young dominated and defined what the pitching position was in the *Grant Era*. He put the all-time record for wins (511) out of reach; switch leagues like many National League stars in 1901; and continued to complete what he started, only failing 64 times out of 815 starts to go the distance. In 1908, Cy went 21-11 with a 1.26 ERA. It was his last as a twenty-game winner. (*Library of Congress, George Grantham Bain Collection*.)

Chapter 2: Taft/Coolidge (1908-1935)

- ◆ Establishment of Anti-Trust Exemption
- ◆ Babe Ruth and the Live Ball Era
- ◆ The Roarin' 20s and financial windfalls
- ◆ The Great Depression
- ◆ All Star Games
- ◆ Night Baseball

Taft ERA: Innovation & Ruth



Chicago Cubs vs. John McGraw

Best MLB Players: Babe Ruth, Ty Cobb, Roger Hornsby, Walter Johnson, Frank Baker, Lou Gehrig, Honus Wagner, Tris Speaker, Pete Alexander, Lefty Grove, Christy Mathewson, Eddie Collins, Carl Hubbell, Mordecai Brown

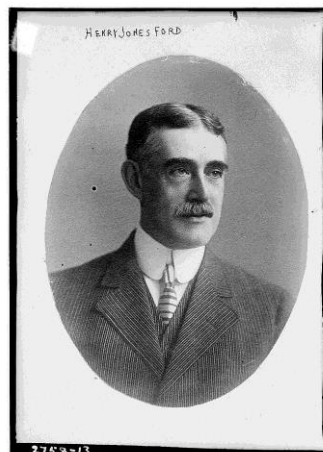
But here the pitcher whirled again – was that a rifle shot?
A whack – a crack – and out through the space the leather pellet flew:
A blot against the distant sky – a speck against the blue.

Above the fence in center field in rapid whirling flight
The sphere sailed on – the blot grew dim and then lost to sight;
Ten thousand hats were thrown in air – then thousand threw a fit –
But no one ever found the ball that mighty Casey hit.

- *The Official Encyclopedia of Baseball, 5th Revised Edition, Casey's Revenge* by James Wilson

In 1908, the United States growing ambitions were outwardly displayed via the Great White Fleet, a battleship tour that presaged displays of military power with disastrous consequences for millions. The bulk of the *Panama Canal* project started under Teddy Roosevelt and finished during Taft's administration. The usefulness of the canal carried the United States well in World War II, allowing all types of ships to move material and men between two vast oceans.

The U.S. automotive industry launched successfully in 1908 as Henry Ford's Model T racked up 16.5 million units sold. General Motors, led by William C. Durant, organized, becoming the primary competitor to Ford in the years to come. While in the same year, Walter P. Chrysler bought his first car; headed up the Buick division of GM by 1912; retired as a VP at General Motors by 1919; only to then start Chrysler in 1925. This *Big Three* formed the backbone of America's manufacturing might, churning out tanks for war and producing countless memories for millions of Americans, young and old alike.



Assembly Line Worker and **Henry Jones Ford**: Connected by Model T successes in the *Taft Era*. (Courtesy of the Library of Congress, *Bain Collection*)

John D. Rockefeller's *Standard Oil Company* broke into the "seven sisters" and twenty-seven other subsidiaries in 1911 due to enforcement of the Sherman Antitrust Act. Rockefeller's shares in the dissolved company made him the richest man in the world. Meanwhile, baseball was granted an exemption from antitrust laws a decade later, as the magnates of the sport could not even buy a subsidiary piece of the Rockefeller Empire.

Rockefeller was apt to criticize back the scribes in his day as the powerful print media shaped opinions, daily. Four sportswriters debut in New York – Grantland Rice, Heywood Broun, Fred Lieb, and Damon Runyon – colored in the larger landscape of baseball in their words pen from on high in the press box. Their works in the Pulitzer-Hearst world of newspapers gave fans the scoop and the dope on their favorite players, managers, execs, and more profitably, the troublemakers. Fans got answers to the whys, with flare and force and fluidity, and these sportswriters garnered Hall of Fame admission, still 27 years from formation as an institution. The flourishing flotilla of phonics masters in all sports

was reveling in its heroic heyday. Splendid sportswriters ran roughshod at the press as Ring Lardner led the round ball roundup. (A mediocre homage to doggerel poetry penned in the time.)

In 1913, the 16th amendment gave the government the right to levy income taxes. The debate continues over who should pay and how much they should pay since the very inception of "the law." U.S. Representative Carter Glass sponsored the bill for the central banking system we call the Federal Reserve. Glass's name came to further prominence during the years to come.

The NAACP, founded in 1909 – on Lincoln's 100th birthday – was at the forefront of actions to advance colored persons in business, education, social welfare, and entertainment industries. Hostility ran high amongst most whites that even as Jack Johnson pounded James L. Jeffries in the first interracial heavyweight championship on July 4, 1910 in Reno, Nevada, former champ John L. Sullivan commented in an editorial piece for *The New York Times*:

"The Negro had few friends, but there was no real demonstration against him...I have never witnessed a fight where I was in such a peculiar position. I all along refused to announced my choice as to the winner...I refused on Johnson's account, because of my well-known antipathy to his race, and I didn't want to think I was favoring him from any other motive than a purely sporting one." (Vecchione 1991, 140)

Professional baseball ignored many early black ballplayers just because they were not seen as "hued correctly," even as the game became a driving impetus for social change by 1947. (Jack Johnson later escaped imprisonment on *The Mann Act*, leaving the United States on a Negro baseball team and remained a fugitive for over a decade.)

But at this juncture in America, D.W. Griffith's epic, *The Birth of a Nation*, depicted African-Americans in a light that can only be described as thoroughly demeaning, mean-spirited, and heinously wrong-headed, but in this era, accepted as gospel by many white Americans. Then President Woodrow Wilson did not condemn the movie's depiction or its message. Against this backdrop, the *Great Migration* took place as southern African-Americans moved north to metropolitan areas, bringing their strong backs, persevering wills and exceptional talents to all avenues, of limited business enterprises. Violence though followed them north; as 1919's 'Red Summer' in Chicago reflected the height of this brutality starting out in Charleston, South Carolina.

World War I's linchpin action ignited world war with the assassination Archduke Francis Ferdinand of Austria-Hungary on June 28, 1914. The tensions building towards war in Europe incubated for years as excessive national pride, military buildups, alliances requiring military support, and desires for colonial lands in Africa fed into that womb birthing war. The United States stood silent, invoking neutrality, until various German naval actions (the sinking of the British

passenger ship *Lusitania* which carried 128 Americans) stirred President Wilson and Congress enough to declare war on April 6, 1917.

The doughboys of America barely numbered the heinous casualties seen in a day's battle at the Somme, so unprepared the country was for the conflict. Meanwhile, the Bolshevik Revolution fell the provisional government in the fall of 1917, sidelining the Russians for the remainder of the war. The Germans took the offensive on the Western Front, increasing the urgency of manpower needed from America. This forced all able bodies to the front; as baseball owners, and players, begrudgingly, came to the war efforts, though some did volunteer quickly. The historic affect was substantial: as the 1918 World Series was the only 'Summer Classic' held between September 5th and September 11th.

The war gave rise to the newest, soon-to-be, commercially successful idea: the airplane. Thought mainly used for observation, with minute successes as a bomber, the airplane was a beloved status symbol for wealthy millionaires, such as Howard Hughes, and a source of national pride, with *The Spirit of St. Louis* historic flight to Paris. The airplane joined its ground technology partner, the automobile, as an essential part of Americana during the next 75 years.

After the Paris Peace Conference in 1919, the United States entered the *Roarin' Twenties* with an optimistic, devil-may-care attitude pervading society. Even with *Prohibition*, bootleggers more than supplied the country with alcohol needs. Metro-Goldwyn-Mayer (MGM) was born in 1922. The silent motion pictures and nickelodeons converted to "talkies" in 1927 with Al Jolson's *The Jazz Singer*. Walt Disney introduced Mickey Mouse in *Steamboat Willie*. Flappers went to speakeasies. The *Jazz Age* was alive. And a Ford automobile benchmarked a man's wealth (while just making five dollars day) during these carefree times after "the war to end all wars." The country had arrived, if only, prematurely.

In sport, horseracing was *Man O' War* and *Sir Barton's* turf. The 1924 Olympics, held in Paris, lauded American swimmer Johnny Weismuller of *Tarzan* fame; and British sprinters Abrahams and Liddell, depicted later in *Chariots of Fire*, for their prowess in those sports. Boxing promoted Jack Dempsey and Gene Tunney in the 'long count' fight. Bobby Jones and Walter Hagen drove ahead of the best in golf. Football tackled professionalism, as the 'Gallop Ghost', Red Grange, haunted Chicago, creating the 'Monsters of the Midway' ran by ex-Yankee right fielder George Halas. The 'Four Horsemen' galloped over their opponents under Knute Rockne whose coaching career was portrayed by future President Ronald Reagan in 1940. Baseball heralded The Bambino's rise, *who more than* replaced 'Papa Bear Halas' by 1922 in a new Yankee Stadium.

The 1920s saw F. Scott Fitzgerald write *This Side of Paradise* and *The Great Gatsby*. Ezra Pound began *Cantos*, never to complete his work. Edward Estlin (e.e.) Cummings released visual poetry in *Tulips and Chimneys*. John Dos Passos penned a metropolis ride in *Manhattan Transfer*. And Hemingway's *The Sun Also Rises* and *A Farewell to Arms* portrayed the innovative writings of the Parisian-living *Lost Generation*.

In 1925, the *Scopes Trial* commenced in Dayton, Tennessee. Clarence S. Darrow, who garnered first fame as defense attorney of presidential candidate Eugene V. Debs in the 1894, defended John T. Scopes. William Jennings Bryan, 3-time runner up for President, took up the prosecutorial role as an expert witness. Darrow dismantled verbally the great orator and statesmen in Bryan on cross-examination, but Bryan, nonetheless, won “the monkey trial” to the tune of a \$100 fine. Bryan passed away during the trial’s recess.



October 1929: The world of excess and widening disparity in income met the world of wanting, and no income at all, as the stock market bubble careened into the 1930s *Great Depression*. The decade sees millions upon millions struggling for food and survival. No aspect of society is left completely untouched – as many people wandered in and out of *hobo jungles* and the propped up tin cans called derisively, *Hoovervilles*. (Left: An awestruck crowd after the October 1929 Crash.)

Various reasons for the October 1929 market crash were evident in that over 500 banks failed in 1928-29, farmers’ income stagnated or fell throughout the 1920s, and overproduction of goods led to high inventories. In concert, some factory workers borrowed too much on credit to buy the very items they made. Speculators pumped up stocks in the late 1920s to the point of overpricing the entire market via the process of borrowing on margin. Margin calls came – and the money was not available to settle accounts.

Once these cracks appeared in the market, doom loomed through massive sell offs, government monetary inaction, and later, protectionist trade policies. The economy tumbled downward by over 40% of GDP until Roosevelt took office in 1933 – only to rebound modestly to pre-1929 levels by 1937. A banking backstop and regulator, created in the Glass-Steagall Act, delineated “commercial banks” from “investment banks” and formed the *FDIC* for consumer protection.

Across the Atlantic, a vicious man rose out of the ashes of prison, became the leader of Germany, and escalated bitterness in the country over World War I. The war, that left Germany in economic shambles, and responsible for enormous war reparations, and later, equal sufferers in the Great Depression, was not over for him. From this, the seeds are sown: ripening into World War II. 60 million plus casualties resulted a decade later...

But before the *Titanic* made its maiden voyage, professional baseball hit a high gear as America’s favorite pastime. President William Howard Taft honored it in an annual tradition: throwing out the first ball before the Opening Day. Magnates built new ballparks in Chicago, Washington, and Philadelphia to the delight of the burgeoning fan bases tied for life to metropolitan areas.



Baseball was not yet the home run-seeking, free-swinging, technology-laden game that fans relate to today with marvel (and sometimes, disdain). In fact, no other 'modern' era generated more stolen bases per season per team (than in the Taft Era).

Speed and base running combined as the greatest asset – it nearly had to be – since many ballparks boasted center fields over 450 feet, and a few reportedly over 550 feet (Leventhal and MacMurray 2006, 16). Players ran the circuit frequently to get a home run, as Tyrus Raymond Cobb proved in winning his only HR title by hitting 9 'parkers' in 1909 (Gershman 1993, 84). **Ty Cobb** (left from Bain Collection, LOC): This master of the stolen base in the *Taft Era* stole 892 Lifetime Stolen Bases, 3rd All-time to Rickey Henderson and Lou Brock.

Table. Average Stolen Bases per American League Team for 14-year periods

ERA	Stolen Bases
Taft (1908 -1921)	168.50
Coolidge (1922-1935)	79.55
FDR (1936 -1949)	61.55
IKE (1950 -1963)	47.54
LBJ (1964 - 1977)	85.35
Reagan (1978 - 1991)	103.62
Clinton (1992 - 2005)	100.57

Note: *Not Adjusted* for 154/162 game schedule differences

The Federal League and Wrigley Field

Once again, a league war began. The Federal League formed (1914 and 1915) – and still lives on as Wrigley Field – but lost the economic fight to the well-tested majors. Led by James Gilmore, a smooth operator who could sell ice cream in Antarctica, "Gilmore's League" was funded by men that were not ordinary haberdashers, but industrialists with significant means. Gilmore's men: Philip Ball (\$2 million), Robert Ward (\$6 Million), Edward Gwinner (\$500,000) and Baltimore favorite, Ned Hanlon, put stakes into a baseball war (Levitt 2008, 89-90).

The Federal League's birth faced obstacles not only from the baseball leagues it intruded on, but also from newer and exciting entertainment options.

Baseball historian Lee Allen suggests (and declining attendance prior to World War I supports) that when the Federalists made their move into the baseball business arena, the game was already facing outside threats to its bottom line from a burgeoning movie industry, the automobile driving craze, and other pursuits that pulled hard-at-work fans away from the game, making it an unwise investment to start up a 3rd league of eight teams. Additionally, with the building of new concrete-and-steel supported ballparks, people became more cognizant of the business aspects of the game (Allen 1950, 180-181) and reacted negatively.

The Feds made a valiant attempt to undermine (or force inclusion) into the professional baseball game as Zimbalist offered, "The FL eschewed the reserve clause and pursued long-term contracts in its stead...According to one account, as many as 221 players defected to the FL during 1914-15" (A. Zimbalist 1992, 9). Sixty years before free agency was a realization, the two-year foray of the Feds was innovative, if ill-conceived (as the table below suggests.)

After the Federal League's closure, and significant losses (see below, next page), litigation commenced by the Feds. Filed in the district of Northern Illinois federal court in front of judge Kenesaw Mountain Landis, who was not considered a proponent of monopolies (1907 Standard Oil decision), but did favor baseball's monopolistic policies nonetheless (A. S. Zimbalist 2006, 27) assured the Feds defeat. As one quote by Landis reflected, "Any blows at the thing called baseball would be regarded by this court as a blow to a national institution" (Golenbock, Wrigleyville: A Magical History Tour of the Chicago Cubs 1996, 166). Thus began a symbiotic relationship that lasted between baseball and Landis for over a quarter century.

Table. Top 1914 Federal League Players (Baseball-Reference)

Hitter (OBP)	Age	Tm	PA	AB	2B	3B	HR	SB	SO	BA	OBP	SLG	Pos
Benny Kauff*	24	IND	669	571	44	13	8	75	55	0.370	0.447	0.534	O987
Steve Evans*	29	BTT	583	514	41	15	12	18	49	0.348	0.416	0.556	O973/8
Ed Lennox	30	PBS	516	430	25	10	11	19	38	0.312	0.414	0.493	5
Ward Miller*	29	SLM	480	402	17	7	4	18	36	0.294	0.397	0.400	O78/9
Benny Meyer	29	BAL	593	500	18	10	5	23	53	0.304	0.395	0.410	O97/68
Art Wilson	28	CHI	533	440	31	8	10	13	80	0.291	0.394	0.466	2
Baldy Louden	30	BUF	500	431	11	4	6	35	41	0.313	0.391	0.399	6
Ted Easterly*	29	KCP	478	436	20	12	1	10	25	0.335	0.384	0.443	2
Joe Agler*	27	BUF	556	463	17	6	0	21	78	0.272	0.376	0.335	307/89
Vern Duncan*	24	BAL	667	557	20	8	2	13	55	0.287	0.375	0.363	O879/54
Pitcher (ERA)	Age	Tm	W	W-L%	ERA	CG	SV	IP	FIP	WHIP	H9	BB9	SO9
Claude Hendrix	25	CHI	29	0.744	1.69	34	5	362	2.29	0.94	6.5	1.9	4.7
Russ Ford	31	BUF	21	0.778	1.82	19	6	247	2.6	0.93	6.9	1.5	4.5
Doc Watson*	29	CH/SL	12	0.500	2.01	14	1	228	2.9	1.14	7.3	2.9	3.4
Cy Falkenberg	34	IND	25	0.610	2.22	33	3	377	2.11	1.12	7.9	2.1	5.6
Erv Lange	26	CHI	12	0.522	2.23	10	2	190	2.64	1.14	7.7	2.6	4.1
Nick Cullop*	26	KCP	14	0.424	2.34	22	1	295	2.7	1.16	7.8	2.6	4.5
Gene Krapp	27	BUF	16	0.533	2.49	18	0	252	3.31	1.24	7.1	4.1	3.8
Jack Quinn	30	BAL	26	0.650	2.6	27	1	342	2.23	1.17	8.8	1.7	4.3
Ed Lafitte	28	BTT	18	0.545	2.63	23	2	290	3.28	1.33	8.1	3.9	4.2
George Mullin	33	IND	14	0.583	2.7	11	2	203	3.46	1.44	9	4	3.3

* Left-handed

Table. 1914 Profit Summary (Ed Barrow: The Bulldog Who Built the Yankees' First Dynasty) (Levitt 2008, Appendix, Table 4)

<u>City</u>	<u>National League</u>	<u>American League</u>	<u>Federal League</u>	<u>International League</u>
New York	\$120,000	(\$20,000)		
Chicago	\$50,000	\$70,000	\$20,000	
Brooklyn	(\$25,000)		(\$60,000)	
Philadelphia	(\$20,000)	\$18,000		
St. Louis	\$30,000	(\$10,000)	(\$50,000)	
Boston	\$90,000	\$75,000		
Cleveland		(\$80,000)		
Baltimore			\$10,000	(\$43,000)
Pittsburgh	(\$30,000)		(\$38,000)	
Montreal				(\$40,000)
Detroit		\$30,000		
Buffalo ¹			(\$30,000)	
Toronto				(\$30,000)
Cincinnati	(\$5,000)			
Newark				(\$30,000)
Washington		(\$15,000)		
Jersey City ¹				
Kansas City			(\$40,000)	
Indianapolis			\$12,000	
Providence				(\$12,000)
Rochester ¹				
Totals	\$210,000	\$68,000	(\$176,000)	(\$155,000)

1. Not Available for International League Teams (but likely greater than -\$15,000)

Other Notes: (Levitt) notes that the losses in these leagues were much greater than reported through various sources compiled during the time frame such as New York Times & The Sporting News

Origins of Wrigley Field. Charles Weeghman owned fifteen luncheon restaurants in Chicago with long, profitable lines. He bought the land between Waveland, Clark, Sheffield, and Addison from the Chicago Lutheran Theological Seminary better known as 1060 West Addison. He erected 'Weeghman Park' for \$250,000, hiring architect Zachary Taylor Davis, the designer of Comiskey Park. With the abolishment of the Federal league, two teams – the Chicago Whales and St. Louis Federals – were absorbed into the majors as the Chicago Cubs (with Weeghman and Harry Sinclair of Sinclair Oil as owners) and the St. Louis Browns (Phil Ball).

Weeghman, born Veichman, suffered financially as war preparations cut into a restaurants' menu. Government austerity measures instituted by Hoover's Food Administration, "wheatless, meatless, and porkless" days, turned this successful businessman into a bankrupted soul by August 1920 (Devency 2010, 16). The team got a new owner in William Wrigley, and a name forgotten as the first park label on the soon-to-be ivy-kissed walls.

2.1. Hitting: Babe Ruth and Power Surge I

With the league war ended and world war over, baseball resumed play with hopes of normalcy. But as it turned out, baseball embarked towards a new direction: leaving behind a firm mantra of stealing bases, bunting, and always, contact hitting. Thoughts, in this era, reflect contact mattered most as, "The figures are of no special value or importance...except as they may indicate in a *vague* way his ability to 'wait out' or 'work' the pitcher" (James, *The New Bill James Historical Baseball Abstract: The Classic – Completely Revised 2001*, 104), referring to obtaining walks. Such was the tactics on how to produce better offenses by the leaders in the game.

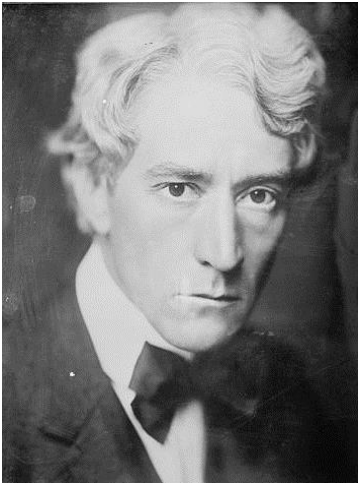
The dynamic on-field change was a product of differing edicts and courses set by the actions (and whims) of two men. Both acting, as it were, "in the best interests of baseball." Even if they didn't know what that was. One was 'championed' to rescue the game after the Black Sox scandal of 1919; the other came bright-eyed to the baseball institution, without formal education, or philosophical bents, other than to explore extensively hedonistic desires while cracking baseballs into specks against the blue. Landis, the federal judge, had no real experience in running or understanding baseball games. For Ruth, he too just changed professions: once an ace pitcher that soon found swinging a bat more appealing as the dollars rose up to meet his prodigious home run blasts.

Kenesaw Mountain Landis (1866-1944) was never a man that positively inspired people with his demeanor or presence as a quote from *The Big Bam* reflects, "He was an odd, foul-mouthed little man, an ego-driven, tobacco-chewing puritan with electric white hair shooting out of his head, a hanging judge with the wrath of God carved across his face (Montville 2007, 143)." Ford Frick, future commissioner of baseball and NL president, but then, just a sportswriter spoke similarly: "He was one of the most profane men I ever heard in my life...Once he was talking about his golf game...and somebody asked how he had done. He said, 'I bitched my drive, boogered my mashie, [and] I fucked up my approach shot (Holtzman 1974, 202).'" Another Landis exchange about presidential candidate Al Landon: "You know what I think of Landon? I think he's a beer-bellied, pinch-pennied Presbyterian son of a bitch. But I'm going to vote for him anyways, 'cause he's the kind of man this country needs (Holtzman, 202-203)."

From birth to an assistant surgeon for the Union Army and named after Kennesaw Mountain in Georgia, Landis, never considered high on intellect, nevertheless, strove persistently with a flare, and a gift for the big stage. He dropped out of high school at fifteen, giving up on algebraic calculations, to take a job in a grocery store in Logansport, Indiana (A. S. Zimbalist 2006, 38).

By twenty, Landis stumbled upon opportunity as an assistant to the Indiana secretary of state after working to elect the man to office. (Landis had two brothers that became U.S. congressman.) For the next several years, Landis worked at the law, applied to the bar without a law degree, but obtained that degree at Chicago's Union Law School (A. S. Zimbalist 2006, 38-39).

In 1893, Landis again lucked into better prospects: This time via a family friend, Walter Quinton Gresham, named U.S. secretary of state under Grover Cleveland. Thus, Landis, a meagerly educated man, landed a patronage position near the pinnacles of power. By 1905, through more luck and haphazard work, Landis controlled the harshest powers of the legal system, but saw his capricious judicial decisions critically reviewed and often overturned (Snyder, *A Well-Paid Slave: Curt Flood's Fight for Free Agency in Professional Sports* 2006, 99). (The *Standard Oil* ruling was reviewed and reduced in damages. **Left:** Commissioner Landis (Bain Collection))



Pulitzer winner George Will description of Landis: "Landis was a judge, an egomaniacal and grandstanding judge, but he was just what baseball needed in its hour of maximum need...Eight players, some more dumb than dishonest, were banned from baseball for life; nothing happened to the gamblers. Then baseball picked itself up...built Yankee Stadium, put Babe Ruth on center stage and rollicked through the 1920s (Bunts: Curt Flood Camden Yards Pete Rose and Other Reflections on Baseball 1998, 136-137)."

Landis came full-hearted to the baseball scene, presiding over the Federal League hearings, but made an enduring baseball mark as the game's first independent commissioner. The baseball owners saw Landis as an immediate means to clean up the mess of the 1919 Black Sox scandal – giving him unheard of power in a business ensconced in persistent, petty power struggles (that never really stop). He immediately asserted authority in the 1920s by suspending players over gambling and participating in post season barnstorming tours. Babe Ruth felt his suspension wrath. (Landis though dismissed a fixed game incident allegedly involving Ty Cobb, Joe Wood, and Tris Speaker in large part to subvert, and diminish more, AL President/Founder Ban Johnson.)

Landis, still, was an odd choice for 1st commissioner given the short list of candidates, as Zimbalist comments: "...many notables were considered for the new job...William Howard Taft, General John Pershing...former secretary of state (and Woodrow Wilson's son-in-law) William Gibbs McAdoo... (A. S. Zimbalist 2006, 34)." Landis, ever-the-opportunist, utilized the tactic of gracious acceptance but "I'm doing substantial work in the world" caveat to leverage the owners to acquiesce to his demands for greater control and better compensation. It worked, and Landis found his final calling as czar of the best professional sports industry existing in January 1921.

As it turned out, Landis was equally versatile at exasperating ownerships as he was in frustrating adjudications, granting free agency to Fred Bennett, Pete Reiser, and Tommy Heinrich while only slightly hamstringing Rickey's St. Louis farm system model in 1938. But offsetting those decisions, Landis hurt the Detroit Tigers more significantly, costing Detroit an estimated \$500,000 and four MLB players in value (Levitt 2008, 335). Landis was a fluid component.

But some issues were cemented. Commissioner Landis held racial barriers inviolate costing fans clearer memories of the great African-American players of that day. He always held firm to the not-barred fiction, as in this December 1943 quote: "clearly understood that there is no rule, nor to my knowledge, has there ever been, formal or informal, or any understanding, written or unwritten, subterranean or sub-anything, against hiring of Negroes in the major leagues (Lester 2001, 209)."

Nearly a quarter century of Landis's quirks extended to the National Pastime, bringing back the reputation of the game by driving out gamblers (and the players) from fixing games. Landis fit the game well as a front man –as it was then – and endured longer than any other commissioner has to date, at 24 years. But as Leonard Koppett summarizes, "That Landis, became, for the next two decades, the defining force in baseball (and therefore in all professional sports) is beyond dispute. Whether or not his influence was good or admirable, better for baseball business or worse, and the foundation of future prosperity or an obstacle to what might have been faster and more worthy, one must judge [for oneself]...He was perceived as a savior (Koppett's Concise History of Major League Baseball 2004, 142)."

The on-field savior, a counterpoint to Landis, **George Herman 'Babe' Ruth (1895-1948)** was an eager child of the world, prone to excesses and boastfulness. He dominated the sports world throughout the 1920s in a manner hard to believe even with the now obsessive focus in the 21st century sports panorama. Growing up in Baltimore, he spent his formative years considered 'irredeemable' at the St. Mary's Industrial School for Orphans, Delinquent, Incurable and Wayward Boys (Montville 2007, 17). Babe Ruth landed at the reformatory, age seven, as a typical big, hyperactive, and outgoing boy. When not tasked as a garment maker, Ruth diverted his attention to baseball regularly. While among his cohorts, labeled troublemakers all, he obtained a rude moniker that stuck into the 1920s: 'Nigger Lips' (Montville 2007, 21) – as McGraw's New York Giants jeered during the '23 World Series. Later a better array of nicknames added to his legacy: The Colossus of Clout, the King of Crash, the Sultan of Swat, the Monster of Mash, The Bambino, and a host of others never mentioned quite enough, so they foggily faded away, much as Montville Leigh's *Big Bam* described Ruth's ethereal childhood as the son of a barkeep.

George Ruth learned to hit towering fly balls from Brother Matthias Boutlier from Cape Breton, Nova Scotia (Montville 2007, 24). Matthias, a burly man that was as large as an offensive tackle in the modern NFL, might be worthy of the 'Father of Home Run' title since his fungo-style hitting was mimicked by the bartender's son. George Ruth mastered the art, swinging skyward, soon evading outfielders and depositing balls over all the fences he ever encountered. Ruth learnt that one lesson from Brother Matthias (and probably only that one), how to hit a baseball as far as anyone could envision in those heady days of baseball. (The rest of the 'lessons' to be learnt there never took.) Ruth applied Boutlier's

lessons well; practiced them nearly year round, playing everywhere on the field, before someone important noticed Ruth's other mastered skill: pitching.

In 1914, Jack Dunn, the operator of the powerful and influential Baltimore Orioles franchise of the minor league circuit acquired the Babe, age 19. Jack Dunn started out his career as ballplayer, playing on smarts to make up for a bad arm due to childhood mishap (Montville 2007, 34). Dunn made his lasting impact as a top talent scout and creator of a big league feeder system of players for top market prices. (See: *The Pinnacle of the Minors*.)

On Valentine's Day 1914, Ruth signed as a pitcher sight unseen by Dunn for \$250 per month. Before Dunn reaped any long-lasting benefits from this acquisition (Ruth went 22-9, 2.39ERA, with 10 triples in 121 ABs), Dunn fell headlong into the Fed war, competing with the Fed League's Baltimore Terrapins. As seen above, Dunn's team lost over \$43,000 (Levitt 2008). So Dunn shopped the Babe around to Connie Mack and John McGraw, only to eventually sell him off to then Boston owner Joe Lannin (Montville 2007, 39-40).

Within two years, Babe Ruth hurled his way to superstar status, leading the league in ERA (1.75) and shutouts (9) in 1916. The Babe, three years on in 1919, progressed to a power hitter as naturally as ducks take to water, or owls engage in the nocturnal hunt. Montville Leigh weighs Ruth's pitching prowess versus another ace of the day:

"Matched against Ruth, the emotional, developing reprobate, [Hall of Famer Walter] Johnson easily was cast as the white hat against the black hat, goodness against perdition. The problem was, perdition had a much better team behind him. The two men faced each other five times during the '16 season:" Ruth won four times, 5-1, 1-0, 1-0, 2-1 and had a no decision, but was ahead 2-0 in ninth before getting into trouble. Ruth's record against Johnson from 1915 to 1917 was 6-1 (Montville 2007, 56-57)".

Even with Ruth earning his living on the mound, it was his greater potential that sparked conversations in May 1917. As Montville Leigh's *Big Bam* reflected, "Ruth took Johnson deep for the first time and earned a tailored suit [a favorite item of soothing] in the process. It also saw his future as a Yankee discussed jokingly amongst the principals: Col. Jake Ruppert and Harry Frazee. This as Ruth saw a change in his usage from star pitcher to mediocre first basemen to a Manny Ramirez/Ted Williams style of outfielder later on that season (Montville 2007, 69)."

By 1918, Ruth was as dangerous with a bat as he was proficient with the pitch. Manager Ed Barrow tightened the reins; an onerous task to tame the unconventional Ruth, leading to plenty of fights, tantrums, and dramas. As Bill James echoed, "Ruth tested the limits of the rules constantly; this was what made him who he was. He refused to be ordinary; he refused to accept that the rules applied to him; until it was clear that they did. Constantly testing the limits of the rules, as I see him, was Babe Ruth's defining characteristic... (James, *The*

New Bill James Historical Baseball Abstract: The Classic – Completely Revised 2001, 998).”

Barrow tested out, and eventually defined Ruth as an outfielder because Provost Marshal General Crowder issued his “work or fight” order in June 1918, causing Boston, among others, a roster problem. From this player adaptation, Boston achieved its last championship until the 21st century. The Babe garnered the first of his twelve home run titles to boot in this process redefinition.

As Ruth’s ability to smack the long ball grew, his desires to get compensation followed in lockstep. From his 3-year, \$10,000 per year contract signed in 1918, Ruth reconsidered for \$20,000 after his amazing 1919 season in which he smacked 29 home runs, scored 103 times, drove in 114 runs and slugged a then modest .657, all leading the American League by wide margins. Ruth alone hit 12% of the leagues’ home runs. He scored 18.26% of Boston Runs and won 9 games with a mediocre-for-him 2.97 ERA off the bump in his last significant pitching season.

His theatrical owner, Harry Frazee, refused to pay Ruth; demeaned the man’s recent exploits; cited his petulant and decadent behaviors as barriers to his future production; and resulted in the most famous trade ever made in baseball history. Three days into the Roarin’ Twenties, the Babe went to the Yankees for \$425,000 (in total cash transferred, since \$300,000 was a loan), while his hitting prowess resulted in the biggest affect in baseball scoring until President William Jefferson Clinton took the oath of office 72 years and 17 days later, at the outset of the now labeled ‘steroid’ era.

(Pictured Below: The Babe in 1926. Library of Congress, Bain Collection.)

Ruth never achieved model citizen status (targeted by Commissioner Landis for barnstorming); and his excesses are well-documented, as a long passage from Robert W. Creamer’s *Babe: A Legend Comes to Life* reflected vividly:



“His appetite was enormous, although accounts of it were often exaggerated. A report of one dinner says he had an entire capon, potatoes, spinach, corn, peas, beans, bread, butter, pie, ice cream and three or four cups of coffee...Ty Cobb, no stickler for accuracy in his memoirs of baseball life, said, ‘I’ve seen him at midnight, propped up in a bed, order six club sandwiches, a platter of pigs’ knuckles, and a pitcher of beer. He’d down all that while smoking a big black cigar. Next day, if he hit a homer, he’d trot around the bases complaining about gas pains and a bellyache.’ He belched magnificently and, I

was told, could fart at will.

He was, as noted, sexual athlete. In a St. Louis whorehouse he announced he was going to go to bed with every girl in the house during the night, and did, and after finishing his rounds sat down and had a huge breakfast...

He was very noisy in bed, visceral grunts and gasps and whoops accompanying his erotic exertions. 'He was the noisiest fucker in North America,' a whimsical friend recalled (Plimpton 2001, 61-62)."

Ruth's noise in bed and gluttonous behavior was in keeping with the care-free times in which he lived. Prohibition encouraged plenty of immoral and illegal behavior, from its law-enforcing citizens (Burns, Prohibition, 2011), so the Babe personified the further decadence: running of liquor; setting up front businesses; living a lavish lifestyle; enjoying the finest pleasures available, done with a sideways smile at the 18th Amendment law. Meanwhile, Ruth's on-the-field talent made the Yankees the franchise to emulate for years to come.

Most memorable, and subject of legend and lore, is the 'called shot' in game three of the 1932 World Series. As Lawrence Ritter and Donald Honig, baseball historians, reflect the nature and mystique of Ruth in *The Image of Their Greatness*:

"There was bad blood between the Yankees and the Chicago Cubs even before the 1932 Series started. Late in the season Chicago shortstop Billy Jurges had suffered an injury, and the Cubs dug into the minor leagues and came up with ex-Yankee Mark Koenig to replace him. Playing superbly, Koenig helped the Cubs to a pennant. When it came to dividing the World Series money [eventually \$4,244.60 for the Cubs] (Menke 1963, 137), Koenig was voted just a half share by his teammates. This rankled many...Yankees, particularly Ruth, to whom parsimony was unforgivable.

The exchange of insults...grew increasingly more heated and rancorous...In the top of the fifth inning [in game three] Ruth walked to the plate with one out, the bases empty, and the score tied, 4-4. The invective coming from the Cubs' bench was savage and obscene. Charlie Root, the Chicago pitcher, got two quick strikes across. What happened [next]...will forever be, a matter of controversy.

Ruth made some sort of gesture: the Cubs said he was holding up one finger and pointing out a Root to indicate he still had one strike left; some of the Babe's teammates insisted he pointed out to the center field bleachers, showing where he was going to hit Root's next pitch...what he did a moment later – he hit a tremendous home run over the bleach screen in center field.

Did he call his shot or didn't he? Ruth claimed – after the fact – that he had. The Cubs scoffed at the idea...Like so many other things involving George Herman Ruth, the truth has been covered by the gentle mists of legend..." (Ritter and Honig 1984, 122)

The Babe pursued other interests after his time in the game was up – desiring to manage in New York, preferably the Yankees, but getting 'a false called shot' to run Brooklyn. The knock was, "how can he manage others when he can't even manage himself?" So he never made that transition from player to leader of men.

The Babe knew few other skills. His bat was always the 5 o'clock lightening conduit to the adoring public. Once that lay silent, only the legends and stories made the Babe more of a man than the myths that surrounded him.

Wordsmith Grantland Rice, a friend and golf buddy, penned these lines upon Ruth's mortal departure:

Game called by darkness – let the curtain fall.
No more remembered thunder sweeps the field.
No more the ancient echoes hear the call
To one who wore so well both sword and shield.
The Big Guy's left us with the night to face,
And there is no one who can take his place.

Game called – and silence settles on the plain.
Where is the crash of ash against the sphere?
Where is the mighty music, the refrain
That brought joy to every waiting ear?
The Big Guy's left us, lonely in the dark,
Forever waiting for the flaming spark.
(Fountain 1993, 161)

Babe Ruth passed away on August 16, 1948, the day that the future king of Rock & Roll, Elvis Presley, left this mortal coil. They both left their indelible marks on America's cultural landscape, using instruments of wood to reach us all.

The Pinnacle of The Minors

In lockstep with the Babe's burgeoning power stroke, was the strongest period for the minor league system: the 1920s. The aforementioned Dunn's Orioles were so dominant (even without the Babe), that historians Bill Weiss and Marshall Wright placed the Oriole franchise four times in the top 15 among the 100 best minor league teams ever (Weiss and Wright 2001). This is a tribute to Dunn's independence, resourcefulness, and player personnel management.

The Orioles were more than just one or two great players in a hack league. Instead, the International League was the top minors in the eastern half of the United States, a source of substantial talent, as many major leaguers started off careers or ended their years in baseball in this league. A very short list of major leaguers include: David Alexander, Maurice Archdeacon, Moe Berg, "Sunny" Jim Bottomley, Hiram Cleo Carlyle, Charlie Dehringer, Jimmie "Double X" Foxx, Frank Gilhooley, Andy Harrington, Mickey Heath, George Kelly, George John Maisel, Fred Merkle, Walter Cleveland "Lefty" Stewart, Samuel Braxton Gibson, Myles Lewis Thomas, and James Charles Walsh. This list leaves aside the Baltimore players.

For example, Lefty Stewart won 20 games for the St. Louis Browns in 1930, quite a feat given the offense outburst of that season and accomplishing it for the Browns. Myles Thomas pitched for the 1927 Yankees, winning more than

a handful of ballgames. Fred Merkle, best known for his base running "boner", but in the International League, he pounded out a .340 average with cleanup pop. Jimmie Foxx, at 17, played for the Newark Bears/Providence Grays, who finished dead last in 1925 at 63-100. Sunny Jim Bottomley played in Syracuse for the fledgling farm system empire of Branch Rickey in 1922, hitting .348. He played against both Myles Thomas and Jimmie Foxx in World Series play, splitting four from 1926-31.

The enigmatic Moe Berg, predominately (and by accident) became a rifle armed backup catcher in the bigs, started out at the keystone in 1925 for Reading Keystones in the International League. Moe worked later for the OSS (Office of Strategic Services) utilizing his undergrad work in classical and Romance languages at Princeton and legal polish from Columbia to be, more likely than not, the most educated (intelligent) baseball player-cum-spy in the history. Or as John Kieran, sports columnist for the *New York Times*, called Moe "The most scholarly athlete I ever knew (Berger n.d.)."

From 1920 through 1925 International League teams were the Baltimore Orioles, Buffalo Bisons, Jersey City Skeeters, Reading Marines/Aces/Keystones, Rochester Hustlers/Colts/Tribe, Syracuse Stars, Toronto Maple Leafs and the Newark Bears/Providence Grays (Baseball-Reference.com, 2013).

Baltimore's dynasty, just down the coast from McGraw's powerhouse Giants and soon feeding Connie Mack's best teams since the \$100,000 infield, were efficiently winning 65-70% of their games over a period of six seasons.

Dunn's teams were not without competition, as the Little World Series championships games pitted them against the American Association victors. In 1920, St. Paul Saints brought Steamboat Williams and Bubbles Hargrave battery to challenge the Orioles. Orioles won 5-1. In 1921, 34-year old player-manager Joe McCarthy (18 AB) took Baltimore 5-3, with an entire squad of future/former MLB players, including Buck Herzog, an ex-Cub, who in an August 1920 tilt against Philadelphia, was under "suspicion" for throwing the ballgame (Dickson, Bill Veeck: *Baseball's Greatest Maverick* 2012, 18). (See: *Black Sox Scandal*.)

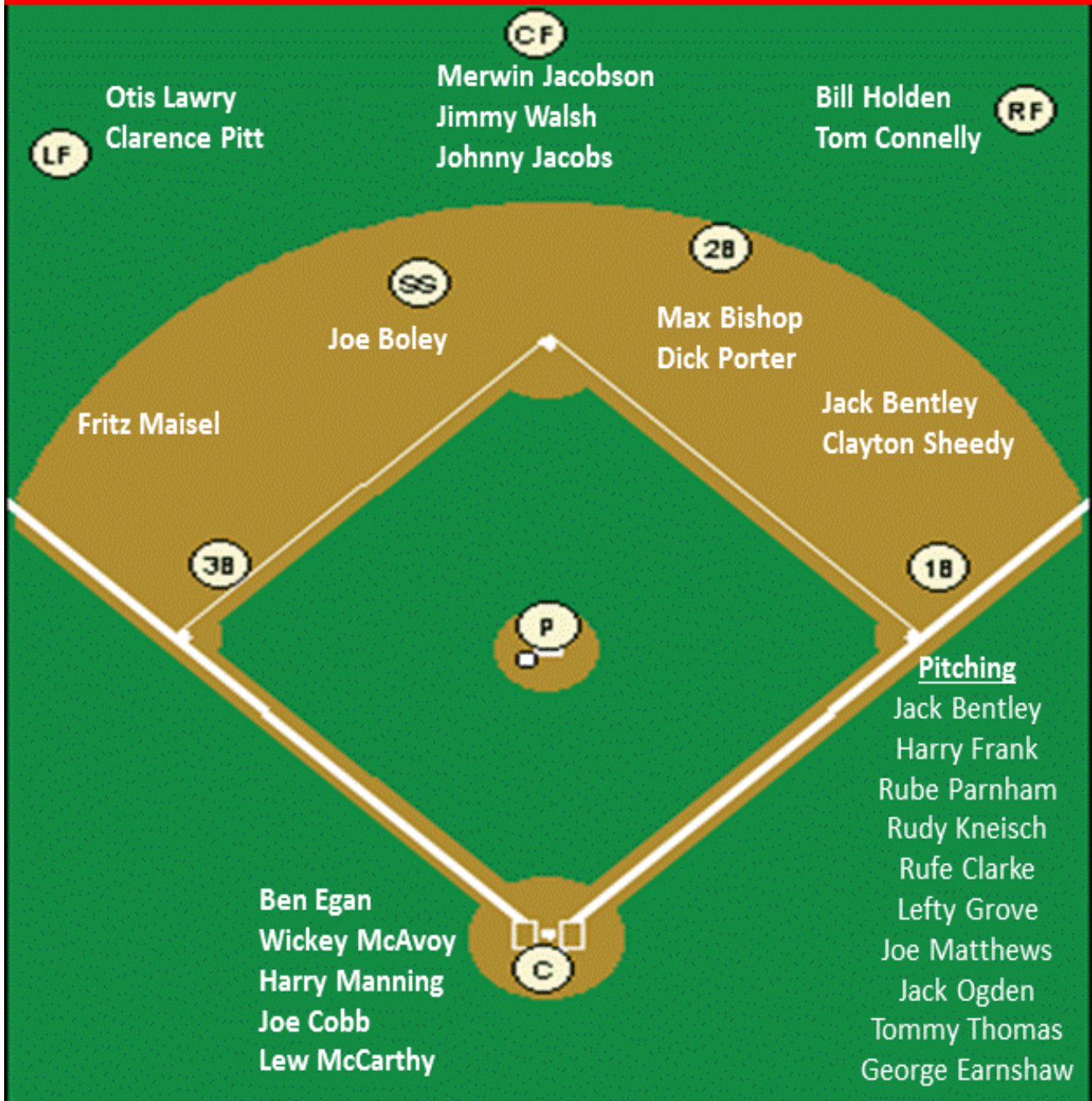
Modern And Classic Classifications & Leagues

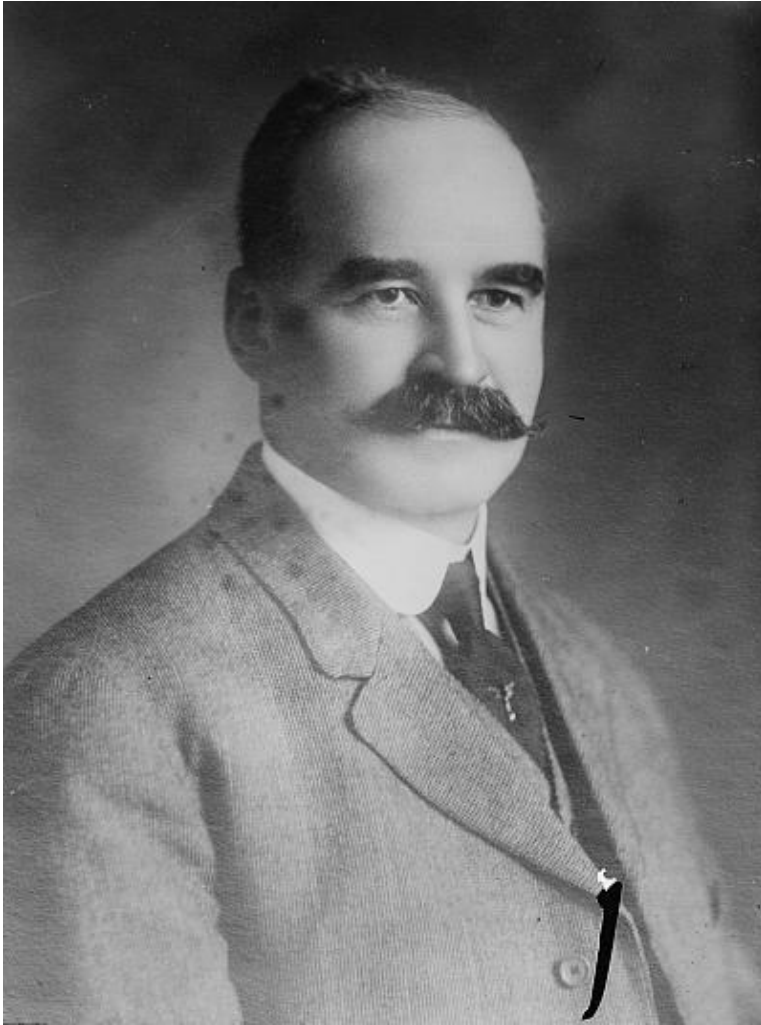
<u>Modern Classifications</u>	<u>Minor Leagues</u>	<u>Classifications (1912-36)/(1946)</u>
Triple-A	International, Mexican, Pacific Coast, (American Association)	AA/AAA
Double-A	Eastern, Southern, Texas	A/AA
High A Advanced	California, Carolina, Florida State	B/A
A	Midwest, Southern Atlantic	C/B
A Short Season	New York-Penn, Northwest	D/C
Rookie	Appalachian, Arizona, Dominican, Gulf Coast, Pioneer, Venezuelan	No class/D

The 1920-25 Baltimore Orioles of the International League

1920: 110-43, 1921: 113-53, 1922: 119-49

1923: 110-59, 1924: 124-63, 1925: 105-60





In Neil Sullivan's *The Minors*, he asserts that David Chrisman's history on the International League concluded that while the major league Giants and Yankees were a cut above, the Orioles were not inferior to the rest of major leagues at this point (1990, 80). Baltimore played in all the *Little World Series* from 1920–1925, winning 3, while losing 3 to the Louisville Colonels, Kansas City Blues, and St. Paul Saints. Only the Yankees have been so consistent for so long a time at the top, and not even at this juncture, but a decade on, with DiMaggio. (See: Volume II.)

One reason this anomaly existed was the National Agreement of 1921 allowed an exemption from the drafting of players up from the high minors as long as they, in turn, did not draft up from the lower minor leagues. As the International

League, American Association, and the Pacific Coast League represented the top minors (AA) of the time, each franchise could competitively work if it had solid leadership. Often they didn't. (**Above:** Joseph Lannin, Red Sox owner and purchaser of Babe Ruth from Jack Dunn; later, he watched as Charles Lindbergh's transatlantic flight lifted off from Roosevelt Field. He was international: a Canadian. George Grantham Bain Collection, Library of Congress.)

But even as Dunn rolled up a tough league, particularly the Toronto Maple Leafs, and faced ongoing battles with future Yankee skipper, McCarthy (then in Louisville), Branch Rickey made another part of that 1921 National Agreement work out in St. Louis: that of ownership of minor league teams by the majors. Rickey started gobbling up minors in the early 1920s in Texas, and had, in one case, affiliated an entire Nebraska State D-league (Sullivan 1990, 111).

With a Protestant penchant for profit (10% of deals for players sold), and healthy oratory reminiscent of William Jennings Bryant (Sullivan 1990, 94) to stop a player's desire of \$500 raise, or an owners mulling of a trade cold, Rickey never went long between opportunities. After a mediocre catching career, a legal background from Michigan, he scouted talent, got noticed enough to manage for

the lowly St. Louis Browns. Taking George Sisler from a Pittsburgh foe, Rickey taught the league about contract law, and made his first enemies in giving that lesson. Later on, these maneuvers landed him more field management, then a better fit: executive level, general management – to put his ideas to better use than on game-to-game strategizing.

Dunn meanwhile proved good at independent operations; kept players content (as best one could); sold players at open market prices; but, took on risks personally, as all minor league owners did. Rickey changed what had worked for the indies to what worked for him: affiliated/working agreements with low minors, at first; swapped players around to support St. Louis, first and foremost; installed managers and techniques to carry out his plan; and less risk in spreading out the pitfalls of a minor league franchise's failure. He turned profit from player sales to other teams, as the excess talent was created year by year, but subverted the minors' inherent control to do such deals by themselves. In essence, competitors for the same player hides dueled, and Rickey won out.

Jack Dunn died of a heart attack in 1928. His Orioles would not compete again in the Little (now Junior) World Series until 1944, beating the Louisville Colonels. The National Agreement expired; Rickey's model invaded the International League; and soon, even the Yankees followed the leader in Rickey with George Weiss and Ed Barrow ramping up development and churning out star players.

Black Sox: Eight Chicago White Sox Out of Baseball

Before going on to analyze the momentum of Ruth's exploits, connections, and "power" significance, we must glance back at a dark chapter in the history of the game: *The Black Sox of 1919*. The time period lent itself to increased gambling on the sport; as more money came to baseball, rabid popularity grew and glorifying stories pervaded the newspaper; ballplayers, rarely an educated lot, were observant enough to see they had power to increase their individual fortunes. The new ballparks and growth made it easy to see they were special performers. Most took to negotiations, or battled in the various league wars, while others jumped back and forth to whatever minor league was willing to have them, even if in violation of contracts made in the decade-old dual major leagues. But an unscrupulous few, who found gambling easy, or felt their share was never quite good enough, were willing to forego all the glory of winning for a five-figure payout from a parasitic, backstabbing lot: the professional gambling ballpark thug out for the fix.

The fix was in on the 1919 World Series against the Cincinnati Reds. The Sox were easy favorites going into the series, seen as demonstrably the best team assembled in a number of years. Pitcher **Edward Victor Cicotte (1884-1969)**, who had just won 29 games at 35 years old, was proving that age was not determining his effectiveness. However, his paycheck fell short (\$6,000) – as Comiskey set a ridiculous bar of 30 wins to earn a \$10,000 bonus (Asinof 1987,

21-22). And so, Eddie fell easy enough prey to the gamblers, as did ringleader teammate, first sacker Chick Gandil.

Gandil then set sights on **Claude 'Lefty' Williams (1893-1959)** who was reaching his prime with considerable aplomb, blossoming into a twenty-game winner, 300 innings-per-season ace. Without pitchers, throwing a series was remote; with them, it was nearly an assured outcome. Thereafter, Gandil enlisted SS 'Swede' Risberg, part-time infielder Fred McMullin, CF 'Happy' Felsch, 3B 'Buck' Weaver, and their best offensive weapon: LF 'Shoeless' Joseph Jefferson Jackson.

The direct/indirect contact with various gamblers (Abe Attell, Sport Sullivan, Sleepy Bill Burns, and Nate Evans) was supposed to net at least \$80,000 total for the players. Cicotte got his \$10,000 share before the opening game; Williams got \$5,000 before his second start; Risberg and Felsch \$5,000 mid-series; Jackson \$5,000 simultaneously with Williams. After the loss, Risberg and McMullin got another \$15,000 together. Buck Weaver "never caught a dime" – though he was aware of the entire scheme, he decided to play to win with the remaining clean Sox players. Gandil made out best (or worse) with \$35,000 (Asinof 1987, 125).

But as frequently as such schemes are hatched, someone refuses to be a "sucker" in the game. Players spend money suspicious reporters know they never had before. Another unusual incident sheds light on the nest of gamblers operating in the game. Gamblers turn snitches. Ownerships work for (and against) their own self-interests. And someone is put in charge to clean up the mess; but not always is the sequence of events clean, or orderly.

Comiskey was once allegedly intent on uncovering the scandal, but not to the American League's benefit due to a long hatred of Ban Johnson. And this mutual feeling rendered Johnson less than eager to pursue the charges until he had all his ducks in order. Therefore, Chicago prosecutorial/grand jury powers operated deliberately on slow idle. Chick Gandil bought a new car, house, and jewelry, and held out for more money in 1920. Then, on August 31, 1920, the Chicago Cubs were playing last-place Philadelphia Phillies in a meaningless game. But rumors from Detroit reflected the Phillies were guaranteed to win with huge bets riding on them. Despite Bill Veeck, Sr. starting Grover Alexander, unexpectedly, the Phils won 3-0. Within weeks of that incident, ex-fighter Billy Maharg, connected to Sleepy Bill Burns, spilled the beans about the scam. Telling the story on how Abe Attell double-crossed him and the players. Even when the scheme was fleshed out, the evidence gathered, disappeared, thus the players were off the hook: found not guilty. (Famed gambler Arnold Rothstein was lurking in the shadows, but not directly operating with the players. He took 'side' action. Smart, savvy, and shady men are never too close to their own dirty work. But Rothstein paid the price eventually.)

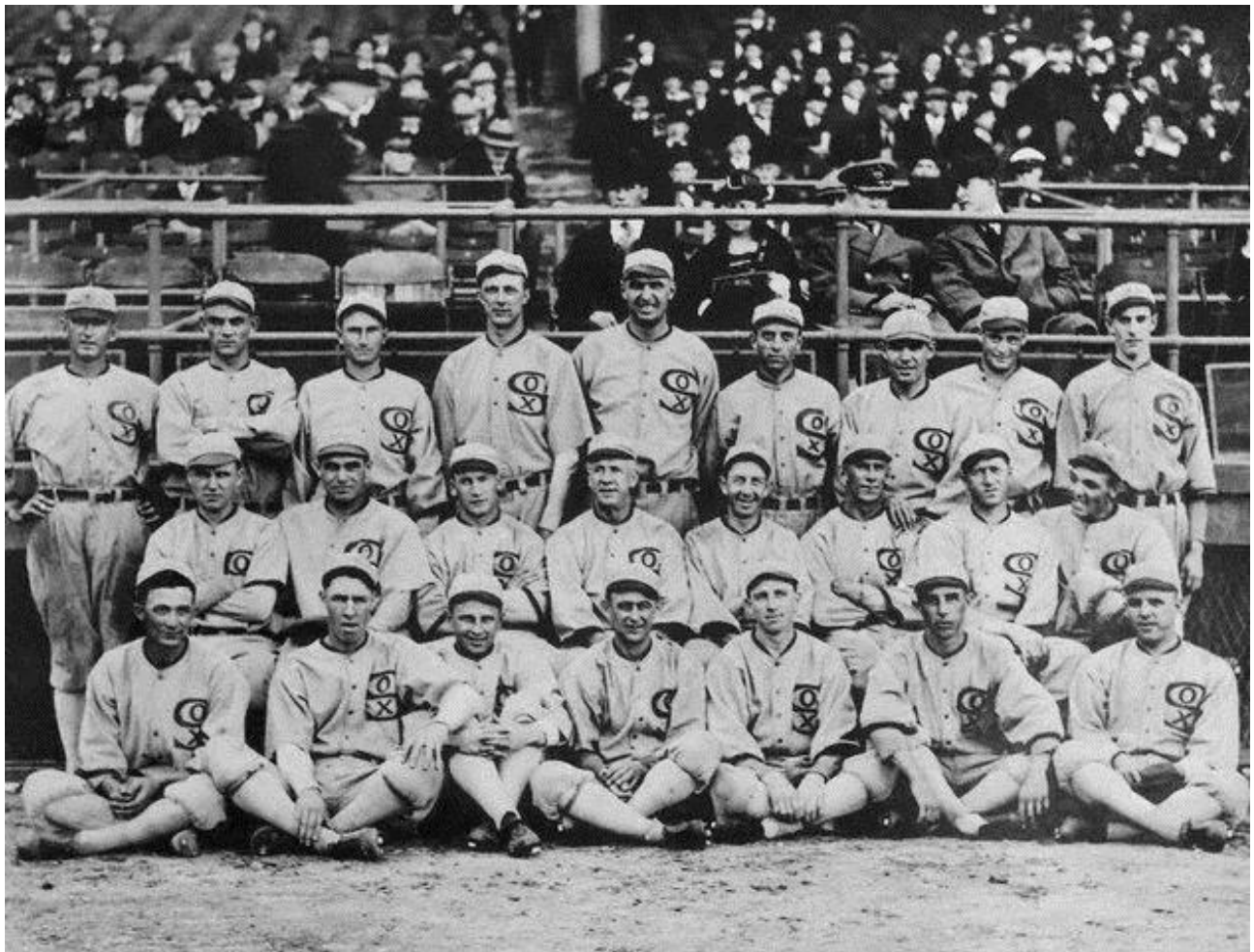
However, with a decision standing on appeal in the District of Columbia threatening baseball's treasured monopoly, player control supremacy, and closed-door policies, the game was ripe for an iron-fisted commissioner to oversee punishment, clean up the sport (as it suited), and ferret out the truth

(when financially beneficial to the game). Landis stepped in, and played the part better than any *No, No Nanette* actor could.

A Prequel to 'The Fix Is In' in Chicago?

Prior to the White Sox gambling scheme, the Chicago Cubs and Boston Red Sox were thought less than clean, before and during, the 1918 World Series. Author Sean Deveney published in early 2010, *The Original Curse: Did The Cubs Throw The 1918 World Series to Babe Ruth's Red Sox and Incite the Black Sox Scandal*. Many of the same characters are involved in the White Sox scandal and the Chicago Cubs 1920 incident. Other World Series in the teens were thought to be suspicious as the 1912, 1914, and 1917 classics had their peculiarities.

Baseball historian Paul Dickson's 2012 biography on Bill Veeck, Jr. alleges much the same on the series between the Cubs and Red Sox (Dickson, Bill Veeck: Baseball's Greatest Maverick 2012).



1919 Chicago White Sox: Together, But Decidedly, Apart.

Diagram. Calculation Process for MLB Power Ratio Changes

Modified SPC Analysis of MLB from 1905-1935



Statistical Process Control is a time-oriented analysis of a process that has variation due to random and nonrandom causes (Lindeburg 1992, 11-12). SPC is typically utilized to both track and/or later tweak a process while removing or identifying the nonrandom variations. In relation to baseball, the purpose is to reflect a process (such as HR%, 2B%, or BA, in an particular era) and note changes that occur outside the Upper Control Limits ($\bar{p} + (3\sigma_p)$) and/or Lower Control Limits ($\bar{p} + (-3\sigma_p)$) or runs above or below the average that indicate out of control or a developing change in league play.

Basic Steps:

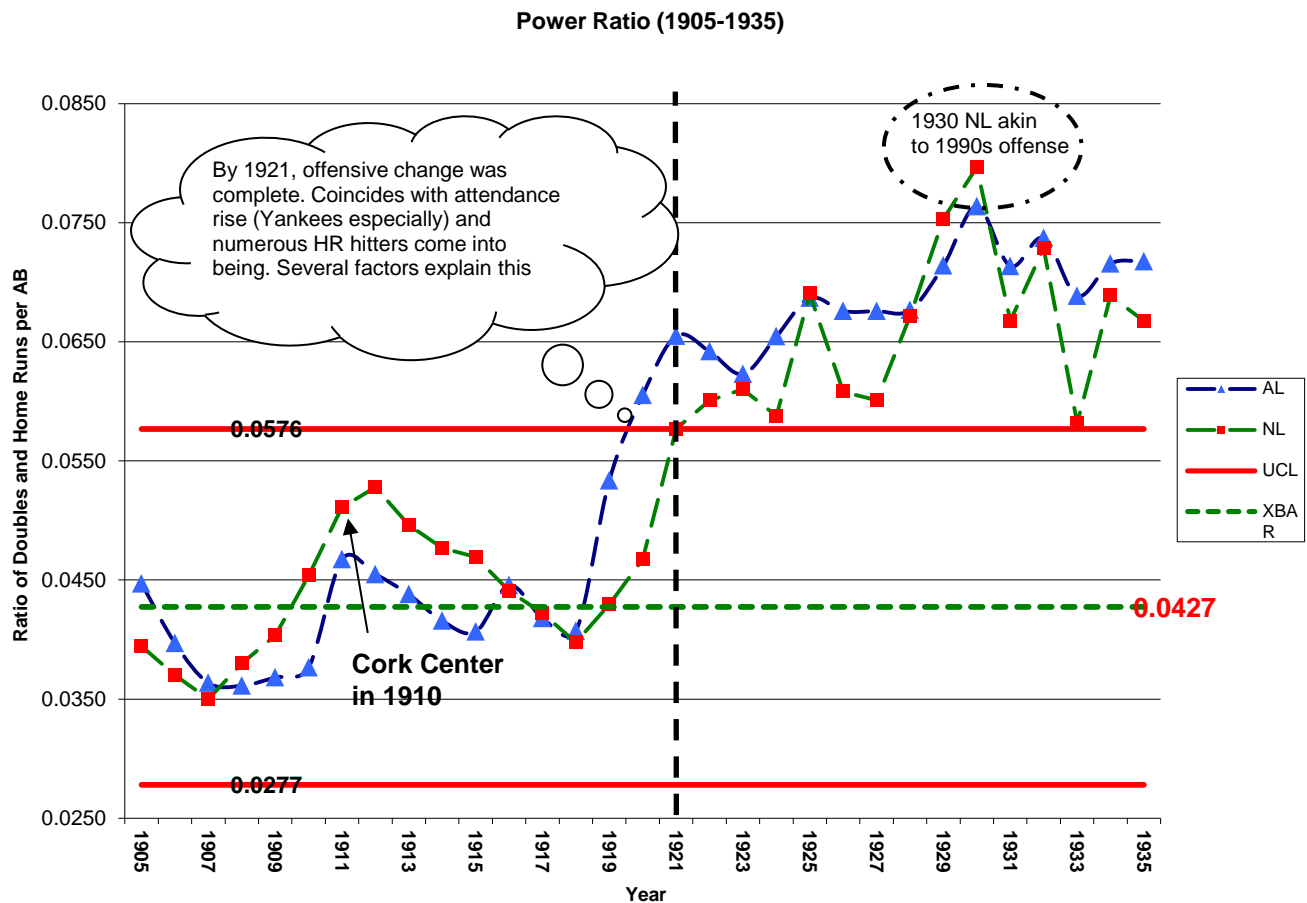
In constructing a P-chart – find the average occurrences of event

Find the sample size and calculate the sample standard deviation

Set control limits – $3\sigma_p$ (99.7%), $2\sigma_p$ (95.45%), or $1.645\sigma_p$ (90%)

For the period starting 1910-1919, the following chart was calculated utilizing the 2-league averages and their standard deviations (**Federal League** statistics not included):

Graph. SPC Ratio Home Runs + Doubles / At-Bats (1905-1935)



What this chart reflects is that by the 1920s, a drastic alteration occurred. The ratio% of home runs plus doubles per at bats deviated above historical norms. Even before that, from 1912-1918, The National League saw a steady decline in power generated by its players, likely due to greater spitball usage to countering the live ball affects introduced by 1911. But the greatest deviation happened by 1921. Several ideas put forth can explain some of the story:

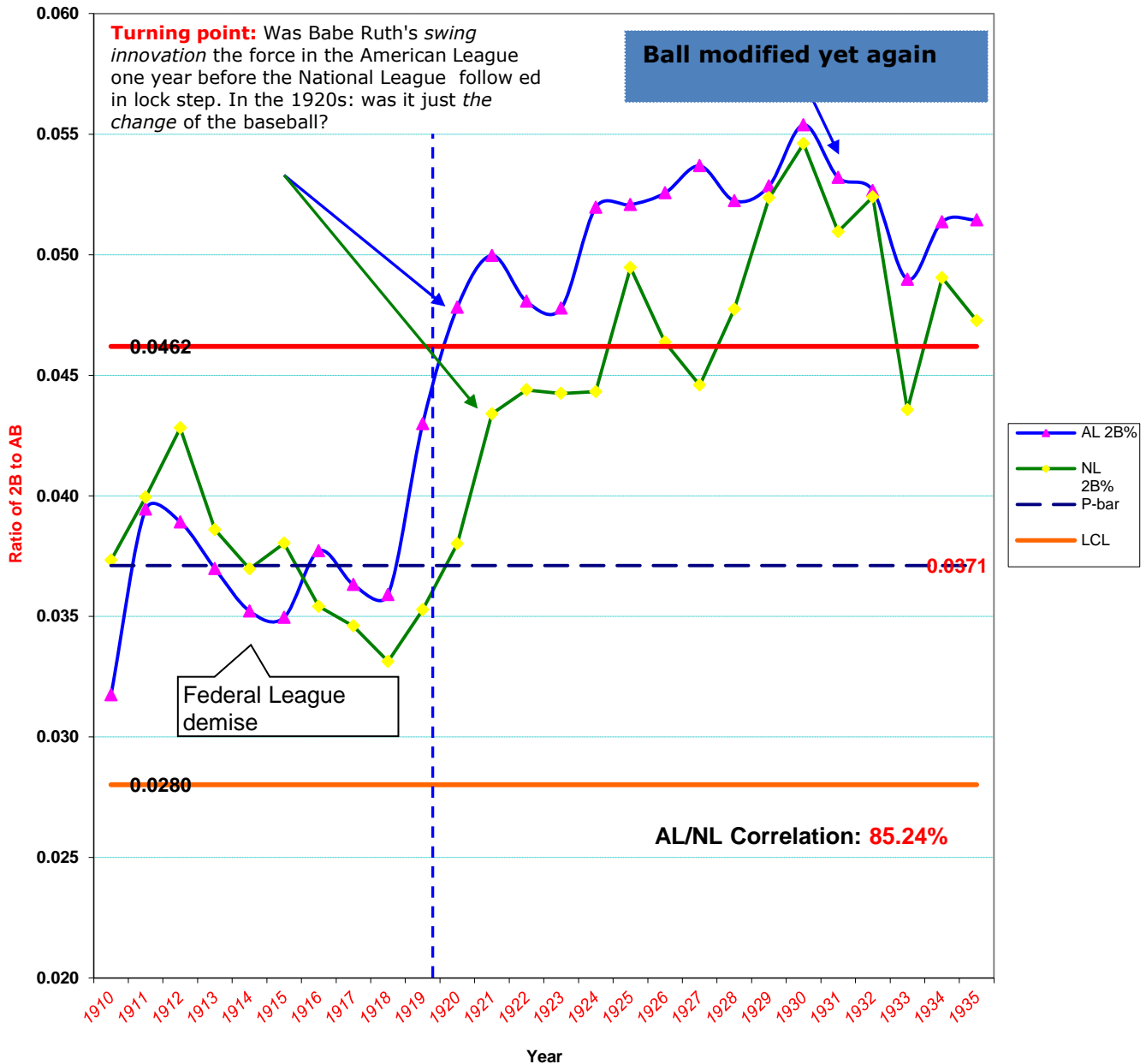
Five Influential Factors:

- Modification of internal design and manufacturing of baseballs
- Babe Ruth's power surge of 29 home runs in 1919: Made acceptable uppercut swing *innovation*, a league wide mimicking took place, fans noticed too
- Outlawing the usage of the 'spit ball': Carl Mays struck and killed SS Ray Chapman in August 1920
- Balls rubbed down with resin: Clean, yet dull, baseballs; easier to see
- Ballpark fences moved in during the 1920s; 1931 reverse ball modifications

To show again the change, a chart of just Doubles % is shown below:

Graph. Double Control Chart

Doubles Control Chart (1910-35)



In this case, seven consecutive points above the average (.0371) and sixteen above the UCL (.0462) reflect a significant change in the *random* nature (99.75% probability the process is out of control.) This out of control declaration as it relates to baseball means that hitting changed significantly at a given point in time; and is unlikely to have happened once by just mere chance. The odds are greater than 400-to-1 such would occur randomly just that one time. Thus, something identifiable changed: a causation effect. (Note: In the Pitching section ahead, this narrows down to a month for each league.)

Factor #1: Change the Internal Baseball

The live ball is likely *the single greatest change* ever in baseball history. William McNeil, SABR winner of the Robert Peterson award, reflects that A.S. Reach Co., manufacturer of the American League ball, "began using the Australian yarn that was stronger than the American yarn (The Evolution of Pitching in Major League Baseball 2006, 60)". Another pertinent early source reflected the modification proceeded from *Australian to American* in *The History of Baseball* by (Danzig and Reichler 1959, 219). Both William McNeil and Roger Kahn in *The Head Game* reiterated this manufacturing change that sequenced with the material changes. By 1922, Spalding, the producer of National League baseballs were, "in its Massachusetts factory" making similar alterations to the internal particulars of the most essential part of the game: the ball. Such circumstantial evidence supports a change was made: the Australian yarn worked better than the American yarn, and soon provided juice to hitters' bats. In Leigh's *Big Bam* this modification is colorfully recorded as:

"Another change had occurred with the baseball itself. Nobody knew the facts behind the change - that manufacturers now used a better grade of Australian wool and had developed new machines that wound the yarn tighter - but everyone knew the ball seemed to fly better. Or said they knew...Hit the new baseball, and it felt like solid against solid, bat against the kitchen table. Hit the old baseball and it felt like bat against living room sofa (Montville 2007, 111)".

Without definitive scientific testing from those balls (during that time frame – not in the present tense), there is no easy way to assert how much such a change influenced a baseball's flight. (The coefficient of restitution (COR) is one tool that measures relative speeds after a collision and before the impact). Some tests on resiliency were engaged in the 1920s, but the results always reported as being within *norms*. (*Remember*: no six sigma data sets, statistics, or linear regression analysis existed very easily. Such numerical calculations were years away; aside from the elite minds that would have seen baseball calculations a dreary, demeaning and pointless task.) So, one can imagine any low-level tester being easily 'persuaded' to reach conclusions, if only to bolster confidences in the internal structure and repeatability of manufacturing baseballs.

By 1930, the ball was tinkered with again, almost in lockstep with the stock market crash of October 29, 1929. The 1930 National League was no fun for pitchers with a fire hydrant-shaped 5'6" Hack Wilson smashing 56 home runs and establishing an unreachable standard of 190 RBIs. This did not go unnoticed as Cubs SS Woody English offered: "In 1931 the owners decided the ballplayers were hitting too many home runs. We realized something was different in '31 almost from the start of the season. You hit balls like you always hit them, and they'd plunk, sound like they didn't have anything inside... (Golenbock, Wrigleyville: A Magical History Tour of the Chicago Cubs 1996, 227)"

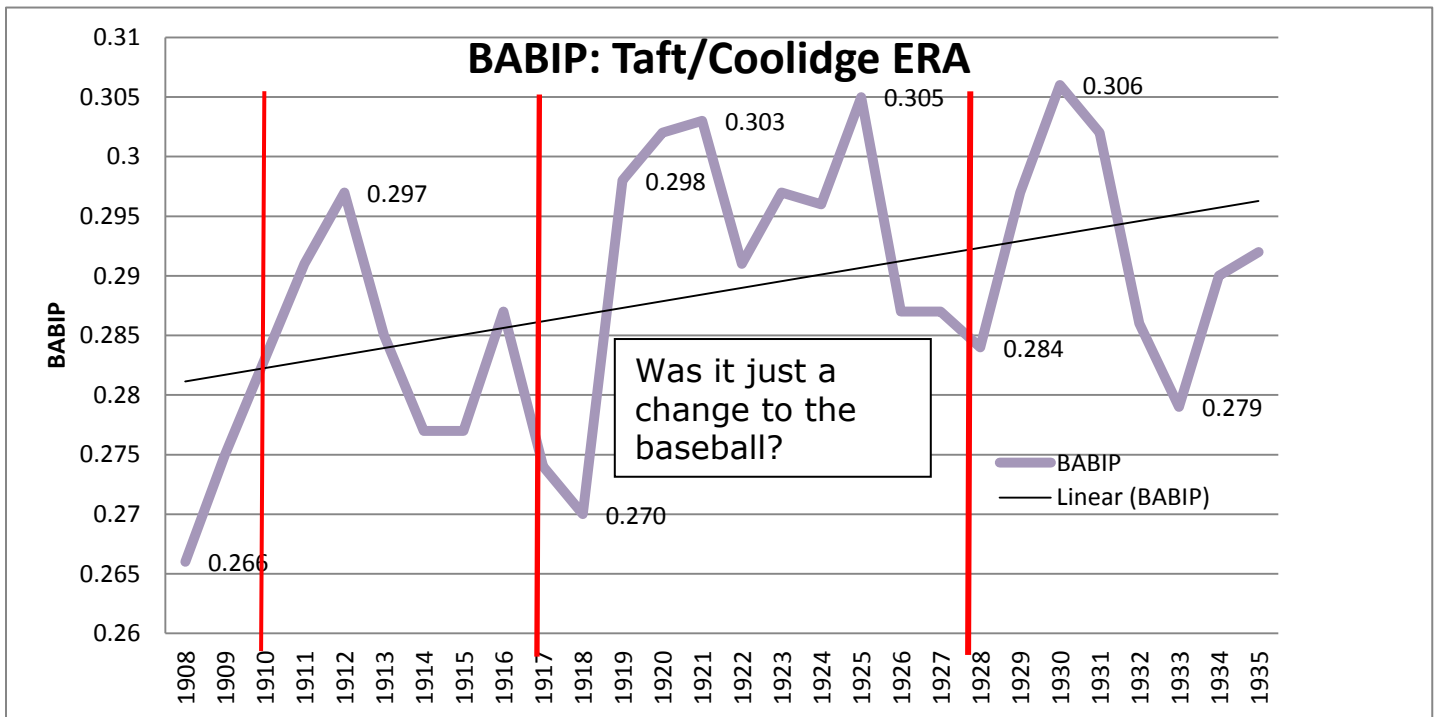
With these modifications to the ball from 1910 through 1930, players got major bumps in their home run and doubles totals. The changes were small,

barely noticed with the cork addition, but with better yarn, moved the power bar way up. This coincided with a modest growth in the sport's popularity in the 1910s. Ruth was to come: and he redid the game. Moreover, since 1922, until 1987, we will see other distinct changes due to home run swinging players, more strikeouts, and an offensive dip in the 1940s tied to more ball modifications. But this theory, taken singularly, or collectively, with the others to come, enabled a profound shift in the hitter v. pitcher arena. The game never reverted back fully to the low-offenses seen in the early days of dual, if separated, league play.

Even in 1968, the modern 'Year of the Pitcher' home runs, scoring and game play was nowhere near the 1903-1908 cusp of the 'modern era' of baseball performance levels. And baseball immediately responded after that eventful year. As time marched since, with technology and specialization encroaching, the emphasis on scoring through rule changes, park designs, equipment modifications, or weight training altered the record book further. Raw measurements, from era to era, are generally futile; or at least problematic, even with the best of intentions, or designs. (Not stopping anyone though.)

The graphs (below) take a snapshot of the first 'happy hitting' era that was the 1920s. First, the BABIP (batting average on balls in play) for the 1920s jumped significantly after 1919. The 1920s show definitively that pitchers were being abused by hitters, as a livelier ball found holes through the defense. Explanation of the BABIP statistic can be found at *Fangraphs.com*.

From the site: **BABIP** is simply: $(\text{Hits} - \text{Home Runs} / \text{At-bats} - \text{Strikeouts} - \text{Home runs} - \text{Sacrifice Flies})$ Or **BABIP = (H-HR/AB-K-HR-SF)**



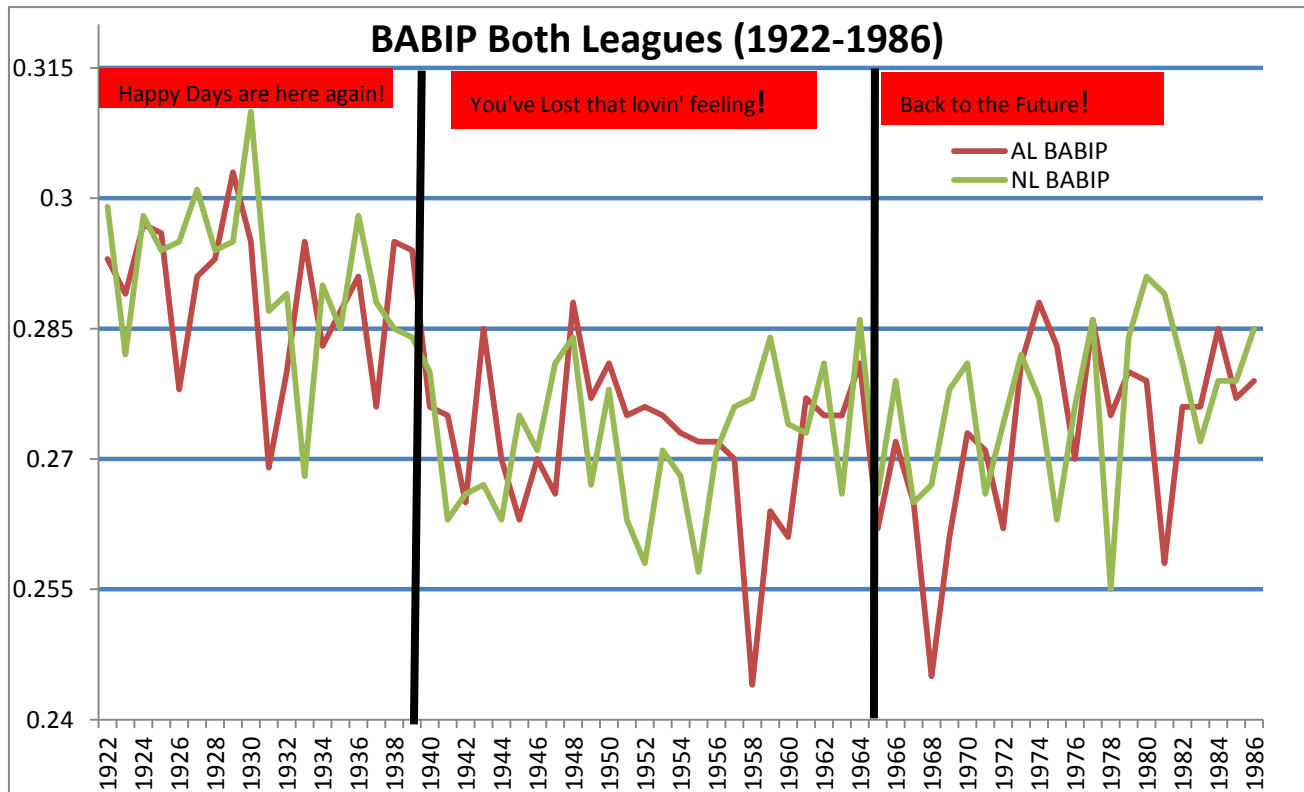
Fangraphs concludes that 3 variables affect a player's individual numbers

1) **Defense:** Good defenders on a field have more range, thus are more likely to turn a sure hit into an out. Since one has little control over the placement – consistently, at least – of a ball, improved defensive alignments and talent will thwart hitters; sometimes more than league norm.

2) **Luck:** A Baltimore chop, a 100 hopper through the infield, a liner that get down in front of a diving centerfielder are luck plays. This goes both ways – entire slumps are legend of hitting 1600 feet of flies that find the deepest part of the ballpark and a guy is always there on the warning track to get them.

3) **Changes in talent level:** “The harder a ball is hit, the more likely it is to fall in for a hit (Fangraphs.com n.d.)”

For the 1920s, a livelier baseball meant defenses were on their heels more – sharper hit balls, positioning deficits, allowed batters to take over. (Meanwhile, better gloves were needed and field maintenance became daily complaints from pitchers getting clocked. Change, and then, counteracting this change.)



Pre live ball numbers for a great hitter	Post live ball for a hitter w/ homers
Hits: 200	Hits: 200
HR: 5	HR: 30
Ks: 40	Ks: 40
AB: 550	AB: 550
Sac Flies: 5	Sac Flies: 5
BABIP: .390	BABIP: .358

What this reflects is that hitting more home runs would not ever (by itself) help one's BABIP. As we know, home runs spiked drastically, but so did hitting in general, so the ball change listed above first placed pitchers at a decided disadvantage for the entirety of the 1920s. (1958/68 NL worked against hitters.)

Factor #2: Outlaw the Spitball

During the teens, and after ball modifications in 1910/1911, a great many pitchers applied illegal substances to combat batters. Nothing was particularly above board as pitchers utilized whatever was handy to throw off hitters. (Umpires usually damned to stop it.)

As Steven Steinberg stated in his analysis, "Then in the 'teens, pitchers began to develop various trick pitches, known as 'freaks': the shine ball, the emery ball, the mud ball, the paraffin ball, even the licorice ball. All created contrasting surfaces or uneven weight distribution for the ball, making it travel in strange ways. While there were rules against these 'doctored' pitches, they were rarely enforced (or enforceable, since it was hard to prove what had been done to the ball, let alone prove who had done it)."

Steinberg continued on, "This was an era when teams put balls in the oven (making them livelier, for the home team) and the cooler (deadening them, for the visiting team). Pitchers were even known to slide phonograph needles into the ball, giving it quite a wobbly ride. As the 'teens were coming to an end, the situation was getting out of hand, and the baseball magnates considered cracking down on the abuses" (S. Steinberg, *The Spitter and the End of the Deadball Era Synopsis*, Part 1 2003). As usual, the ownerships tired of players taking the game into their own hands. Certainly, the sheer amount of manipulations of the baseball became a disturbing tactic for all persons involved and had to be reined in. (This falls under the concept of ceding too much playing freedom, while in turn, restraining salaries, will cause players to likely flout authority more, and black letter rules, until a bright line is drawn – even if by a tragic accident. Thereafter, the concept of never letting a good crisis go to waste as the 1994 strike may prove possible cover for more baseball tinkering. See: *Clinton Era*.)

The accident mentioned above was Carl Mays v. Ray Chapman. It was well documented Mays use his spitball in concert with a side arm delivery with good success. Even after the beaming and killing of SS Ray Chapman, Mays was amendable to teaching rookie pitchers how to use this advantage to confuse hitters. The ways of baseball in this regard changed little over the last 85 seasons. (Anything to gain the edge to win: intimidation, quirkiness, and cheating are tactics well-used in all sports, from baseball to cycling to football. Some practitioners are more calculated in doing this than others.)

Factor #3: Babe Ruth's Swing and Attendance

"Perhaps the baseball establishment became so enamored with the exploits of the Sultan of Swat, and the excitement generated around the American League in 1919 when he slammed 29 home runs, that they were happy with the juiced-up ball...[that] would attract more fans to the ballparks (McNeil, 60)." Often overlooked as the primary furtherance of this offensive change are the

positive financial ramifications in generating more offense, as seen by a bashing Babe Ruth to packed houses *on the road* in 1919. (No other Boston regular topped 3 dingers; and 2nd best in the American League in home runs was 10.) Steinberg approached this topic with, "Baseball purists may appreciate and prefer a pitching duel, but the casual fans who[m] would drive the turnstiles preferred scoring (The Spitter and the End of the Deadball Era Synopsis, Part 1)."

The casual fans have nearly always won out in terms of meeting their needs for action and generating cash flows for owners (and players, much later). Introducing offense, by any means, was acceptable if the gate and advertising revenues were to follow. A creative owner, later, Bill Veeck Jr., had to create a marketable team to the general public; generate 'buzz', as with the horrid St. Louis Browns in the 1950s. In his first ownership gig, Veeck's first major player acquisition was potential slugger, Lou Novikoff. (See: Bill Veeck.)

So, by far, the quickest and most effective way to pump up the gate is the addition of mashers, offensive talent. This induces more casual observers to show up, especially, if winning, followed suit. (Offense is the Yankee tradition – as will see later in this hitting section.) McNeil observed that with "the emergence of Babe Ruth as the game's premier slugger, and the frenzy his long wallops generated around the American League, created an army of Babe Ruth wannabes who gripped the bat down at the end and swung for the fences (McNeil, 61)." Such wannabe sluggers became readily available as more and more imitated the Babe. All-time batting average leader for righties Roger Hornsby played five full seasons before eclipsing double digits in dingers, then going from 9 to 21 to 42 jacks in the 1920-1922 National League. He had hordes of company looking to rake a ball deep into bleachers filled with youth, the life-blood of baseball.

Many pitchers felt similarly about the need to generate more offense: Walter Johnson, Hall of Fame Pitcher, who once said: "Hitting plays the most important role in a ball game. There is no getting away from the fact that the baseball public likes to see the ball walloped hard. The home runs are meat for the fans. 'Babe' Ruth draws more people than a great pitcher does. It simply illustrates the theory that hitting is the paramount issue of baseball." – Quote from *Evening Telegram*, August 22, 1920 (The Spitter and the End of the Deadball Era Synopsis, Part 1)

The great lefty Carl Hubbell expressed the same thoughts: "Most of the excitement in baseball happens at home plate and that, of course, means the hitter...If you don't have a batter, you don't have a game. So when you take most of the potency away from the hitter, you take a vital action out of the game. You damage the game at one of its most critical points." – Quote from the *Christian Science Monitor*, December 19, 1972 (The Spitter and the End of the Deadball Era Synopsis, Part 1)

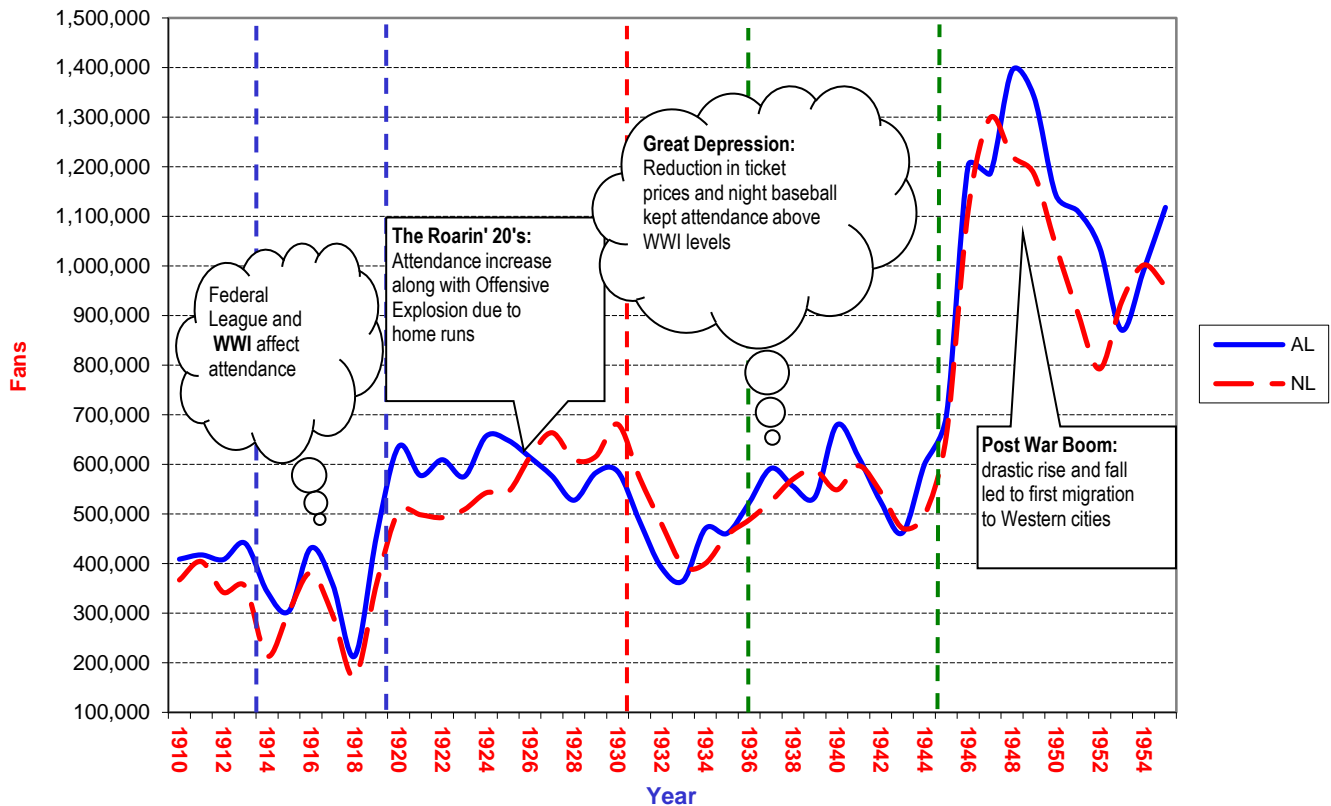
During the 1920s, both leagues enjoyed a relatively stable amount of fans attending games (500-650 thousand per year.) The changes to offense – as Babe Ruth and others developed a 'long ball' craze – can be seen in the consistent amount of people attending ballgames. Prior to 1920, park attendance was

unstable tied to World War I, the Federal League competition, and economic downturns reflected in the graph below.

Even after the stock market crashed, the Great Depression did not drop values below pre-1920 attendance. This however is likely accounted for by owners granting better deals at the turnstile (half-off pricing) to get anyone to attend games; and later, utilization of night baseball to promote attendance of daytime workers. This too is seen in a slight increase in 1936. (Ritter and Honig 1984, 151)

Night baseball was a novelty than an absolute driver. Yet, a few hundred or thousand extra fans made significant differences in a time frame where profit margins were indeed thin for owners, if they turned one at all. At this point, some owners were baseball men alone – Mack, for example – whereas, the Wrigleys were running a much larger empire of business operations. Baseball was a side gig.

Graph: Average Attendance per Team



The most drastic change happened in post WWII. Fans came to the park in droves. From 1946 to 1951 (1952 in the American League), more than 1 million souls per season came out to see their heroes return from the war to play baseball. This was pent up demand: a release after the greatest generation won the war. Growing prosperity and more free time (labor rules) helped baseball out.

But the 1940s windfall (to the owners), eventually led to busts, as several teams moved west from long time home parks due to abysmal attendance, home ballpark deficiencies and age, suburban growth, and changing media during the early days of TV. Minor Leagues were caught in the lurch, suffering an even worse fate. Additionally, the motto – *Go West* – had its credence as population grew rapidly to the expanding west coast, just asking for a few teams to meet this demographic-driven demand shift. This while ignoring the resident minor league, the Pacific Coast League, if that helped. Teams that first moved: Boston Braves (1952), St. Louis Browns (1953), Philadelphia A's (1954) were not West coasters, but they enhanced the move idea: no geographic area is permanent for baseball operations. (A tool was added to the ownership's financial box.)

While Babe Ruth bashing brethren certainly influenced attendance in the 1920s, such a "pop" in attendance regressed to a norm if without further amenity improvements, creative marketing ploys, or winning titles. Thus, baseball always reinvented itself to get a steady supply of "*Meat to the Seats.*"

Factor #4: Clean Exterior Baseball

An underrated reason for the explosion of hitting is the usage of cleaner baseballs. The baseballs, in prior years that were fouled off into the stands, were sought by park ushers, who returned the balls to the field of play. (James, *The New Bill James Historical Baseball Abstract: The Classic – Completely Revised 2001*, 121-122) If these balls were not immediately returned, it was only then that umpires put out a new ball (or whatever scuff one was available) to play. Of course, that did not stop the usher's hunt for these foul balls, but baseballs were by that time sufficiently scuffed, and defective, to a pitchers' advantage.

To quote Steinberg:

"Then there was the ball itself—not its composition or interior, but its cover. After the tragic death of Cleveland's popular star Ray Chapman, umpires were instructed to keep fresh, white balls in play at all times. Chapman was hit in the head by a pitch thrown by Yankees' submarine pitcher Carl Mays and may have had a hard time picking up the darkened ball. Hitters would no longer face a dirty, grimy ball, as the owners agreed to spend more money putting balls in play. While there is not a lot of specific data on the numbers, the September 1925 issue of *Baseball Magazine* noted that the National League used 43,224 balls in 1924, as opposed to only 14,772 in 1916. That's a lot more bright targets for hitters than they had in the past" (S. Steinberg, *The Spitter and the End of the Deadball Era Synopsis, Part 2* 2003).

David H. Martinez in *The Book of Baseball Literacy* concurred: "Chapman's death...inspired major league executives to order that umpires keep fresh white balls in play at all times; prior to that, the same one or two balls were used throughout the game..." (Martinez 1996, 279)

In consulting the website www.baseballlibrary.com, a history of rule changes made included references to the following:

1. The abolition of the spitball, with a "grandfather clause": each team is allowed to appoint two spitball pitchers for the 1920 season. [8.02]

2. The ball has its gloss removed before a game by the umpire. [3.01]
3. Enter the "lively ball." Australian yarn, said to be stronger than its American equivalent, may be wound tighter, so the ball's bounce and hardness increase. [1.09] (Baseball Library 2006)

Paul Dickson, in his Bill Veeck biography (2012, 257), reiterated these factors, though he considers the change in the baseball to lively, "a misnomer." This reflects again the nature of analysis: some can never be convinced.

Factor #5: Ballparks Modifications & Reverse The Juice

"There was another culprit that crept into the baseball equation during the 1920s...and that was the changing size of the ballparks (McNeil, 62)." Owners in both leagues saw to it that their newly found power (and fan) suppliers, if having any trouble hitting bombs (at home), garnered some assistance. Connie Mack brought in his left field fence from 380 to 312 feet. National League barons of baseball were uniform and united as Forbes, Sportsman's, Braves, Wrigley, Ebbets, and Crosley all adjusted inward to keep batters happy, and pitchers sad. The dominating Yankees were just a bit more subtle: just add Lou Gehrig, Earle Combs, and Bill Dickey to the mix – lefties versus the cozy Yankee short porch in right – and the offenses created were the best in MLB history. (See: Top 100 offenses (1908-2013))

By 1931, after the booming 1930 season of unparalleled offense – the entire National League batting average was at .303! – steps were made to cut off the happy offenses. The *Los Angeles Times* reported, "it was revealed today with the announcement that a new 'slower' ball will be used during the 1931 season...National League...would have a thicker cover and heavier stitch...American League would retain the same weight cover but that stitches would be heavier (McNeil, 62)."

Batting Averages (1929-1935)

Season	American League	National League
1929	.284	.294
1930	.288	.303
1931	.279	.277
1932	.277	.276
1933	.273	.266
1934	.279	.279
1935	.280	.277

The proposed changes worked well enough. Batting averages and slugging percentages were down in both leagues until 1934. For years, John McGraw was firmly convinced of the "theory of a lively ball." And lo, he was certainly aware of the epic changes he saw first-hand from his days throwing and hitting a baseball in Baltimore during their dominance in the 1890s through the early moderns to the clashes with Ruthian tactics in the early 1920s. McGraw died February 25, 1934; batting averages rebounded in the National League as it began using the

same ball as the American League (McNeil, 63); and offense return to the 'new normal' in the senior circuit. McGraw's departure happened just over a year before Ruth's final game.

Graph. Batting Average by Hand by Decade

Graph 2.1.4: Batting Average by Hand by Decade

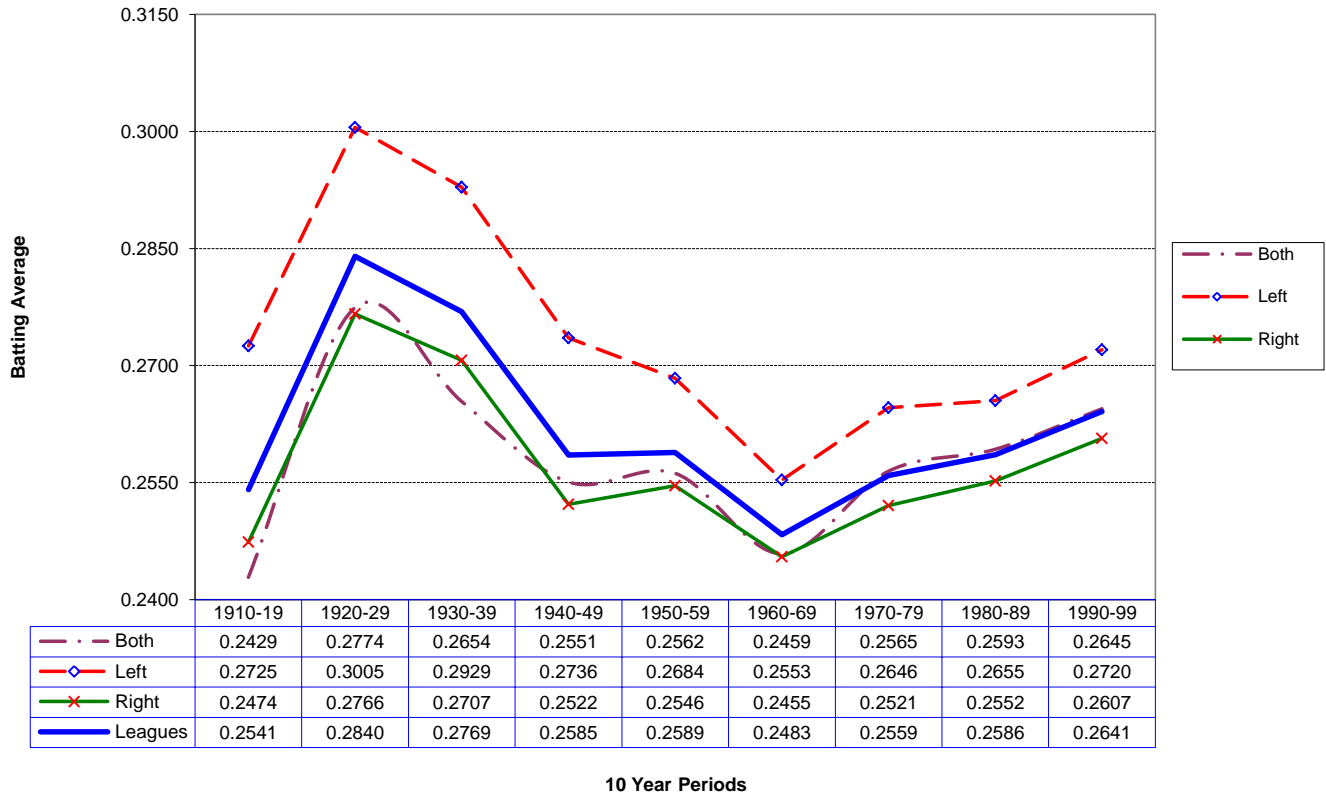


Table. Grand Totals for all 1920 hitters (and pitchers) by Handedness

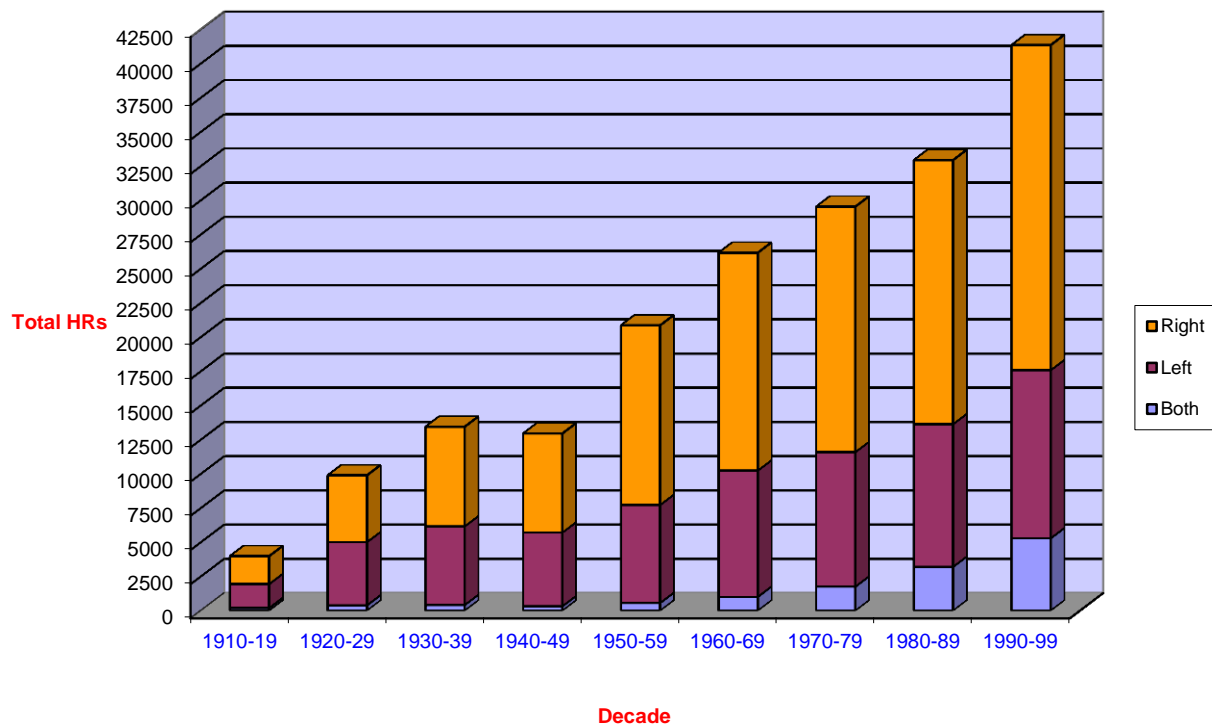
Type	Players/Seasons	AB	Hits	2B	3B	HR	TB	Walks	K	BA	OBP
Both	313	53298	14786	2337	705	393	19712	5208	4222	0.277	0.342
Left	1630	306132	91998	15416	4928	4622	131136	29817	20750	0.301	0.363
Right	3361	488495	135130	23116	6343	4879	185569	39371	44253	0.277	0.331
All	5304	847925	241914	40869	11976	9894	336417	74396	69225	0.284	0.341

Left hand hitters batted over .300 for the entire decade of the Roaring Twenties. Left hand batters (Babe Ruth, among them) nearly totaled the HR totals of right hand hitters while having less than 50% of the total players seasons.

All in all, the 1920s was dominated by hitters. Patience (walks higher than Ks), Low strikeout rate (12.25 ABs per K) and consistent power numbers by a few, but fairly numerous players. (Roger Hornsby, Ken Williams, Cy Williams, Gabby Hartnett, Jim Bottomley, Al Simmons, Lou Gehrig, Mel Ott and Hack Wilson, to name a select, and often, honored few.)

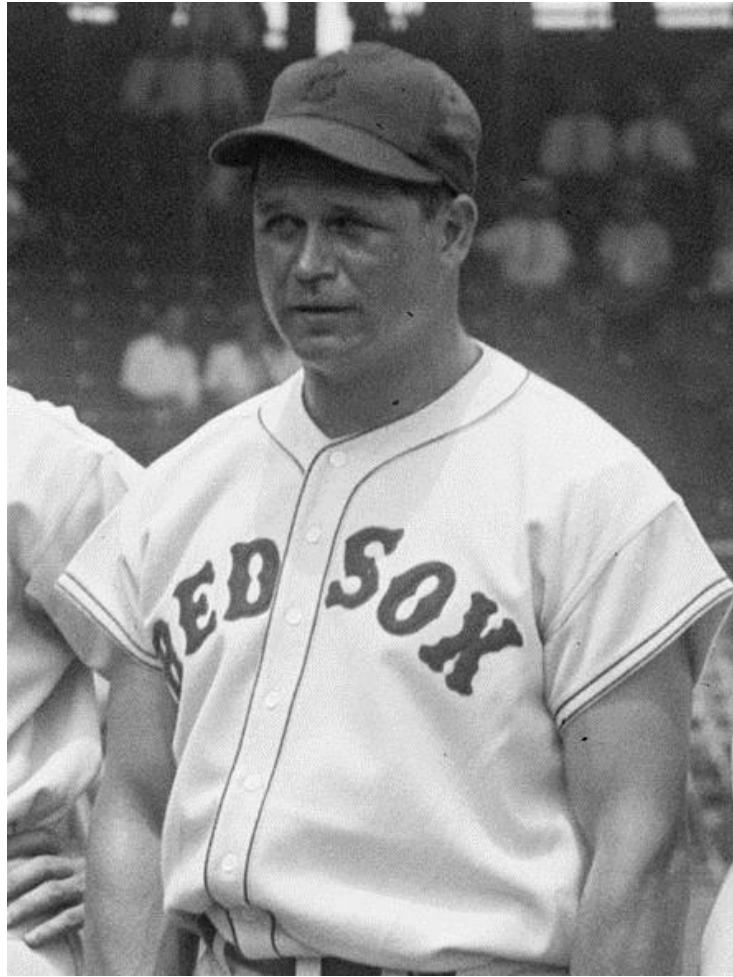
Meanwhile, later in the 1960s, batting averages can be seen as below the 1910–19 'Taft' decade. The 1960s are a product of poor adjustments to a larger strike zone as implemented in 1963. Even with the DH, the 1970s and 1980s do not come back to 1920/1930 levels of batting prowess. But the *Expansion Era* 1990s saw higher batting averages whilst on-base percentage continued to be affected by a lack of patience in ballplayers at the plate.

Graph. : Total HRs hit by Decade



Only the 1940s saw a lower total of home runs hit given the same amount of teams. (Early 1960s through the 1990s saw 14 additional MLB teams that accounts for the dramatic rise in long balls obviously.) A significant jump (148%) in home runs between (1910-1919) to (1920-1929) is visible during the juiced, cleaner ball, swing-for-the-fences mentality Coolidge Era.

Also of interest, the number of switch hitters rose as seen in the power numbers generated during the 1980s and 1990s. The ability to run while adding the opposite side of the plate for batting position flexibility became a high-valued commodity in baseball. Many teams such as the 1982 through 1987 Cardinals used plenty of switch hitters (Ozzie Smith, Willie McGee, Lonnie Smith) that made use of their quickness out of the box – if sans home run hitting. Meanwhile, two of best players ever – Mickey Mantle and Eddie Murray – employed tremendous power from either side of the dish.



One of the most feared sluggers of late *Coolidge Era*: **Jimmie 'The Beast' Foxx**. James Emory Foxx led the American League in vapor trails to the seats in 1932, 1933, 1935, and 1939, twice going over 50 home runs with Shibe Park and Fenway Park as his home haunts. He amassed 1,117 extra base hits in only 8,134 at bats, or one every eight times he picked up a Louisville Slugger, or some other handy piece of wood to mash balls with ferociously. Four times he amassed over 150 RBIs in a season. Off the field: a kind-hearted man. (Photo from the 1937 All-Star Game. *The Harris & Ewing Collection, Library of Congress*.)

The Best Hitting Teams by Era

While many men swung at the ball and crushed it for the long goodbye, the most memorable teams ever unified into potent lineups worthy of mention. These teams came together at key moments in the game – the changes from era to era – and thus, it is easy to see how hitting averages altered over time. These are their statistical legacies.

Top 5 Hitting Teams: Slugging/On-base Percentages in Taft and Coolidge

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Taft	1921	New York Yankees	0.464	0.375	98	948	5249	1576	285	87	134	588
Taft	1921	St. Louis Cardinals	0.437	0.358	87	809	5309	1635	260	88	83	382
Taft	1921	Detroit Tigers	0.433	0.385	71	883	5461	1724	268	100	58	582
Taft	1921	Cleveland Indians	0.430	0.383	94	925	5383	1656	355	90	42	623
Taft	1920	New York Yankees	0.426	0.350	95	838	5176	1448	268	71	115	539

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Taft	1921	Detroit Tigers	0.433	0.385	71	883	5461	1724	268	100	58	582
Taft	1921	Cleveland Indians	0.430	0.383	94	925	5383	1656	355	90	42	623
Taft	1920	Cleveland Indians	0.417	0.376	98	857	5203	1574	300	95	35	574
Taft	1921	New York Yankees	0.464	0.375	98	948	5249	1576	285	87	134	588
Taft	1920	St. Louis Browns	0.419	0.363	76	797	5358	1651	279	83	50	427



It should be of little surprise that the New York Yankees appeared high on the slugging list during the Taft and Coolidge eras. It is not coincidental that in 1921 and 1930 that the majority of top teams happened to outslug the rest of their respective teams over the 14-year period. In the Taft era, the change happened at the very end of the era. The Coolidge era tied in to baseball modifications. (Left: **Joe McCarthy** managed the 1930 Cubs to a disappointing 2nd place finish. *His reward*: Go manage the New York Yankees. He won 7 World Series at their helm. From Library of Congress, Prints and Photographs Division.)

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Coolidge	1927	New York Yankees	0.489	0.383	110	975	5347	1644	291	103	158	635
Coolidge	1930	New York Yankees	0.488	0.384	86	1062	5448	1683	298	110	152	644
Coolidge	1930	Chicago Cubs	0.481	0.378	90	998	5581	1722	305	72	171	588
Coolidge	1930	New York Giants	0.473	0.369	87	959	5553	1769	264	83	143	422
Coolidge	1930	St. Louis Cardinals	0.471	0.372	92	1004	5512	1732	373	89	104	479

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Coolidge	1930	New York Yankees	0.488	0.384	86	1062	5448	1683	298	110	152	644
Coolidge	1927	New York Yankees	0.489	0.383	110	975	5347	1644	291	103	158	635
Coolidge	1931	New York Yankees	0.457	0.383	94	1067	5608	1667	277	78	155	748
Coolidge	1923	Cleveland Indians	0.420	0.381	82	888	5290	1594	301	75	59	633
Coolidge	1925	Detroit Tigers	0.413	0.379	81	903	5371	1621	277	84	50	640

On-base percentage was varied slightly more, but Taft was predominated by 1921 season, reflecting the importance of Ruth, and the changing the baseball, with the hitting resulting thereof.

The 1927 Yankees and 1930 Yankees were both offensive powerhouses – one considered usually the *best team* in baseball history (see: Top 100 teams), the other, just another deficient 3rd place team – with this 3rd place team outscoring the next best scoring offense (Philadelphia A's, WS champ in 1930) by 111 runs, and also, those **1927 Yankees**. The difference in winning was the a bit more pitching in Philly.

Top 5 Hitting Teams: Slugging/On-base Percentages in the *FDR Era*

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
FDR	1936	New York Yankees	0.483	0.381	102	1065	5591	1676	315	83	182	700
FDR	1936	Cleveland Indians	0.461	0.364	80	921	5646	1715	357	82	123	514
FDR	1937	New York Yankees	0.456	0.369	102	979	5487	1554	282	73	174	709
FDR	1947	New York Giants	0.454	0.335	81	830	5343	1446	220	48	221	494
FDR	1937	Detroit Tigers	0.452	0.370	89	935	5516	1611	309	62	150	656

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
FDR	1949	Boston Red Sox	0.420	0.381	96	896	5320	1500	272	36	131	835
FDR	1936	New York Yankees	0.483	0.381	102	1065	5591	1676	315	83	182	700
FDR	1938	Boston Red Sox	0.434	0.378	88	902	5229	1566	298	56	98	650
FDR	1936	Detroit Tigers	0.431	0.377	83	921	5464	1638	326	55	94	640
FDR	1948	Boston Red Sox	0.409	0.374	96	907	5363	1471	277	40	121	823

Once again, the prevailing year is 1936, appearing in 4 cases for slugging and on-base percentages. The Yankees are well-represented – with the 1936 Yankees, another likely candidate for the best offense ever, showing up with the arrival of Joe DiMaggio. Nine of the ten teams are from the American League – with the Red Sox laying claim as nearly the best franchise at getting on base. Ted Williams was the best usually in both eras (FDR & IKE) at that particular skill. Boston's problem (in all years) though, was...the Yankees.

In 1947, The Giants smashed 221 home runs while getting to only a marginal 81-73 record. At home, they hit 131 dingers going (45-31) while on the road hitting 90 jacks for (36-42) showing. The run differential home and away was nearly identical (**417-380** at home runs, **413-381** away tally (Reichler 1988, 618)). Reflecting an oddity of home cooking and poor road performance is at the crux of why some talented teams still fall short. (BABIP for home teams is higher in brief research; Road teams' fielders are more uncomfortable, possibly.)

The Detroit Tigers came off a World Series win in 1935 to appear twice on the list as a 900+ run scoring juggernaut under the player-management of Mickey Cochrane. The 1936 Tigers were a team laden with bats: LF Goose Goslin, CF Al Simmons, and RF Gerald 'Gee' Walker all topped .315 in batting averages. 2B Charlie Gehringer hit .354 and 3B Marv Owen had his best season at .295 with 105 RBIs. But their problems stemmed from the mound: Tommy Bridges and Lynwood 'Schoolboy' Rowe were their best arms from 1934-1936, with little

else behind them. In 1937, Rowe went south for two years, and the Tigers just never found the arms to compete with the awesome Yankees. In 1937, Detroit's team ERA was 4.87. Only the Browns put up a worse showing at (6.00).

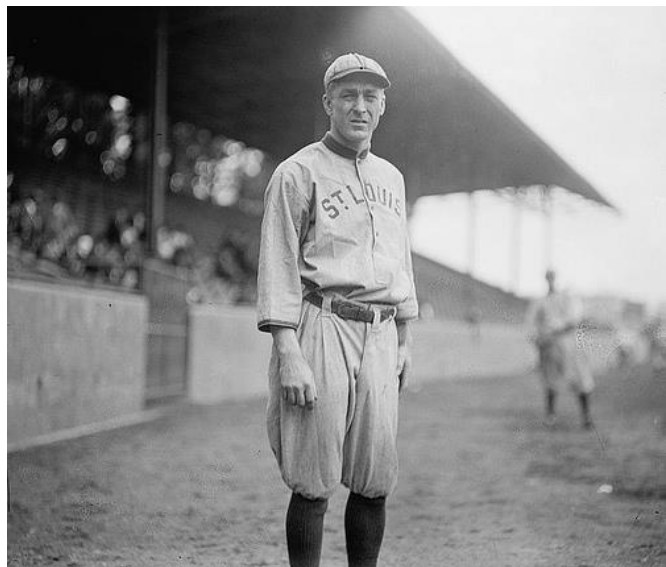
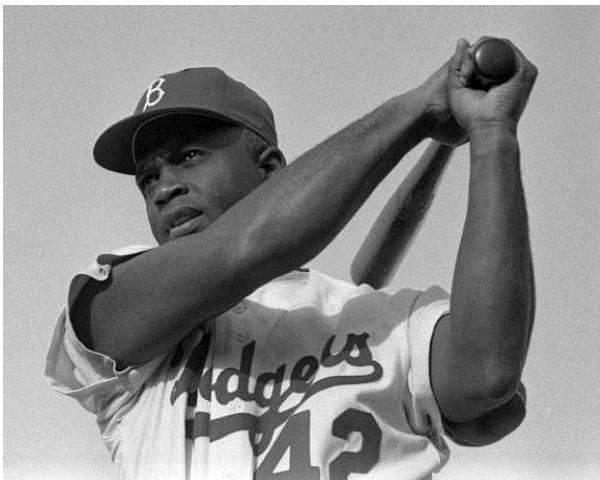
Top 5 Hitting Teams: Slugging/On-base Percentages in the *IKE Era*

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
IKE	1953	Brooklyn Dodgers	0.474	0.366	105	955	5373	1529	274	59	208	655
IKE	1950	Boston Red Sox	0.464	0.385	94	1027	5516	1665	287	61	161	719
IKE	1955	Brooklyn Dodgers	0.448	0.356	98	857	5193	1406	230	44	201	674
IKE	1954	Brooklyn Dodgers	0.444	0.349	92	778	5251	1418	246	56	186	634
IKE	1950	Brooklyn Dodgers	0.444	0.349	89	847	5364	1461	247	46	194	607
Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
IKE	1950	Boston Red Sox	0.464	0.385	94	1027	5516	1665	287	61	161	719
IKE	1950	Detroit Tigers	0.417	0.369	95	837	5381	1518	285	50	114	722
IKE	1950	New York Yankees	0.441	0.367	98	914	5361	1511	234	70	159	687
IKE	1953	Brooklyn Dodgers	0.474	0.366	105	955	5373	1529	274	59	208	655
IKE	1956	Boston Red Sox	0.419	0.362	84	780	5349	1473	261	45	139	727

Jackie Robinson finishing a cut (below). He came to represent more than just the Integration Cause. He represented the offensive power of the Dodgers.

(Originally published by *Look Magazine*, 1954. Bob Sandberg, photographer.)

Branch Rickey: Before he was the Mahatma, he was just a very mediocre catcher with a law degree. But what he learned, in both fields, defined baseball over the next century. (Library of Congress)



1950 appears as a defining year (**above**), reflecting the redefinition of the strike zone to the delight of no one. (Because no team produced an OBP higher than .366 after 1950 due to walks not increasing. But home runs totals in the era increased.) The Brooklyn Dodgers replaced the usually lethal Yankees as the top slugging offense. The Dodgers made good use of their prowess in winning their

only World Series title in 1955. But every postseason for Brooklyn presented well-known obstacles: the Giants or the Yankees.

Detroit in 1950 had the likes of RF Vic Wertz (of Mays fame), 3B George Kell, LF Hoot Evers, and CF Johnny Groth racking up .300 hitting seasons with ex-Yankees 2B Gerry Priddy and SS Johnny Lipon turning in their best seasons at the bat and in the field. (Priddy/Lipon led the league in double plays turned.)

Top 5 Hitting Teams: Slugging/On-base Percentages in the *LBJ Era*

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
LBJ	1977	Boston Red Sox	0.465	0.345	97	859	5510	1551	258	56	213	528
LBJ	1977	Philadelphia Phillies	0.448	0.346	101	847	5546	1548	266	56	186	573
LBJ	1977	Chicago White Sox	0.444	0.344	90	844	5633	1568	254	52	192	559
LBJ	1977	New York Yankees	0.444	0.344	100	831	5605	1576	267	47	184	533
LBJ	1965	Cincinnati Reds	0.439	0.339	89	825	5658	1544	268	61	183	538

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
LBJ	1976	Cincinnati Reds	0.424	0.357	102	857	5702	1599	271	63	141	681
LBJ	1975	Cincinnati Reds	0.401	0.353	108	840	5581	1515	278	37	124	691
LBJ	1970	San Francisco Giants	0.409	0.351	86	831	5578	1460	257	35	165	729
LBJ	1977	Minnesota Twins	0.417	0.348	84	867	5639	1588	273	60	123	563
LBJ	1971	Baltimore Orioles	0.398	0.347	101	742	5303	1382	207	25	158	672

1977, the year Rawlings took over sole manufacturing of the baseball, as the offense hit a mid-term peaked; none eclipsed the 900-run plateau. Since the strike zone expansion in 1963, and the readjustment back in 1969, the ownerships and ballplayers searched for various ways to increase scoring, thus the DH was added in 1973 to the American League. Long considered the more explosive league, until racial integration took firm hold first in the National League during the 1950s, while the AL did not leap ahead under Yankee reign.

The Big Red Machine had the cogs for on-base average. With Joe Morgan and Pete Rose as table setters, and Johnny Bench and Tony Perez driving them home, their offense was finely tuned for this era – winning back-to-back World Series.

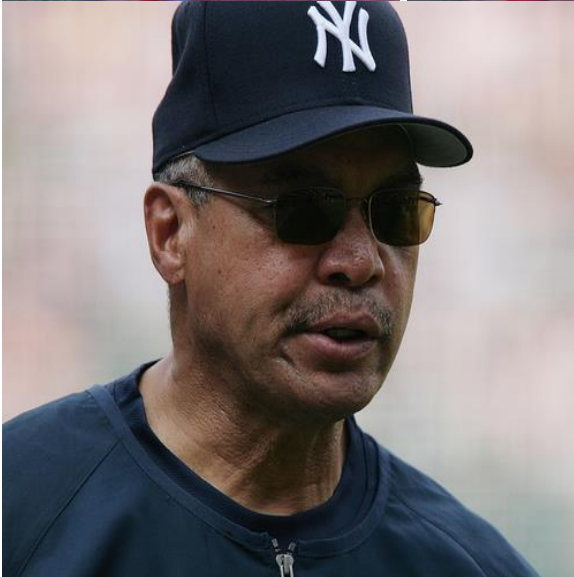
In 1977, all four slugging powerhouses won 90 games at the beginning of *The Bronx Zoo* – as the Yankees returned to World Series glory in 1977 and 1978. Reggie Jackson, lavished in Steinbrenner’s gold, setting a new trend for the “adding a hired gun” to secure World Series titles for an already talented team. (And earned the golden moniker *Mr. October* as well.)

2B **Joe Morgan** (left, below) – NL MVP in 1975 and 1976. More recently: Commentator for *ESPN*. (Courtesy of John VanderHaagen)

Catcher **Johnny Bench** (right, below) controlled the base paths and the batters' box for the Reds in 17 seasons. (Courtesy of John VanderHaagen)

Pete Rose (far right): As a rookie. Charlie Hustle was just starting out on his lifetime records of hits, games played, and 44-game hit streak in the National League. Now: Disavowed by Major League Baseball and the Hall of Fame.

Reggie Jackson (far left): Became a coach for the Bombers. He was instrumental to the resurrection of the Yankees in the 1970s. He recently co-authored *Sixty Feet, Six Inches* with HOF pitcher Bob Gibson. (Keith Allison)



Top 5 Hitting Teams: Slugging/On-base Percentages in *Reagan Era*

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Reagan	1979	Boston Red Sox	0.456	0.344	91	841	5538	1567	310	34	194	512
Reagan	1982	Milwaukee Brewers	0.455	0.335	95	891	5733	1599	277	41	216	484
Reagan	1987	Detroit Tigers	0.451	0.349	98	896	5649	1535	274	32	225	653
Reagan	1980	Milwaukee Brewers	0.448	0.329	86	811	5653	1555	298	36	203	455
Reagan	1979	Milwaukee Brewers	0.448	0.345	95	807	5536	1552	291	41	185	549

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Reagan	1988	Boston Red Sox	0.420	0.357	89	813	5545	1569	310	39	124	623
Reagan	1987	Boston Red Sox	0.430	0.352	78	842	5586	1554	273	26	174	606
Reagan	1989	Boston Red Sox	0.403	0.351	83	774	5666	1571	326	30	108	643
Reagan	1979	California Angels	0.429	0.351	88	866	5550	1563	242	43	164	589
Reagan	1980	Cleveland Indians	0.381	0.350	79	738	5470	1517	221	40	89	617

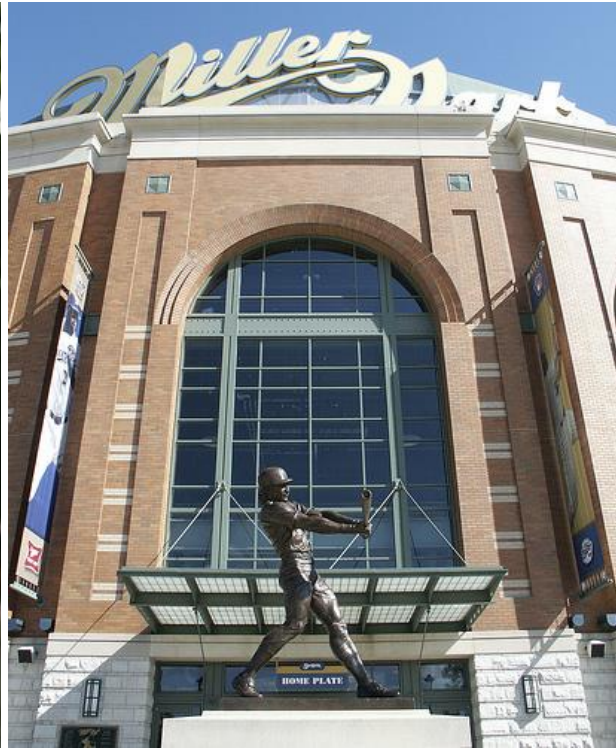
The Red Sox prove that they can get on base with regularity long after Ted. The year Da Sox see the World Series (1986) happened to be not a particularly good season for reaching base, as a team. Boston 3B Wade Boggs was the best OBP player in the Red Sox lineup from 1983-1989, eating chicken daily.

Slugging the ball appeared the better way to reach the 90-win plateau (without discussing pitching), as Harvey's Wallbangers in Milwaukee take on the fleet afoot, White Rat-led St. Louis Cardinals in an exciting 7-game, 1982 World Series. (Manager Whitey Herzog a.k.a. the White Rat found the cheese.)

Milwaukee's stout slugging lineup of SS Robin Yount, 2B Paul Molitor, CF Gorman Thomas, LF Ben Oglivie, 1B Cecil Cooper, and C Ted Simmons met the power-poor Cardinals, with acrobatic Ozzie Smith and gold glove ace Keith Hernandez anchoring their infield, Lonnie Smith stealing 68 bases, and split-fingering Bruce Sutter closing out games. *Whitey Ball* won out.

The 1987 Detroit Tigers win 98 games; have the statistically superior team to the upstart, 85-win Minnesota Twins, who were outscored 806-786 in the regular season. Sparky Anderson's Tigers, with the experience of winning the 1984 World Series, should win, on paper. But Minnesota's crafty pitching staff of Bert Blyleven and Frank Viola, and young dynamos Kirby Puckett, Kent Hrbek, and Gary Gaetti, propelled the Twins over Detroit, 4-1 in the ALCS. They win in an exciting 7-game series against the speedy Cardinals.

Mediocrity won out.



3B Paul Molitor led the American League in scoring (**136**) while swiping 41 bases and batting .302 in 1982 for the Brewers. Molitor *hit* .355 in the World Series, all singles. He was inducted in the Hall of Fame in 2004. (Paul Morse, *White House photo*)

SS Robin Yount led the American League in Slugging (.578), scored 129 runs and batted .331 in 1982. Yount hit .414 in the 1982 World Series. He was inducted into the Hall of Fame in 1999; his bronzed likeness is outside of Milwaukee's Miller Park. (Courtesy of Matt Schilder)

Top 5 Hitting Teams: Slugging/On-base Percentages in *Clinton Era*

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Clinton	2003	Boston Red Sox	0.491	0.360	95	961	5769	1667	371	40	238	620
Clinton	1997	Seattle Mariners	0.485	0.355	90	925	5614	1574	312	21	264	626
Clinton	1994	Cleveland Indians	0.484	0.351	66*	679	4022	1165	240	20	167	382
Clinton	1996	Seattle Mariners	0.484	0.366	85	993	5668	1625	343	19	245	670
Clinton	2001	Colorado Rockies	0.483	0.354	73	923	5690	1663	324	61	213	511

Era	Year	Team	SLG	OBP	W	R	AB	H	2B	3B	HR	BB
Clinton	1994	New York Yankees	0.462	0.374	70*	670	3986	1155	238	16	139	530
Clinton	1999	Cleveland Indians	0.467	0.373	97	1009	5634	1629	309	32	209	743
Clinton	1996	Cleveland Indians	0.475	0.369	99	952	5681	1665	335	23	218	671
Clinton	2000	Cleveland Indians	0.470	0.367	90	950	5683	1639	310	30	221	685
Clinton	1994	Chicago White Sox	0.444	0.366	67	633	3942	1133	175	39	121	497

Repeat Offenders?

The 2003 Boston Red Sox surpassed the record for highest slugging percentage in MLB history, breaking the 1927 Yankees record. They lost another heartbreaking 7-game ALCS to the Yankees, on a home run coming from a .254 hitter, 3B Aaron Boone, reminiscent of light-hitting SS Bucky Dent in 1978. (Ray Boone, Aaron's grandfather, was a long-time Red Sox scout who scouted out Curt Schilling. Ray was traded for Tito Francona, father of Terry Francona, the 2-time World Series championship manager of the Sox (Shaughnessy 2005, 10).) Next season: Hollywood green lights *Fever Pitch* and the Sox make it a true story.



The Aqua Marine Machine: The 1996-97 Mariners family roots sprang from the 1970s Cincinnati dominating offenses. CF Ken Griffey, Jr. led the team with 49 and 56 dingers with 140 RBIs both years. RF Jay Buhner: Averaged 42 home runs and 123 RBIs. A young SS, Alex Rodriguez, pitched in only 36 home runs in 1996 while scoring 141 runs and banging in 123 RBIs. 1B Paul Sorrento: 27 HR and 88 RBI norm in a season. Catcher Dan Wilson posts a respectable 15 jacks and 75 RBIs. DH Edgar Martinez wore out pitchers: .328 average, 27 yard ropes, and 105 RBIs. But for all the runs, and behind-the-scenes drama, the Mariners shipwrecked short of their ultimate prize. Left: **Ichiro Suzuki** hitting a rope. Brought in after this heyday of Seattle offenses, Ichiro showed everyone that foreign players are effective. He hit .350 with 242 hits in his 'rookie' year, never to let up. No Seattle team has made the World Series. (Photo Courtesy: Keith Allison)

The Tomahawking Tribe: The Cleveland Indians consistently pounded the ball; reached base at excellent levels; but saw the Yankees from 1996-2000, win 4 World Series. Not surprisingly, the Yankees are on the list during this period of greatness. (In 1994: the strike interrupted a Yankee run to the title with Cleveland in hot pursuit.) Roberto Alomar hit 20 home runs, 40 doubles, walked 80 times and stole 30 bases from 1999 to 2001, becoming the prototype second sacker of the 21st century. Alberte Belle, not a poster child for good behavior, hit 98 home runs in 1995-96, with and without the cork. He put 23 stolen bases in

the books in 1993. Guys like Jim Thome and Manny Ramirez – pulverized over 500 home runs in their careers – played for the Tribe at *The Jake*.

The 2001 Colorado Rockies reflect slugging does not win even half the games, without pitching. If a pitcher was unlucky enough, to land in Colorado, he would see his ERA jump like *Kriss Kross*. Colorado pretended they solved through the use of a humidior, once they got the settings for pre-game balls right. (See Appendix A: Team Statistics by Era; Top 100 Teams by WAR.)

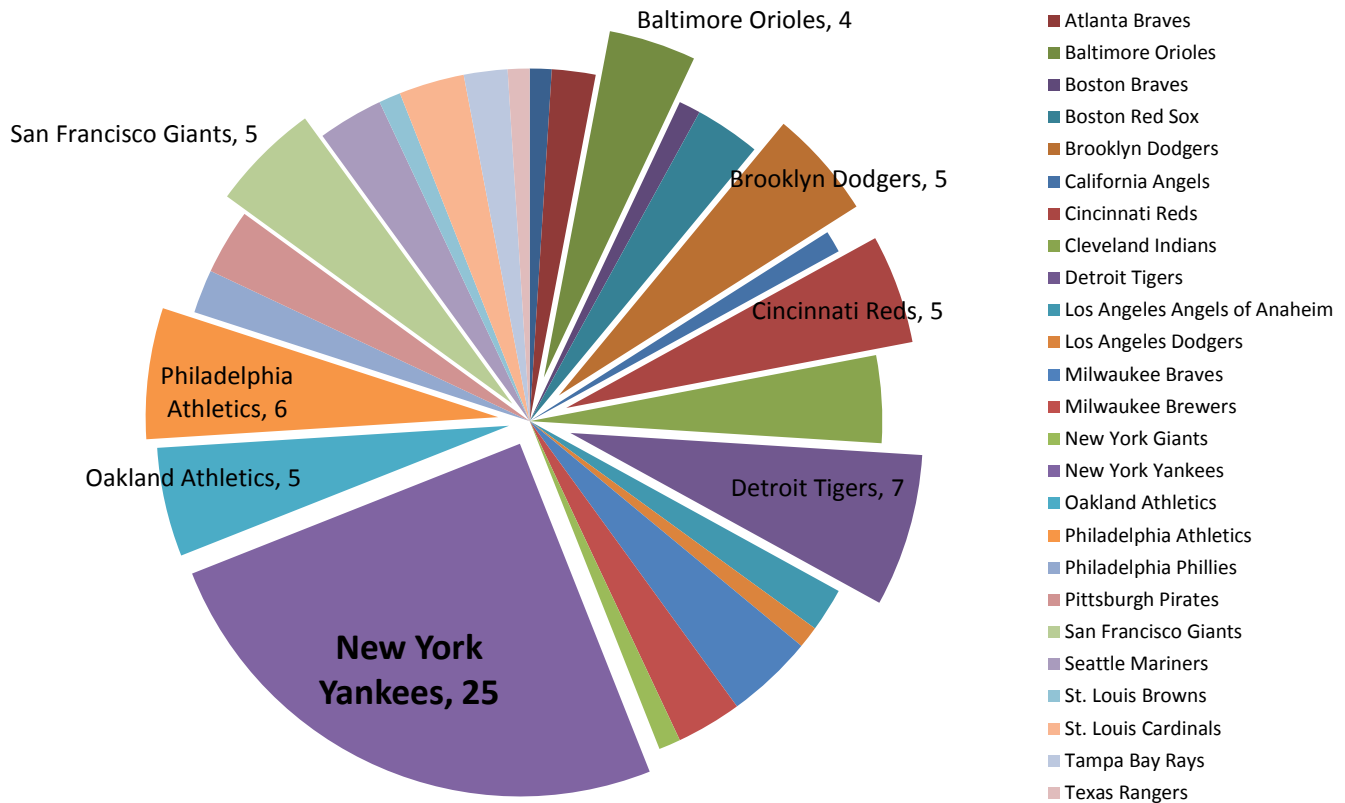


Jacobs Field: While Camden Yards gets the publicity as the most successful new retro park, the Jake played host to the best franchise resurrection in baseball history. Cleveland was a doormat for so long (40 years) that Hollywood made a very successful movie *about them*, and it came true...soon enough (if only a decade later.)(Courtesy of Paul M Walsh.)

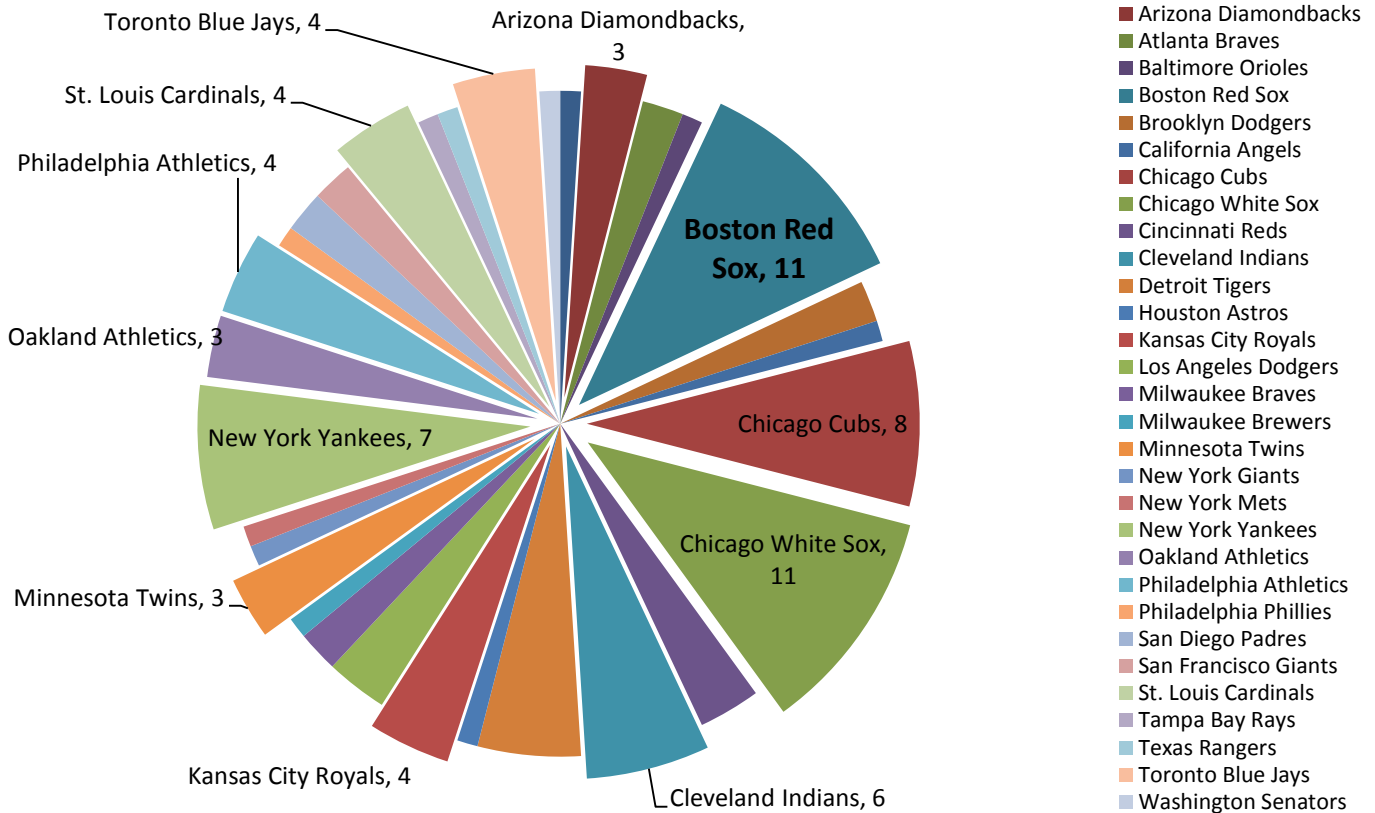
TOP 100 Offenses and Pitching Staffs by WAR Measurement

The charts below introduce the newest metric used to rate players in the game. WAR (wins above replacement) incorporates together on-base and slugging (wOBA), fielding prowess (TZR), positional effects, and playing time for offenses; and the various productive factors (IP, Runs) that make up the pitcher's game.

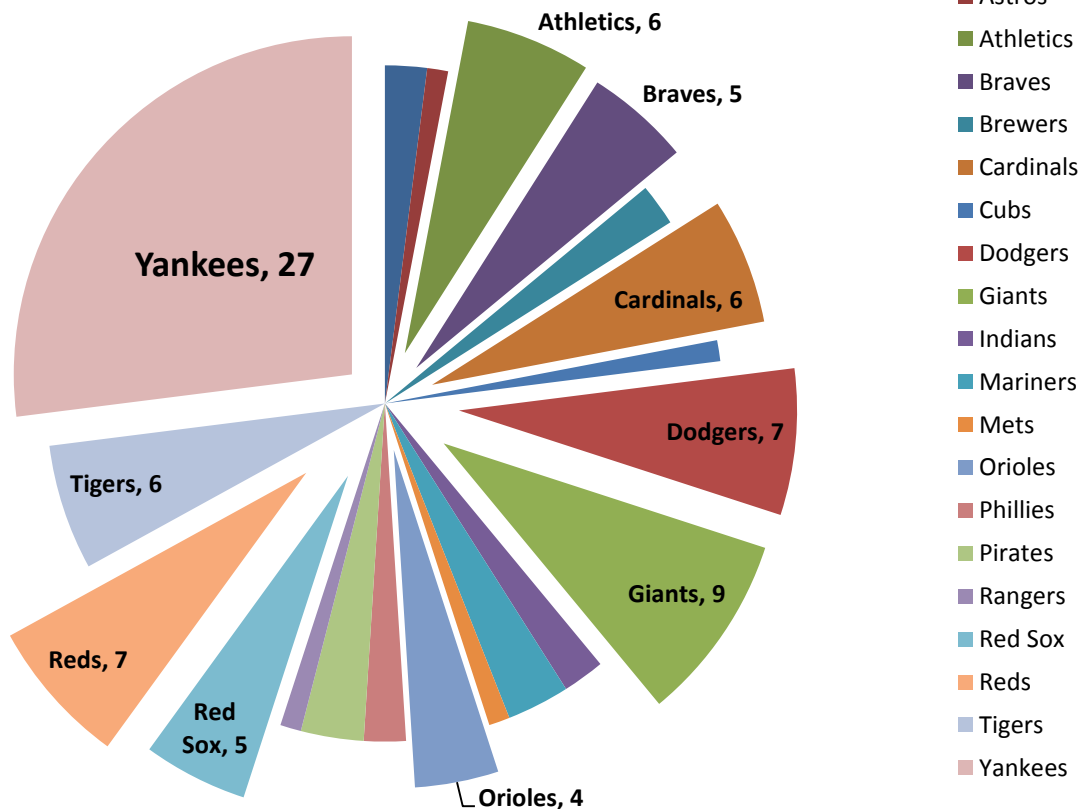
Top 100 Offenses : 1908-2013 (B-R WAR)



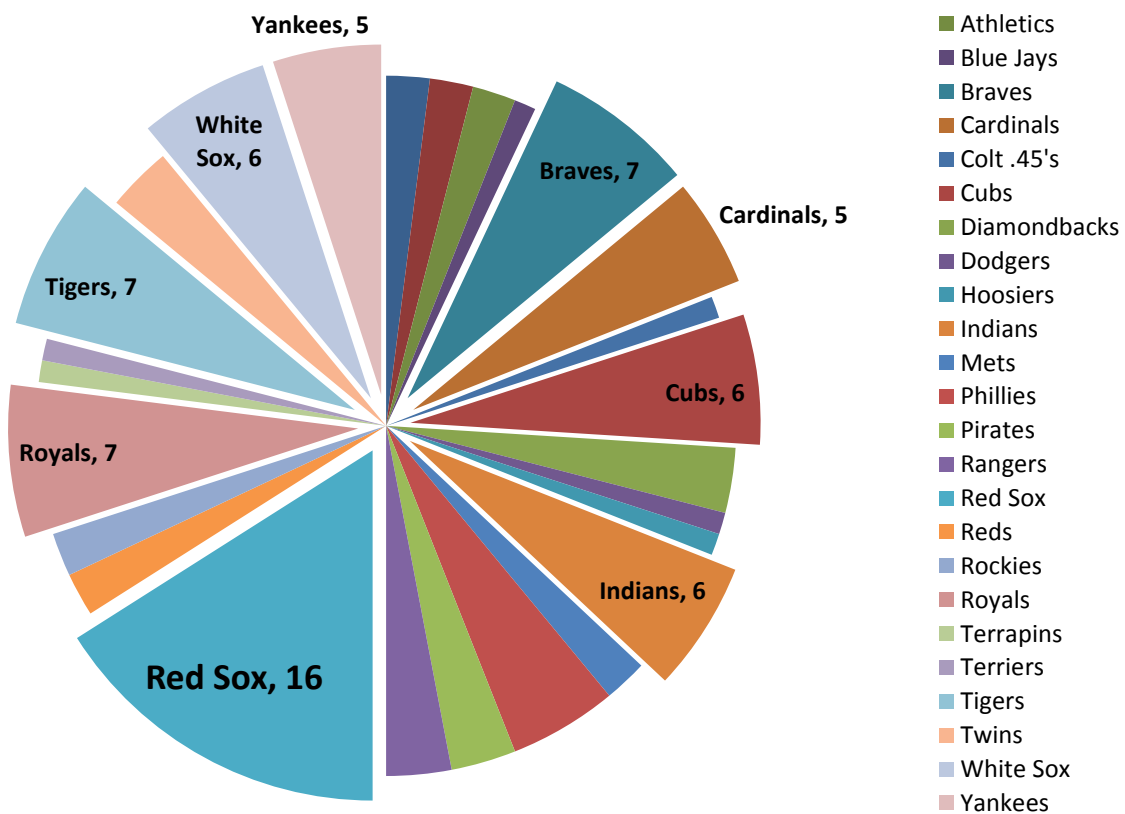
Top 100 Pitching Staffs: 1908-2013 (B-R WAR)



Top 100 Offenses: 1908-2013 (fWAR)



Top 100 Pitching Staffs: 1908-2013 (fWAR)



A Discussion of WAR: Which Measurement is the Best, Baseball Reference or Fangraphs?

The idea of WAR (Wins Above Replacement) in regards to ballplayer evaluation strikes analogous to an idea found, in concept, concerning military battles. A good general is considered worth many, many times the men he has under his charge. That one guy, the leader of the battle, can influence the fates of thousands in battle through their various actions or maneuvers to a level one grunt soldier cannot. At least, that is one theory had in battles. A better one is to never have the fights to begin with.

In baseball, one superstar is worth many times the average guys around him in actual fact. Whether by statistical analysis, or gut feel, this should make sense. One can remember "that one guy" carrying a team for two or three weeks with his bat alone. And in the great seasons had, the numbers of homers, runs scored and batted in*, one knows that one guy was awesome – and his teams were too, because of it. (*Batted in runners don't matter much – because if you put enough runners on in front *that guy* (ordinary or special), he's bound to drive in a fair amount of them.)

The problem came in figuring out exactly what that value truly is (a financial value, more and more) – or at least it was – until the 21st century dawned. Since then, numerous models and iterations of those models grew as social media has sprouted, dispersed knowledge widely, and yet, as Professors Benjamin Baumer and Andrew Zimbalist opined correctly, "the details of a statistic used by too many are known only to too few. (The Sabermetric Revolution: Assessing The Growth of Analytics in Baseball 2014, 73)."

As they further note, "there are three popular implementations (73)," of WAR. One is *Baseball-Reference (bWAR)*, a second at *Fangraphs (fWAR)*, and a third is (WARP) at *Baseball Prospectus*. Each have their vocal adherents – one suspects – and that drives to this current question: which one is better? For this brief discussion, only the first two were compared.

The first model, at *Baseball Reference (B-R)*, is comprised of six components for position players (Sports Reference, LLC. 2014). These are:

- Batting Runs
- Baserunning Runs
- Runs added or lost due to Grounding into Double Plays in DP situations
- Fielding Runs
- Positional Adjustment Runs
- Replacement level Runs (based on playing time)

The first concept, batting runs, produced this explanation at their popular website:

"For batting runs we use a linear weights system based on Tom Tango's wOBA (weighted on-base average) framework, but we add a

number of improvement[s] to our calculation of wRAA (weighted runs above average).

- Weights are based on the offense of a particular league season rather than all of major league baseball.
- Pitchers are excluded from the league wOBA calculation, so the run totals are not biased against players in seasons with DH's.
- We estimate CS totals for seasons in which we lack CS data
- From 2003 on, we differentiate between infield singles and outfield singles
- For all seasons, we differentiate between strikeouts and other outs. In early baseball, pre-1920 or so, this is especially vital because error rates were high and DP rates were low, so there was a lot of benefit to putting the ball in play.
- We include Reached on Errors for seasons that such data is available. For other years, we estimate the rate of ROE's and add that into our non-SO out values.
- Runs due to SB and CS are computed with wRAA, but we subtract them out from the batting total and add them into the baserunning total." (Position Player WAR Calculations and Details 2014)

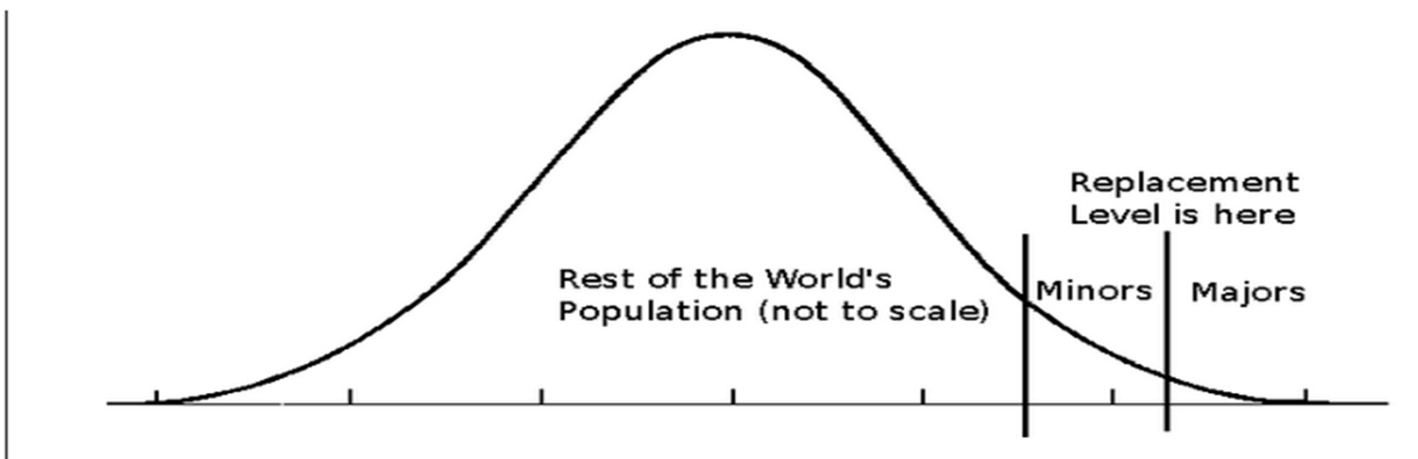
The website owners and creators, Sean Smith and Sean Forman, are usually credited with this formulation down to the finite details that require, "hundreds of steps to make this calculation, and dozens of places where reasonable people can disagree on the best way to implement a particular part of the framework. We have taken the utmost care and study at each step in the process, and believe all of our choices are well reasoned and defensible. But WAR is necessarily an approximation and will never be as precise or accurate as one would like (Baseball-Reference.com WAR Explained 2014)."

This intense calculation requires more than a basic familiarity with SQL language, database management of interlinking datasets, and a pretty vast knowledge of baseball history to implement "fuzzy logic" to adjust underlying values "reasonably" as described above. This creates their bWAR model for each league, each season, and each player: from one at-bat or pitch thrown to the iron man player that Gehrig and Ripken are.

As a result of the datasets – TZR (fielding pre-2003), *Baseball Info Solutions* (post-2003 licensed defensive statistics) and *Retrosheet* for accuracy across the spectrum – various releases, like software, have occurred. Their last one was release 2.2. – March 2013 – whereby a mutual agreement with *Fangraphs* led to, "we decided to drop the replacement level to .294 from .320. This means that 2013 MLB has 1000 WAR in the entire major leagues...A small amount of smoothing was done to transition between decade-long league-vs-league replacement levels (Sports Reference, LLC. 2014)."

Name	Previous B-R WAR, 1.0	FanGraphs WAR	Updated B-R WAR, 2.2
Abbreviation	rWAR (for Rally WAR, "RallyMonkey", Sean Smith created this version)	fWAR	rWAR, maybe bWAR?
Offensive Batting Metric Used	BaseRuns based offensive measure, so sum of players batting runs equals team total.	wRAA	wRAA with additional tweaks
Fielding #'s Used	Total Zone Ratings using PBP when possible.	TZR pre-2002, Ultimate Zone Rating 2002 and after	TZR pre-2003, Baseball Info Solutions Defensive Runs Saved with Batted Ball Timer 2003 and after
Starting Point for Pitching WAR	Runs Allowed	Fielding Independent Pitching	Runs Allowed
Batting Details			
Adjusted for park	Yes	5-year regressed park factors	3-year park factors
Park Factor Applied to Batter or League Average	Batter	Batter	Batter
Computes Batting Lg Avgs using entire MLB or individual leagues	Ind. Leagues	All of MLB	Ind. Leagues
Includes P's in Lg Avg	No	Yes	No
Includes ROE	Yes	No	Yes
Estimates CS for seasons it is unknown	Yes	No	Yes
Includes SB/CS in Batting or Baserunning	In Baserunning	In Batting	In Baserunning
Includes Positional Adjustments	Yes	Yes	Yes, across lgs always sum to 0
Varies Replacement Level by Lg's Quality of Competition	Yes	No	Yes
Caps total contribution by Replacement Level Runs to prevent overvaluing of leadoff hitters	Yes	No	No
Counts SO and non-SO outs separately	Yes	No	Yes
Directly uses the PythagPat WL% estimator to compute Wins Above Avg	No	No	Yes
Runs to win calculation includes the league run environment	Yes	Yes, but not described for batters	Yes
Runs to wins calculation includes the runs the player adds or subtracts	No	No	Yes
Differentiates between infield and outfield singles from 2003 on.	No	No	Yes
Adjusts for ability to avoid double plays	Yes	No	Yes
Adjusts for Non-basestealing baserunning	Yes	Yes	Yes
Available in a form with fielding metrics excluded	Yes, oWAR is WAR with defensive runs assumed to be zero or average	No	Yes, oWAR for offensive WAR

Name	Previous B-R WAR, 1.0	FanGraphs WAR	Updated B-R WAR, 2.2
Abbreviation	rWAR (for Rally WAR, "RallyMonkey", Sean Smith created this version)	fWAR	rWAR, maybe bWAR?
Fielding Details			
Uses measures for player range	Yes, TZR	Yes, UZR or TZR	Yes, DRS or TZR
Uses measures for OF arms and DP ability	Yes	Yes	Yes
Uses measures for catcher throwing	Yes	Yes, DRS	Yes, DRS
Uses measures for good plays and misplays like relay throws or missing the cutoff man	No	No	Yes, DRS
Uses measures for catcher defense including blocking pitches and framing	No	Yes on blocking, but no on framing	Yes, DRS
Pitching Details			
Years Available	1871-present	1974-present	1871-present
Uses Park Factors	Yes, 3-year	Yes, 5-year, regressed	Yes, 3-year
Adjusts Park Factors to parks actually pitched in	No	No	Yes
Park Factor applied to pitcher or run support?	Lg Avg Pitcher	Pitcher	Lg Avg Pitcher
Adjusts league average by teams pitched against	Yes	No	Yes
Adjusts league average for interleague play	No	No	Yes
Adjusts replacement level by quality of league	Yes	No	Yes
Recent replacement level	.320 (52-110)	.294 (48-114) (link)	.294 (48-114)
Directly uses the PythagPat WL% estimator to compute Wins Above Avg	No	No	Yes
Runs to win calculation includes the league run environment	Yes	Yes, but not described for batters	Yes
Runs to wins calculation includes the runs the player adds or subtracts	No	Yes	Yes
Adjusts runs to win calculation by length of pitcher's outings	No	Unclear, I believe no	Yes
Adjusts runs above replacement level for when pitcher is starter or reliever	Yes	Yes, as part of replacement level calculation	Yes, but it is applied to avg rather than replacement
Adjusts performance by team defense	Yes	Not applicable since FIP-based	Yes
Adjusts Reliever WAR by Leverage Index	Yes	Yes, I believe it is applied to the WAR value	Yes, Applied to WAA and then recentered to not affect league total WAA
Credits starting pitcher for effect on saving/taxing bullpen	No	No	No
From: http://www.baseball-reference.com/about/war_explained_comparison.shtml			



Talent is normally distributed; but at the end of the spectrum, seperated from all the rest, it characteristic of an exponential distribution.

[From: http://www.baseball-reference.com/about/war_explained.shtml](http://www.baseball-reference.com/about/war_explained.shtml)

Each system (charted above) has agreed to a basic level of replacement wins, .294 (47.66), which neatly calculated to 1000 wins to reach .500 records for 30 teams in 162-game seasons. Both *Fangraphs* and *Baseball-Reference* have made their downward adjustments going back to the beginning of the game for various league configurations and games played, thus the 1,000 wins are not a set constant. But even with the incongruity rectified, the professors in *The Sabermetric Revolution* noticed discrepancies, in particular, various calculations for David Wright, stating "there is general consensus that Wright was about a seven -win player in 2008, there is considerable disagreement over the components that comprise the estimate (Baumer and Zimbalist 2014, 74)."

As they enforced, "This state of affairs is frustrating to anyone trying to understand the true value of Wright's worth...the three systems speak to the difficulty of estimating this unknown quantity. In effect, we have three different models, operating on two different data sets, created by many people occasionally working together and occasionally in competition... (74)."

By now, one can imagine those with just "replacement level" intellect are pretty confused by these concepts too. The magic number – WAR – pops out of a pretty complex model; using mostly set numerical calculations ran through a battery of interconnected ideas; that are modified, again based on an individual feel to improve the results. As Tom Tango, co-author of *The Book: Playing the Percentages in Baseball*, and as close to a WAR modeling expert as they come, expressed these off-the-cuff thoughts on the recent syncing of Baseball Reference and Fangraphs:

"Sean switched from 'Theoretical Team' BaseRuns as the basis to just linear weights. In the former, you would compute team BaseRuns with a player, and then compute it without the player, and the difference is his impact. While undoubtedly a great way to do it, and possibly even the best way, it's not the easiest thing to program, adapt, or explain. Linear weights, which basically approximates this, is close enough, and is more flexible. You can really go either way here.

As an aside: Personally, I prefer ease and flexibility." (WAR Updated on Baseball Reference 2012)

Such individual flexibility obscures clarity to even a versed outsider (which this author does not proclaim to be). Nor did the professors – Ph.Ds. who discuss mathematics as their lot – think highly of the calculation's clarity: "While the idea behind WAR (modeling marginal physical product) is a good one, in our view the existing methodologies leave much to be desired. This is a shame, since the statistic appears to be easily understandable, which has enabled it to permeate the mainstream media (Baumer and Zimbalist 2014, 73)." As WAR became mainstream, it has become a point of contention from anyone using it to make "baseball

arguments.” WAR is producing conflict – as any new statistic generally employed does.

What is more at the heart are how “the guts (measurements)” are included, in what ratios (as pitching and batting are allotted various percentages (41-59% or 43-57%)) based off analysis. *Fangraphs*, for example, uses FIP ERA (discussed later in this book) to calculate pitching contributions; *Baseball Reference* goes strictly off a runs-allowed model adjusting for park factors, role (starter/reliever/leverage), team defense (Fangraphs.com 2010).

Fangraphs further explains its reasoning for the difference:

- FIP strips away the influences of team defense, focusing solely how variables that a pitcher has control over.
- FIP also involves considerably less regression than other ERA Estimators like SIERA and xFIP, making it a better measure of *value added*. While SIERA and xFIP estimate a player’s *hypothetical* home run and BABIP rates based on different criteria, FIP uses a player’s *actual* home run rate in its calculations.
- These factors make FIP a good middle-ground option. It strips away the impacts of defense and measures a pitcher’s skill, but it doesn’t merely regress away abnormal results. If a pitcher *should* have allowed 20 home runs (based on his regressed home run rate) but actually gave up 30 home runs, he was a less valuable pitcher to his team than a stat like SIERA or xFIP would have you believe. Those two stats are better at predicting the future, but FIP is better at capturing past value. (WAR for Pitchers 2010)

These contrasts go deeper than can be summarize without access to proprietary data and calculation methods. The gist is that both sites are making good decisions defensible by their background/expertise, familiarity with coding and analysis, lack of bias, and connections to the game. The third, bias, is the most difficult to defend against, as one makes decisions on how to model, they introduce their judgments, good or otherwise. With revisions and updates – while seemingly better – they are not always done without consequences. A table below reflects the individual changes created by the alteration of base formulas and recalculating of prior baseball history.

And now too, a number of homegrown methods, Excel or SQL-based (<http://wahoosonfirst.com/war-calculator/the-calculators/version-2-1/>) can be found online. These are generated with methodologies somewhat similar to these popular outlets for all things baseball, but without either exact wrinkles, or just an incomplete picture – mainly focused on the hitters’ side. (*Fangraphs* and *Baseball Reference* generally are more respected than their billion dollar brethren, *ESPN*, especially in the broadly termed, “analytical field of baseball.” Though that perspective is an ever changeable concept.)

Top 20 hitters before and then after

rk	name_common	WAR_old	name_common	WAR
1	Babe Ruth	172.0	Babe Ruth	159.2
2	Barry Bonds	171.8	Barry Bonds	158.0
3	Ty Cobb	159.4	Willie Mays	150.8
4	Willie Mays	154.7	Ty Cobb	144.9
5	Hank Aaron	141.6	Hank Aaron	137.3
6	Honus Wagner	134.5	Tris Speaker	127.8
7	Tris Speaker	133.0	Honus Wagner	126.2
8	Stan Musial	127.8	Rogers Hornsby	124.6
9	Rogers Hornsby	127.8	Stan Musial	123.4
10	Eddie Collins	126.7	Ted Williams	119.8
11	Ted Williams	125.3	Eddie Collins	118.5
12	Mickey Mantle	120.2	Alex Rodriguez	111.1
13	Lou Gehrig	118.4	Lou Gehrig	108.5
14	Rickey Henderson	113.1	Rickey Henderson	106.8
15	Mel Ott	109.3	Mickey Mantle	105.5
16	Mike Schmidt	108.3	Mel Ott	104.0
17	Frank Robinson	107.4	Mike Schmidt	103.0
18	Alex Rodriguez	104.6	Nap Lajoie	102.2
19	Nap Lajoie	104.2	Frank Robinson	100.9
20	Joe Morgan	103.5	Joe Morgan	97.1

(Changes to bWAR shuffled rankings after Ruth and Bonds with Frank Robinson and Mickey Mantle taking big hits. (Sports Reference, LLC. 2014))

This is good for innovation, but, lacking again for understanding, as Baumer and Zimbalist offered these functional suggestions:

“What is needed at a minimum, in our view, to solidify the presence of WAR as a meaningful quantity worthy of discussion and comparison, is a fully open-source implementation of Wins Above Replacement (Baumer and Zimbalist 2014, 77).” Their suggestions included: clear description of methods; mathematical notation; a handy guide to arbitrary constants; open data set; and the source code for the “guts” of the WAR system.

Tom Tango reflected more positively on the ongoing cooperation in the two models, “With Sean [Smith] at Baseball-Reference and David [Cameron] at Fangraphs as stewards of advanced metrics, as well as having fantastically designed websites, sabermetrics has never been in a better shape to having its message put out in such an open and honest manner (WAR Updated on Baseball Reference 2012).”

What this all-star group of high-performing intellects is saying, while at cross purposes to each other – with their fascinations for baseball statistical combinations – is a need for better bridging of data gaps. To rectify and unify the WAR message; to output particulars of the design; and to correlate that well and operate on the same data patient with the same procedures in place. It probably goes without saying, this makes too much sense. But it would be boring to the one crowd to have such consistency for the other groups’ exacting desires for ease of use and analytics. And writers in the middle will seem annoying to both sides.

But this leads to the disposition as to the merits of either system. Given the changes, which one is better than the other?

A Limited Study. This focused on the 1998-2013 seasons where 162 games were played, 30 teams existed, and both systems are relatively consistent in their calculation (defensive metrics changed post-2002.)

A Brief Purpose. Was how well both methods (data downloaded in May 2014 – *Baseball Reference*; July 2014 – *Fangraphs*) measured up in actual team wins; and then which one was better, or closer, to predicting a teams’ actual number of wins (Replacement levels (y-intercept) + WAR totaled (x-value)) in a the regressions.

The Results. The regression results for both WAR models are:

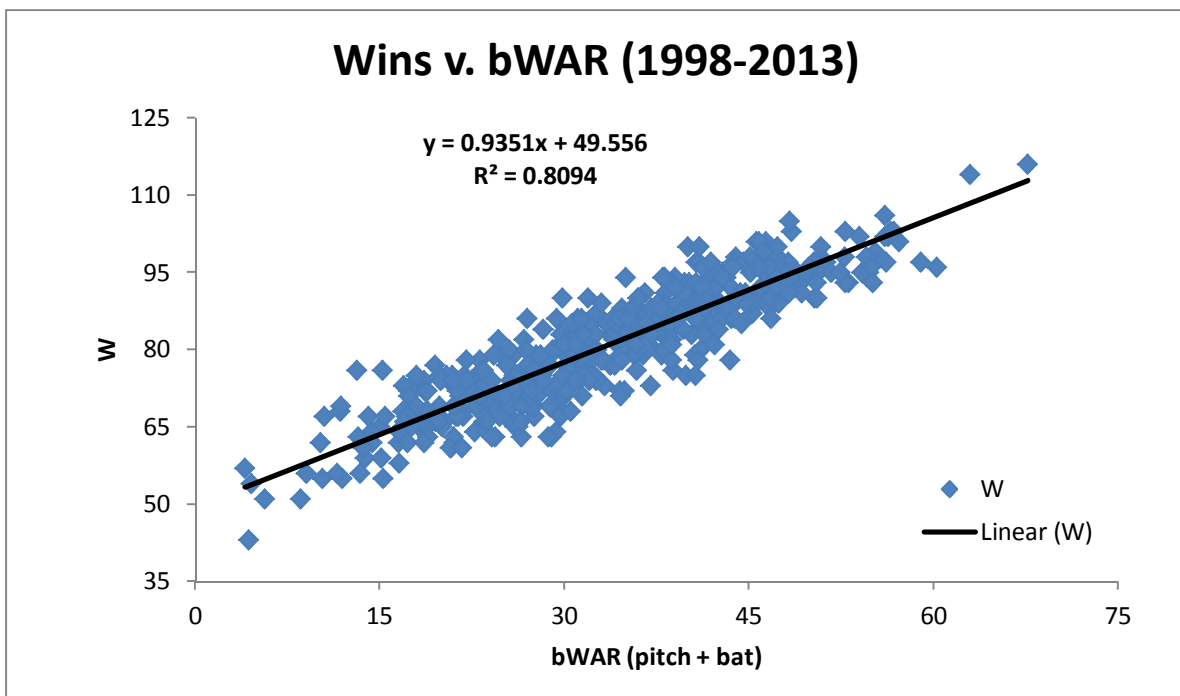
bWAR (Baseball Reference)

<i>Regression Statistics</i>								
Multiple R	90.0%							
R Square	80.9%							
Adjusted R Square	80.9%							
Standard Error	5.15							
Observations	480							
ANOVA								
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	53788.6	53788.6	2030.0	3.6E-174			
Residual	478	12665.8	26.5					
Total	479	66454.4						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	
Intercept	49.56	0.74	67.36	3.9E-246	48.11	51.00	48.11	
Team WAR	0.94	0.02	45.05	3.6E-174	0.89	0.98	0.89	

fWAR (Fangraphs)

<i>Regression Statistics</i>								
Multiple R	88.7%							
R Square	78.6%							
Adjusted R Square	78.6%							
Standard Error	5.45							
Observations	480							
ANOVA								
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	52256.9	52256.9	1759.4	2.6E-162			
Residual	478	14197.5	29.7					
Total	479	66454.4						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	
Intercept	48.77	0.81	60.5	4.8E-226	47.2	50.4	47.2	
Total WAR	0.97	0.02	41.9	2.6E-162	0.9	1.0	0.9	

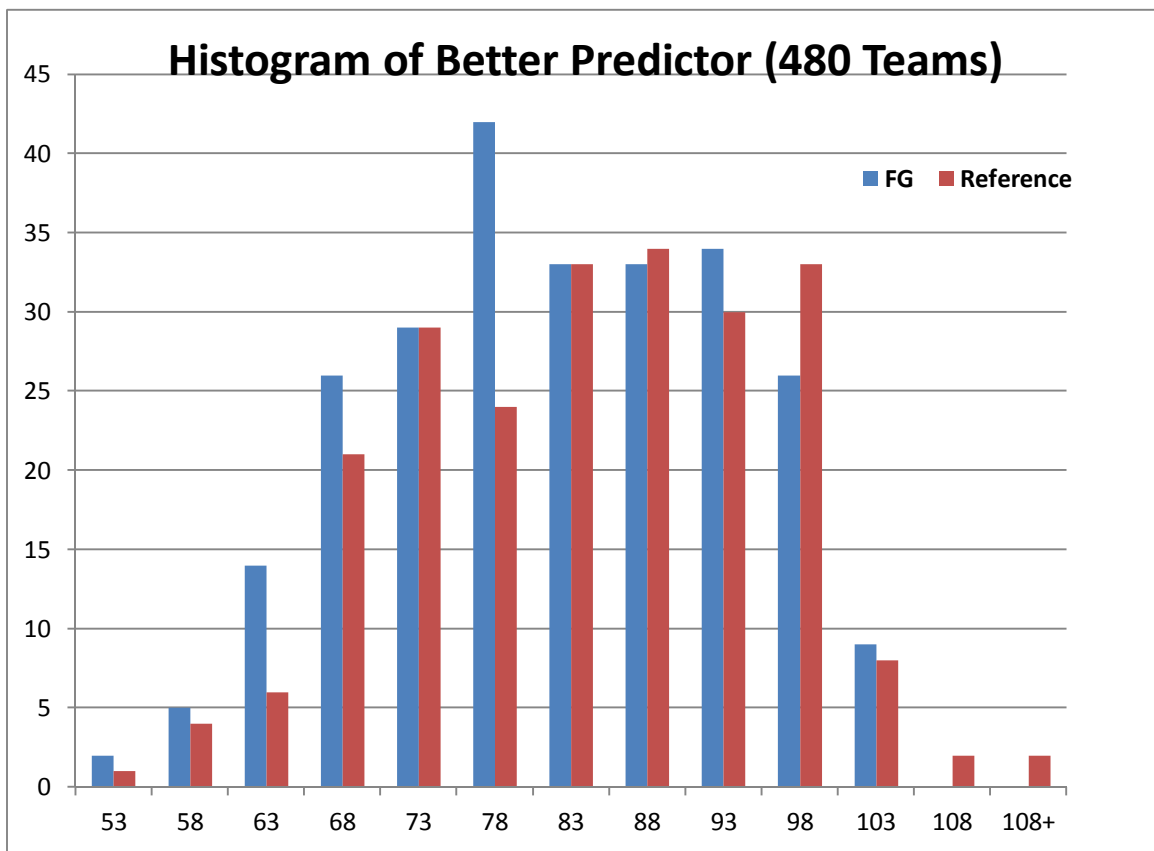
Baseball Reference versus Fangraphs. From analysis, the R-squared and standard error are in *Baseball Reference's* favor (higher R², lower error). The best fit regression line crosses at a y-intercept (replacement level) of 49.6 wins for Reference; 48.8 for Fangraphs in regards to predicting Win outcomes for the 480 teams in the study. The slopes are both nearly one (.94 to .97) reflecting one reason why replacement level is not 47.6 wins. With the measured lower and upper confidence intervals at 95%, the magic replacement level is within the intercept parameter, but with a lesser slope value. The standard error on the slope (y/x) is less on the (B-R) model. From these alone, it would be easy to declare Reference's WAR values a better predictor of a teams' wins. However, that is not the whole story.



Fangraph's numbers are too close to B-R's, with their improved model as of March 2013, to decide a winner. In looking into the absolute differentials between each, in prediction, the results were less convincing, and introduced a need for different analyses. (Table Below: A sample.)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Slope		Wins Best Predict	
Season	Team	WAR_off	WAR_def	hit_WAR	pitch_WAR	Team_brWAR	Hit WAR-FG	P WAR-FG	Team-FG WAR	Predict B-R Wins	Predict FG Wins	Team Wins	Better Predict?
1998	ANA	18.3	-6.6	12.2	26.1	38.3	8.2	16.4	24.6	87.8	73.4	85	Reference
1998	ARI	9.1	0.9	10.1	4.9	15.0	10.4	8.8	19.2	64.6	68.0	65	Reference
1998	ATL	29.6	7.7	37.4	18.7	56.1	37.6	25.9	63.5	105.6	112.3	106	Reference
1998	BAL	26.1	-1.2	25.2	15.3	40.6	24.9	15.5	40.4	90.1	89.2	79	FG

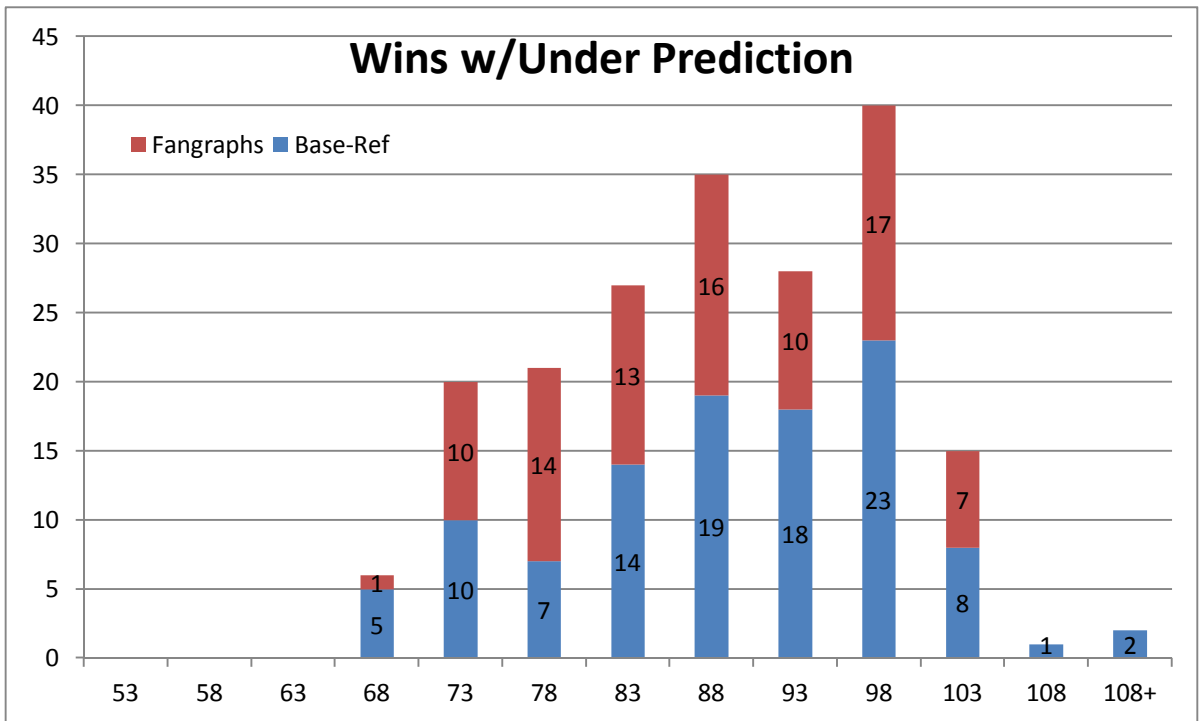
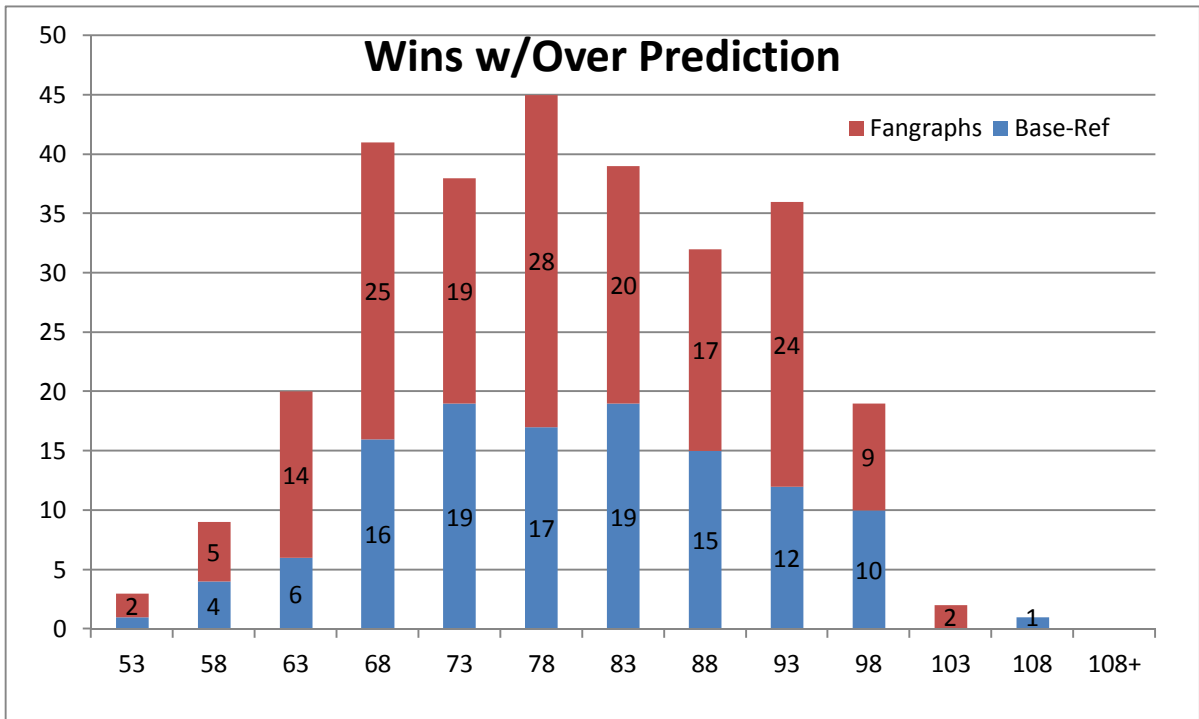
When this dataset is compared, team by team, *Fangraphs'* won out in 52.7% of the cases (253), while B-R garnered 227 victories. How they get to WAR widely varies for each part, and win grouping – the hitting and pitching – suggesting skewing in calculations based on wins a team “earns.” At either end, below 58 wins, or above 103 wins, teams operate at the reaches of a normal distribution for wins. These models will not work out as well in predicting the wins of the team at the ends. Even in the middle, near .500 teams vary enough; as what should be an 85-win team can to produce a 76-win team, and vice versa. With such random outcomes, luck (or exploiting a short-term market inefficiency), tends to regress to a normal range in the next year for that particular team.



Given a certain number of wins (less), each model had their predictive preferences. *Fangraphs* seems adapted well for teams that are below 78 victories; whereas, Baseball-Reference was better with the elite teams above 98 victories, in general. At 79-83 wins, .500, they tied up; a good sign.

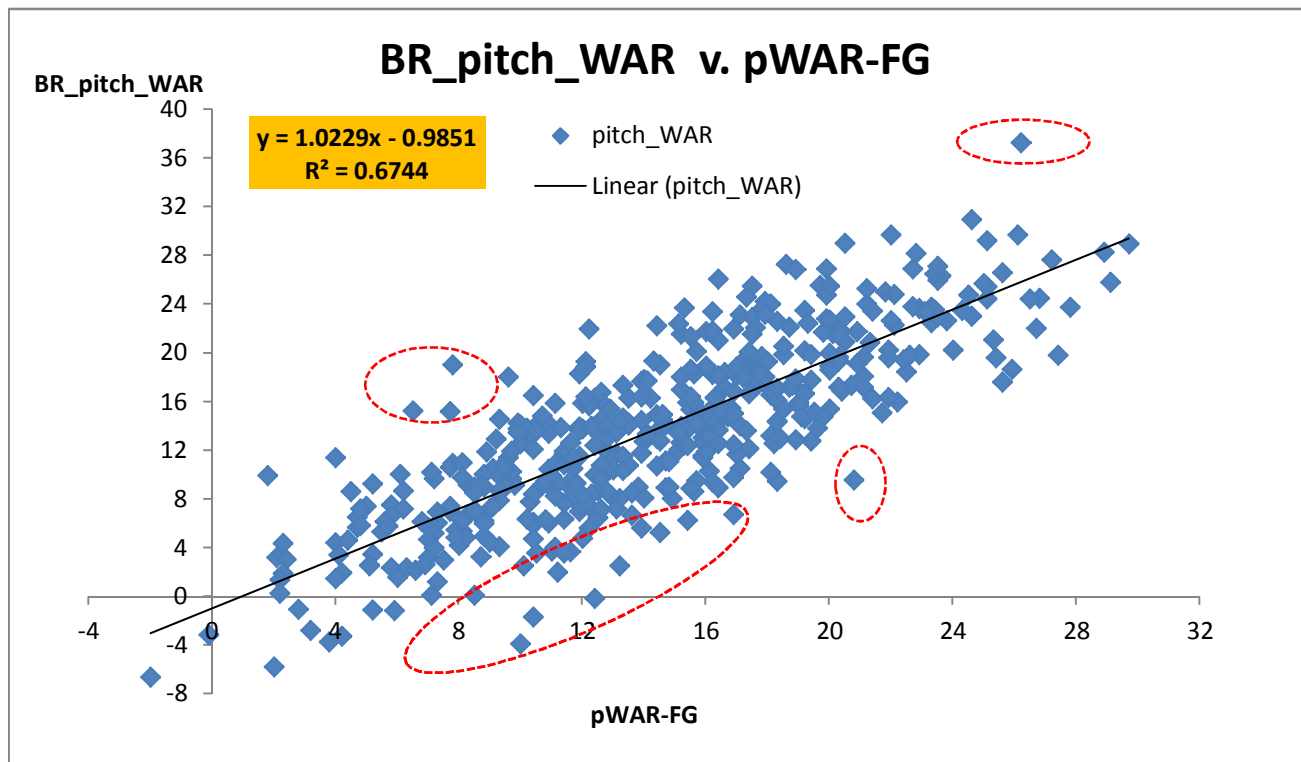
It would take another study to examine in detail the underlying predictive biases for each pairing; or the reasons for the wide discrepancies in their pitch or hit results – as the data set tabulated reflected. The first point here is to show – there are definite differences that Baumer and Zimbalist were not keen on seeing. And so, the WAR is not won quite yet.

Two more charts below reflect a breakdown of the nature of the wins by each model. B-R leans to overestimation; Fangraphs underestimates.



Neither under-predicted team wins below the 68 victories threshold, reflecting that it is hard to be that bad and to project that outcome in concert.

But this reflects too more skewing of the data. Neither model is without “imperfections” (being kind to the work). If one were to use them, for either assessing players or teams, one would acknowledge, on the whole, Fangraphs is conservative and middle-grounded around its FIP ERA estimator, while Baseball Reference would portray better, elite teams, but with an win or two above their actual results. The disparity comes full view when comparing apples to apples, either hitters or pitchers’ contributions:



The circles (roughly) denote where diverging values occur of 8 or more wins for the pitching component, from Fangraphs (x-axis value) versus B-R listed on the y-axis. This regression between the two measurement systems is good, but not superior. They are measuring the same apples, teams with their players, but with divergent methods: the underlying components to achieve a WAR total for that side of the game turns on their treatments of runs. B-R tends to treat runs allowed by pitchers as a whole idea: with adjustments based on parks, a pitcher’s usage, and “team defense (Fangraphs.com 2010).” *Fangraphs* models off the FIP ERA formulation with the stated intent to “strip away the influences of team defense.” The standard error for this model was 4 wins.

Meanwhile, the overall hitting side of WAR returned an R^2 of 82.7%; standard error of 3.4 wins. The R-squared difference of about 15% aggregates team defense up to that level, one should believe. But the “defense” variable is included on the hitter’s side, the players’ combined contributions to winning, separate from a pitcher’s WAR.

Below are two tables showing the largest differentials for either offense or pitching. The Jays, Rangers, Angels, Red Sox, Mariners, Cubs, Twins, and Brewers, were repeatedly on these lists for extreme differentials.

Extreme Offense Differentials Baseball Reference v. Fangraphs

Season	Team	Offense Diff	Pitch Diff	BR-Pred Diff	FG-Pred Diff	Better Predict?	Predict B-R Wins	Predict FG Wins	Team Wins
2009	TOR	11.28	6.63	15.2	9.77	FG	90.2	84.8	75
2012	TOR	10.52	1.41	5.76	-4.13	FG	78.8	68.9	73
2009	ANA	9.53	9.18	-3.7	-4.83	Reference	93.3	92.2	97
2007	TOR	9.52	3.36	7.91	0.97	FG	90.9	84.0	83
2005	NY Yankees	9.11	5.06	2.92	-12.03	Reference	97.9	83.0	95
2008	CHC	9.01	8.49	2.83	2.57	FG	99.8	99.6	97
2004	KCR	8.98	6.92	8.11	5.27	FG	66.1	63.3	58
2002	BOS	8.61	7.63	9.63	7.87	FG	102.6	100.9	93
2007	OAK	8.49	7.93	9.41	8.07	FG	85.4	84.1	76
2010	BOS	8.43	5.04	7.94	3.77	FG	96.9	92.8	89
2002	ANA	8.16	0.58	5.79	-3.73	FG	104.8	95.3	99
2004	SFG	8.12	4.15	-4.92	-1.73	FG	86.1	89.3	91
2012	MIN	8.11	6.32	7.24	4.67	FG	73.2	70.7	66
2008	SEA	7.99	5.45	9.29	5.97	FG	70.3	67.0	61

Extreme Pitching Differentials Baseball Reference v. Fangraphs

Season	Team	Offense Diff	Pitch Diff	BR-Pred Diff	FG-Pred Diff	Better Predict?	Predict B-R Wins	Predict FG Wins	Team Wins
2008	TEX	6.59	13.93	-1.39	5.17	Reference	77.6	84.2	79
2003	TEX	4.63	12.57	3.21	10.37	Reference	74.2	81.4	71
2010	MIL	0.52	12.12	-2.15	8.67	Reference	74.9	85.7	77
1998	TEX	4.66	11.26	3.35	9.17	Reference	91.4	97.2	88
1999	SEA	0.92	11.22	6.95	-4.13	FG	86.0	74.9	79
2011	PHI	3.51	11.05	1.49	-6.83	Reference	103.5	95.2	102
2003	COL	2.6	10.69	-1.94	5.37	Reference	72.1	79.4	74
2012	MIL	2.09	10.2	-1.94	9.57	Reference	81.1	92.6	83
1998	NY Yankees	3.46	9.74	-2.47	-9.53	Reference	85.5	78.5	88
1998	ANA	3.99	9.66	2.8	-11.63	Reference	87.8	73.4	85
2006	MIL	1.86	9.26	-5.57	4.77	FG	69.4	79.8	75
2002	COL	5.94	9.22	-5.93	-3.43	FG	67.1	69.6	73
2009	ANA	9.53	9.18	-3.7	-4.83	Reference	93.3	92.2	97
1999	WSN	1.86	8.86	0.45	6.67	Reference	68.5	74.7	68
2003	NY Yankees	2.87	8.72	1.7	-4.93	Reference	67.7	61.1	66
1998	MIN	6.68	8.67	9	-7.13	FG	79.0	62.9	70
2008	CHC	9.01	8.49	2.83	2.57	FG	99.8	99.6	97
2004	NY Yankees	3.77	8.41	4.59	-0.83	FG	75.6	70.2	71
1999	CHC	0.04	8.39	-6.98	0.67	FG	60.0	67.7	67
2012	BAL	1.7	8.38	-4.77	-15.63	Reference	88.2	77.4	93
2005	PHI	2.29	8.32	-2.68	2.57	FG	85.3	90.6	88
2007	WSN	3.01	8.09	-2.47	-8.33	Reference	70.5	64.7	73
1998	SDP	1.41	7.99	-4.55	-14.73	Reference	93.5	83.3	98
2010	COL	5.16	7.99	3.62	5.67	Reference	86.6	88.7	83

Based on a cursory outlier analysis, these thoughts came to mind:

1) Ballpark factors may need a tweak in calculating WAR, particularly on the *Fangraphs'* WAR model (FIP)

2) *Baseball Reference's* prediction differentials are closer than *Fangraphs* in both cases. Generally, for the outliers in this subset (sample standard deviation), B-R was closer to actual wins (see table below)

3) Toronto and Texas seems to have the worst of inaccurate values, historically, with Texas, the offensive haven. Colorado attempted environmental controls, instituting a humidifier for baseballs around the turn of the century. Anaheim Angels would not seem to pose a problem. But day-night baseball on the West Coast – ballpark factors as Seattle appeared on both lists – could be at the root. The Orioles in 2012 and Yankees in 2005 reflect huge outliers. Bauman and Zimbalist (2014) also noted the Orioles in their analysis.

Diff St.Dev. (Sample)	Extreme Offense Win Predict	Extreme Pitching Win Predict
FG Predict Diff	6.2	7.9
BR Predict Diff	5.3	4.2

Again, *Fangraphs'* pitching side of the equation produces more extremes at the “extremes” of differentials from its partner-competitor in WAR calculation, *Baseball Reference*.

So while this FIP ERA is designed to be, “a good middle-ground option”, and “focusing solely how variables that a pitcher has control over (Fangraphs.com 2010),” such focus could be better, if it captures the nuisances for those teams listed above.

In short, *Fangraphs* may need a software update.

But not individual adjustments made ad-hoc, but an easily describable and repeatable adjustment one can see if looking into “the guts” of the WAR and FIP ERA modeling machine they have developed.

Their model currently captures very well that “middle ground” for 20-22 out of 30 teams; predicting, as shown, much better the mid-range of team win outcomes in the histograms above; but, their calculation could improve for the remaining teams so as to not generate such the wide discrepancies from *Baseball Reference*. Reference may not isolate pitcher’s WAR as accurately, but their model, based more purely off runs scored versus runs allowed, does not fail as often to reflect team’s actual outcomes: one stated purpose of a good model is to mirror that of reality. (Individual players’ WAR introduces a whole other discussion for analysis.)

One can see their website potentially outflanked on this WAR front: That of determining the productive values of players and their unique contributions in the name of baseball team battles. In the final analysis, *Fangraphs* won tactical battles, but they may have lost the overall strategy on computing WAR.

2.2. Pitching: The Evolution on the Rubber

Manager Connie Mack, once assign a percentage to the parts of the game saying, "Pitching is 70% of the ballgame." Mack uttered this likely when Lefty Grove was his top starter and formidable meal ticket. Others in the business of pitching proclamations have assigned 30, 40, or 90% of the deciding factor to the art of pitching in the defeating opponents. More likely, the outcomes of the particular games have much to contribute to the perception of the importance of pitching. In a 2-1 ballgame, obviously, pitching is paramount to the close, low scoring clash, unless, one saw numerous blunders on the bases, or great glove work rescuing either side's mound twirler. Meanwhile a 12-9 "softball game" might have been a pitching duel, except for that one inning, or the late inning blowups by both sides' relievers. It all depends – the pitchers have quite a say until the ball is thrown. Then, anything can (and has) happened on the field.

Softball Meet Hardball

In the very early days of the sport, it was considered more important for the pitcher "to get the ball over" for the hitter's benefit. A pitcher was selected for his skill at aiming 'high' or 'low', with little attempts made to be overpowering to those early men of the bat. Pitchers were special only because they could be "accurate and precise" and influenced hitters' outcomes more than anything else, but never to eviscerate scoring completely. The fielders then were still very raw – and fans celebrated games for their unusual plays and new feats achieved by the players. Such experimentation and experience came hand in hand to the game.

But as money influenced where guys played, how they played, and to what end, competition grew fierce, and rules changed aspects of a pitcher's guile and gifts, likely, most of all. No doubt, as a man's particular skill became visible, he exploited this new ability to his ultimate personal gain, if lucky. If such a skill was too overpowering – a great fastball, a 'trick' pitch, a windup that befuddled batters, or 'additives' to the ball – a rule change was assured discussion.

First of this kind, Jim Creighton, began to mold the pitcher's role from the accurate and kindly gent tossing the ball to the eager batter, to a competitive and crafty opponent that created the lasting conflict that makes baseball the game it is today. Creighton then a dual sport wiz – baseball and cricket – began punishing his opponents with a then illegal snap wrist fastball (McNeil 2006, 19) that zipped by his once-dominate counterparts, the batter. His credentials grew pre-Civil war, allowing him to be plucked by the Brooklyn Excelsiors for money and growing fame followed with women swooning and rising attendance at parks.

Creighton's abilities were not with external conflicts, as his Excelsiors ran into another top team, the Atlantics, with social antagonisms and gambling coloring their series. *From The Evolution of Pitching in Major League Baseball:*

"The potential for trouble was there before the pitch was thrown.

Gambling, having become common at games, could always inflame things. Beyond that, there was social-class antagonism: the Atlantics' fans were mostly Irish immigrant workingme while the Excelsoirs' backers were

mainly from the old Anglo-Saxon stock, in white-collar positions and the professions...After each close play, the Atlantic fans showed abuse on the umpire and the Excelsior players ...the 100 policemen at the game were hard-pressed to keep the crowd under control." (McNeil 2006, 20)

The glory of Jim Creighton was short-lived; he collapsed after hitting a home run, diagnosed as a ruptured bladder, and was dead at only 21 years old. Yet, he had, akin to Cartwright, started a tradition: in this case that of pitchers dueling batters head on. While friendly non-professional games existed, pro leagues were all about the match of pitcher versus batter.

Jim Creighton's exploits likely must of have inspired 14-year old Candy Cummings, who began his experimentation with the curveball from throwing clamshells on the beach in Massachusetts (McNeil 2006, 21), Cummings experimented with the physics of the first breaking pitch of renown. By the time of turning his major (18), Candy was employed by the Excelsiors in the late 1860s just prior to the first all-professional team: the Cincinnati Red stockings.

Cumming's curving gift was displayed in the first professional league National Association, and later, the National League through 1877. He finished his professional career at 145-94 with a 2.49 ERA (slightly deceptive). He completed 233 games, including two games in a day on September 9, 1876. Another Cumming's contribution had nothing to do with actual pitching. With his curve landing, it required the move of the catcher closer to the hitter (as catching was done some 20 feet behind home plate.) With curves, the ball kicked opposite the direction of the break, probably never consistently, so it moved catchers closer to the limelight for the years to come.

Others contributed to the annals of pitching history then. Joseph Borden, the first no-hitter (McNeil 2006, 26) and the quick career; Dick McBride and Albert Spalding as aces of their staffs; George Bechtel or Jack Manning, as the first definable relief pitchers (McNeil 2006, 25, 27); Cummings as the league's first workhorse starter (97% completion rate; league average of 90%); Bobby Matthews, a short righty, that submarined the ball, added the spitball to the annals of baseball (McNeil 2006, 27).

The ball itself underwent the tests of become a more stable, and deaden instrument, as "our professional dead balls...are the deadest ball made (McNeil 2006, 28)". The glove was added to the pitcher's and catcher's tool box first, looking more like modern hand ball gloves than full-fledged mitts of any sort. And rules to address pitching were added at a more vigorous pace as the years rolled by. A few new rules to promote offenses or the pitchers newly acquired gifts:

- 1845: distance set at 45 feet; 3 strikes for an out
- 1854: ball weight 5 ½ to 6 oz, 2 ¾ and 3 ½ in. in diameter (and modified down to near modern size by 1872)
- 1857: Put the ball over center of the plate
- 1858: If batter does not offer at a "fair pitch", umps can call a strike

1863: Pitcher does not throw a fair ball once, it is a warning. Second time, it is a ball. Pitcher's box was the first "mound" – 12' x 3' in size.

1867: Delivery of the ball with a "straight" arm

1870: No warning before balls or strikes by umps – took 9 pitches to get a walk.

1871: Batter to call for a high (above waist to shoulder) or low pitch (one foot above the ground to waist); this defined the strike zone breath.

1872: The jerk, wrist-snap, and bent elbow deliveries were legalized; (pitching injuries soon to follow)

– From *The Evolution of Pitching in Major League Baseball* (McNeil, 28-29)

1880: A Walk on *eight balls*, instead of nine; catcher must catch the ball on a fly for a strikeout.

1881: Pitcher's box (mound) located 50 feet, instead of 45 feet away.

(Technically, the usage of a "mound" did not come in until at least the 1890s.)

1882: A Walk on *seven balls*.

1883: A foul ball caught on first bounce no longer an out.

1884: Pitcher's motion limited to a shoulder-high delivery; instead of passing below the hip.

Walk on *six balls*.

1885: A bat can be flat on one side.

1886: A Walk on *seven balls*.

1887: Batters no longer allowed to call out a 'high' or 'low' pitch. Strike Zone defined: top of shoulder to bottom of the knees. Walk on *five ball pitches*.

Strike out on four strikes instead of three, where the first "called" third strike did not count.

1889: Walk on *four balls*.

1893: Pitching distance increased to 60 feet six inches. Bat must be completely round.

1895: Bat diameter increased to 2 ¾ inches from 2 ½ inches.

1900: Home plate from 12-inch square to a pentagon 17 inches wide.

1903: Pitching mound no higher than 15 inches above home plate.

– From *The Baseball Encyclopedia, Seventh Edition* (MacMillan)

Transition to Young

The entire decade of the 1880s innovated yearly, if you threw a baseball to a hitter. The rules changed yearly; and a young catcher in Connie Mack lived to see it all transform right before his tactical mind. Pitchers gained the upper hand in the confrontations: with the ability to get strikeouts before walks evident.

In 1886, Matthew Aloysius "Matches" Kilroy sent 513 men back to the dugout on strikeouts in the old American Association. Thomas "Toad" Ramsey racked up 499 strikeouts for Louisville in the same season. Charley "Old Hoss" Radbourn put 441 men back on the bench in 1884 in the National League, claiming the triple crown of pitching: 60 wins, 1.38 ERA and the "backward Ks" to boot. Endurance met overpowering ability for Old Hoss.

But the 1887 season defined a moment in baseball history: as pitchers never garnered more than 383 strikeouts again – after six men did it in three seasons in three leagues – and so rules changed drastically across the board to combat it. Strikeouts took four pitches for a spell. And as SABR member and 3-time Robert Peterson award winner William McNeil wrote, “The bat, which previously could have one flat side, now had to be round, not more than 2 ½ in diameter, and not more than 42” in length. All players were now wearing fielder’s gloves, and these too were soon regulated. In 1895, the catcher and first basemen were permitted to wear gloves of any size, but the other players were restricted to the use of a glove not to weigh more than 10 ounces and measuring not more than 14” in diameter (McNeil 2006, 41-42)” Coincidentally, the racial barrier was erected in almost the same breath in that year. (Could certain frustrations with performance/rules changes in the game extended to the allowance of African-Americans in integrating in the game without hassles? With predominately Scotts-Irish players – not known for patience or even tempers – one can suspect irrational psychological motivations played a role.)

The final and most important development saw the mound move backwards to the odd distance of 60 feet six inches in 1893. This came after Cy Young led the Cleveland Spiders with a 36-11 record and 1.93 ERA while participating in postseason playoffs against the Boston Beaneaters in 1892, losing 5-0 to their 1890s dynasty. Young’s sub 2.00 ERA was nearly a ½ run better than the next best pitcher, and carried Cleveland to a league leading 2.41 ERA, again outclassing their nearest rivals, Boston, by nearly a half-run (2.86). As McNeil noted, “[Young was] a world-class pitcher...he was blessed with two curveballs, a sharp-breaking curve thrown at the same speed as his fastball [probably a hard slider] and a wide curve thrown slower...The 6’2” Ohioan threw three no-hitters during his career, including a perfect game. Four days prior...Young threw seven perfect innings in relief against Washington... (McNeil 2006, 45).” Young was 22-year MLB veteran that stayed in great shape doing what a common farmer did in his offseason: tilling fields, chopping wood, preparing for the next rotation of crops. Young planted more winning games than any other in history at 511 tallies.

Another cohort responsible in moving the pitching distance back was 6’2” intimidating righty Amos Rusie. “Amos Rusie was probably the most terrifying pitcher of the late 1880s and early 1890s since his overpowering fastball, thrown from [the old] distance of 50 feet, was equivalent to a 100-MPH heater...He was not only the fastest pitcher of his time: he was the wildest, setting base-on-ball records that still stand today. His 289 walks in 1890 are still the National League record (McNeil 2006, 37),” stated baseball historian McNeil. “Happy Jack” Stivetts, Kid Nichols, John Clarkson, were in the group of 19th century elite power pitchers that caused hitters to adjust quickly to their new found stuff on that very variable bump parked 50-60 feet away.

But in that first season after the change, 1893, no team carried an ERA below 4.00. Young’s ERA adjusted to double his prior year’s work: 3.94, still good

for 4th in the entire 12-team National League. Cy Young proved resilient to any changes made over the next 20 years as age was his only enemy to combat.

It took several years before other pitchers got back to even with the batters. And the game reflected that as it modernized playing surfaces, and player talent flourished – coming from all over with personalities and proclivities to match the scions of the bump.

Brown, Mathewson, and Waddell

The decade of the aughts brought more fearless pitching back to the limelight as the legal team of Mordecai Brown, Christy Mathewson, and Rube Waddell ruled the bump and handed down their decisions. (You lose.)

George Edward 'Rube' Waddell (1876-1914), Connie Mack's first superstar, personified the untamable athlete. Waddell never met a day exactly the same way. His urges to do whatever came to his mind: play pickup games with children on game day; go fishing; hop trains and skip town and out on his bills; sit between innings with the fans; amuse with handsprings on the field; or, hold him to his word, or a contract – not doable with this ADHD ballplayer. (Rube married three times; once after a three day courtship led to 7 years of hell for wife May Skinner.) That Mack kept Rube is a tribute to the pitcher's enormous talent. Rube brought the strikeout back to life with 349 punchouts in 1904 and 25 wins to boot. Rube dropped batters with a jughandle curve and the Zeus-like fire from his lefty fingertips. Instinctual. Raw. And never dull. (To get Rube back to Philly from a California league barnstorm in 1902, Mack sent out two Pinkertons to escort him (O'Brien 2006)). With a like-minded catcher, nicknamed Schreck (Osee Schrecongost), Rube totaled four-twenty win seasons and seven league strikeout titles while with Mack. He then injured himself, bounced around (the minor league baseball and America), until his death from tuberculosis. Rube died on April Fool's Day 1914, and entered the HOF in 1946, smiling.

Christy Mathewson (1880-1925), arguably the best pitcher of the entire decade, came to the game at a time when roughnecks, umpire baiting, fights, and on-the-field decorum reached an all-time low. Mathewson, well-bred, and erudite, carried a big stick (or arm) like Teddy Roosevelt. While attending Bucknell with an emphasis on glee club, the literary society, and football, Mathewson found plenty of interest coming from Connie Mack, attempting to ply him over to the A's. Luckily, for the National League, Mathewson made his way to New York and John McGraw through owner Andrew Freedman's legal threats (Macht 2007, 221-225).

Mathewson from 1903 -1911 won at least 24 games eight times, going four times over 30. His ERA hung around 2.30 in all of those eight seasons. **Matty's best pitch**: a fadeaway, a screwball, from a man never prone to screwing around on the mound, or off; unless accompanied by McGraw to the theatre. Matty trekked dutifully to war, suffered from being gassed, and died too before his name was inducted amongst the immortals of baseball. But no one ever doubted he belonged, as the initial HOF class of 1936 reflected his great ability.

Mordecai Peter 'Three-Finger' Brown (1876-1948) gave his best to the Chicago Cubs – participating in their first four NL championships and only World Series wins. A typical Indiana farm boy that garnered unusual advantage from the mangling of his hand – missing his entire index finger with no use of his pinky – thus, he mastered the Giants from 1906 to 1910 winning over 25 games four times. He started out in the Three-I league, making his way to the doorstep of Cubs nemesis: the Cardinals. The Cubs got the trade advantage, and never looked back. Brown finished his career at 43 back in the Three-I in Terre Haute.



Three Fingers, no problem: Brown's hand, a gnarled wonder, got him into the Hall in 1949.

The Big Train

Born in Humboldt, Kansas in 1887, the year of the big change, **Walter Johnson (1887-1946)** was the best statistical pitcher ever to grace the mound, by a number of traditional and modern analyses. His early life saw him move to California, then up to Idaho for work, and play, being spotted on a local team by a roving scout, soon heading east to the nation's capital. The Big Train was king strikeout at 3,508 for a half-century; shutting out 110 opponents (20 more than 2nd place) during a 21 season tour of the American League for the Washington Senators, his only team. His 6'1"-200 pound frame generated a once-in-a-generation heater throw from a sidearm arm slot. He put away hitters from 1907-1927 at a 5.3 K rate, which, given the propensity to avoid Ks, to make any contact at all, was a substantial feat as William McNeil added a batter would do anything to avoid this seeing it as, "a stain on his manhood (McNeil 2006, 46)." From his inaugural season in 1907 through 1919, Johnson's ERA never broke 2.25. He allowed exactly 1,001 less hits (4,913) than innings pitched (5,914). Only 97 home runs were hit off him in 666 starts and over 800 appearances.

Johnson was Washington's true ace garnering 10 straight seasons of 20 wins, 7 times over 25 victories in that stretch. From 1912-1919 he led the league in strikeouts consecutively. His lifetime WAR of 165.8 places him 2nd only to Young, who threw over 1,400 innings more than Johnson, roughly seven seasons of modern starting pitching. Johnson won over 25% of his games without allowing a run as his 417-279 record indicates. The Big Train ran on time always.

The 1919 American League Ball: The Big Bam Effect

As discussed in Hitting (2.1.), a change in the offensive output by teams throughout the early modern baseball to the early 1920s came with an opposite effect to pitching effectiveness in the Coolidge Era (1922-1935) pitchers measured by ERA or WAR (Appendix: Top 100 Teams). No longer was it a league norm to have 4 or 5 pitchers with ERAs under 2.25 in a season like many of the Taft years saw. (As in 1913, the White Sox employed 3 pitchers (Cicotte, Scott, and Russell) with ERAs *under 2.00* while throwing in excess of 260 innings. They repeated this statistical dominance in 1917 with Cicotte, Faber, and Russell each throwing over 180 innings apiece.)

Instead, during the first few seasons of the new 'live ball' era, the best Earned Run Averages jumped by at least $\frac{1}{2}$ run over the normal leaders in the Taft era (1908-1921). McNeil, in quoting from *The deadball era.com* speaks to the overall modifications seen shortly before offense took off:

"As with all wars, there is always a shortage of materials. When it came to baseball, this was no exception. Since the standard yarn that was used for baseball winding was now being put to use to help the 'Doughboys keep the world safe for democracy,' baseball manufacturers had no choice but to use inferior, cheaper yarn...

It was found that the inferior yarn made the baseballs even more loosely wound than before. To make up the difference, the machines were set so that the yarn would be wound tighter to make up the difference. This is where it starts to get interesting. The Great War ended in November 11, 1918, but the flow of high quality raw material back to the private sector was a slow process. High quality yarn was not made available for the 1919 season. When the...high quality yarn [was] finally manufactured again, there was a noticeable difference in the feel of the ball. The baseball winding machines continued at the wind the yarn with the new, tighter settings. Why no one ever decided to go back to the old settings [assuming they even knew what they were, change of winding personnel] remains a mystery!...The new lively ball was shown at the end of the '19 season, many pitchers became nervous at the thought of serving up the new product. Cy Young commented, 'When I had a chance to take a gander at that lively ball before the '20 season began, my first thoughts were I was sure glad I was retired.'"

World War I directly influenced both materials to make baseballs with, and the so-called precise techniques to get those balls made. Both are quality control issues to a business that supplied a product for wide consumption, as hundreds of thousands of balls were being consumed. Yet, these changes were undoubtedly good for the game as discussed in the *Hitting Section*: attendance rose; the fallout for 1919 Black Sox Scandal was minimized by a refocus on the Babe; and this monumental effect in offense is mostly confirmed by the 2nd half performance of the first true slugger in baseball, Babe Ruth, in 1919. His home run rate exploded upward from an already well-above the league rate.

Babe Ruth's Month-to-Month statistics in 1919(Baseball-Reference)

Month	G	PA	AB	H	2B	3B	HR	AB/HR	AB/2B	OBP	SLG	OPS	BAbip	sOPS+
April/March	4	19	16	5	1	2	1	16.0	16.0	0.421	0.813	1.234	0.333	265
May	20	79	66	16	6	2	2	33.0	11.0	0.359	0.485	0.844	0.250	158
June	26	96	78	30	4	3	4	19.5	19.5	0.5	0.667	1.167	0.388	248
July	31	141	114	37	10	1	9	12.7	11.4	0.446	0.667	1.113	0.318	219
August	28	119	90	28	5	3	7	12.9	18.0	0.479	0.667	1.146	0.304	248
Sept/Oct	21	89	68	23	8	1	6	11.3	8.5	0.489	0.75	1.239	0.321	261

His second half jump in home runs and doubles coincided with the arrival of the better yarns wound tighter than previously accepted in the junior circuit. In 50 games, he clocked only 7 home runs in 160 at-bats, roughly 23 at bats between dingers. In his back half, he clocked 22 homers in 272 at bats, a 12.4 rate. This works to a 185% improvement in rate of balls leaving the yard. In concert, the Babe's doubles rate equally jumped (as discussed is a reflection of gap power). It is plausible that the first souped-up balls came to the park on or after July 1st. (Notice the Babe's BABIP did not skyrocket; as shown in the *Hitting Section* example.) On August 14th, Ruth began a stretch of hitting 7 homers in 12 days, including a 4th grand slam.

Other hitters with marked improvements in their post-June 1919 numbers for doubles, home runs, batting average on balls in play, or their slugging averages: Roger Hornsby, Bobby Veach, Ty Cobb, George Sisler, Eddie Collins, Roger Peckinpaugh (2B), Harry Heilmann (BABIP), Tillie Walker (2B) William 'Baby Doll' Jacobson and 'Shoeless' Joe Jackson. A few of these were NL leaguers, so individually, their numbers are just a matter of chance.

This anecdotal analysis does not certify that such a baseball change boosted offense and translated immediately. From a batting standpoint, some players kept doing what they normally did at the plate, making contact; others, seeing more hop to the ball, may have copied off what the Babe was doing (as they undoubtedly did in the years to come). And others, doing what works for them, began to see increasingly better results without any adjustments. In the American League, the change was substantial and identifiable, whereas, the 1919 National League was left behind for the time being.

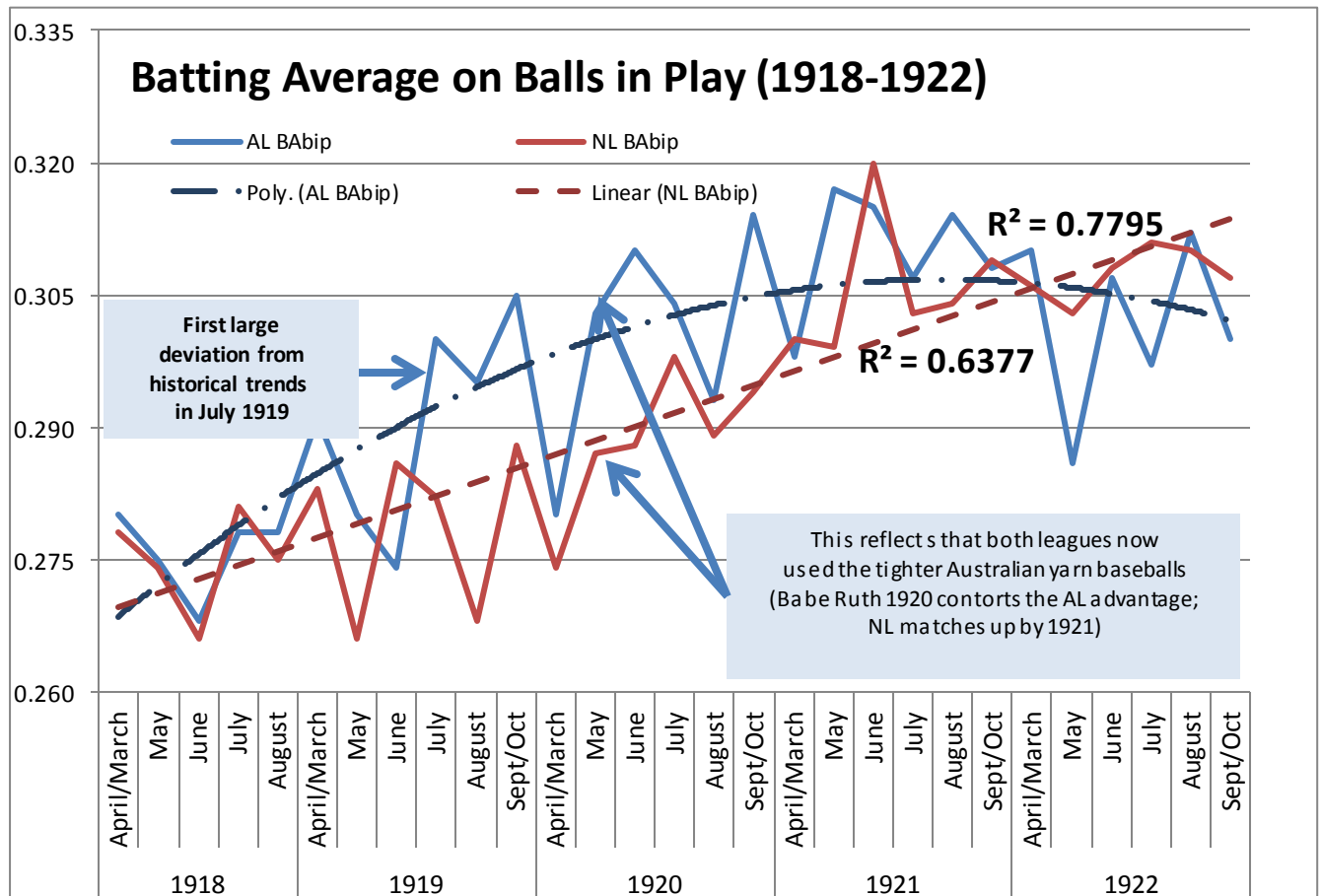
1919 American League Batting Statistics

Split	G	PA	AB	H	2B	3B	HR	AB/HR	BA	OBP	SLG	OPS	BAbip	sOPS+
April/March	458	1679	1482	384	69	20	5	296.4	0.259	0.324	0.343	0.667	0.291	99
May	1958	6890	5985	1543	275	70	19	315.0	0.258	0.327	0.337	0.664	0.280	104
June	2380	8290	7319	1869	259	100	65	112.6	0.255	0.319	0.345	0.664	0.274	99
July	2797	10010	8738	2416	399	163	50	174.8	0.276	0.343	0.377	0.719	0.300	108
August	2265	8383	7349	2002	340	95	60	122.5	0.272	0.34	0.369	0.709	0.295	116
Sept/Oct	2069	7364	6525	1810	270	83	41	159.1	0.277	0.34	0.363	0.703	0.305	106

Batting averages, slugging averages, overall home run rates were all moving to the batter's benefit. Jumps of 20 points in batting averages league wide, mid-season, could only be caused by an external event, not a sudden decrease in effectiveness of pitching. Batting averages on balls in play provides the most obvious support: as the balls were moving faster through the gaps, the balls found holes in the defenses. Outfield likely became one of positioning deeper to get an even better jump on the ball. As noted, BABIP is: (Hits – Home Runs/ At-bats – Strikeouts – Home runs – Sacrifice Flies) Or **BABIP = (H-HR/AB-K-HR-SF)**

1919 National League Batting Statistics

Split	G	PA	AB	H	2B	3B	HR	AB/HR	BA	OBP	SLG	OPS	BABip	sOPS+
April/March	494	1825	1617	426	69	18	9	179.7	0.263	0.329	0.345	0.674	0.283	101
May	2024	6960	6215	1544	212	92	41	151.6	0.248	0.307	0.332	0.639	0.266	96
June	2402	8318	7474	1991	288	105	46	162.5	0.266	0.319	0.351	0.671	0.286	101
July	2238	7799	7047	1842	236	107	50	140.9	0.261	0.314	0.347	0.66	0.282	91
August	2524	9068	8210	2008	278	92	31	264.8	0.245	0.296	0.312	0.608	0.268	85
Sept/Oct	2143	7398	6725	1793	232	103	30	224.2	0.267	0.314	0.345	0.659	0.288	94



In June 1920, the National League first began to see similar creeps to its offense as the American League. The leagues were getting now getting the same balls. Ruth's statistics in the AL had a smaller league influence. In 1921, the National League's BABIP number hit over .320 in June. Pitchers were doomed for the entirety of the Coolidge Era.

The Pitcher: No Longer Just One Guy

Along with this historic and significant ball modification came the shortening of the duration of the starters' performances.

Once again, a significant rise in earned run averages followed batting averages rise and dingers flying out by 1920 in both Leagues. During this time, starting pitchers length of pitching outings decreased from 8 innings to well under 7.50 innings per start. (Determined by taking (Total appearances made – Games Started) x 1.66 (a fair estimate of an average relief outing in 1910-1935 for a usual starter and *subtracting* these 'extra' innings from *typical starters*.)

For years before, workhorse pitchers in both leagues existed, sometimes pitching doubleheaders against the modern (financially logical) reason to do so. 'Iron Joe' McGinnity did this feat five times. Numerous others in both the MLB and Negro Leagues were acquainted to this utilization of their talents. But as these offenses took an uptick, managers became more conscious (or saw it didn't make sense to leave a guy on the mound to get shelled) of utilizing relief pitchers or even their best starters (lightly) between games.

Additionally, other tactics were gaining popularity or employed as the decline in complete games was prevalent from the institution of the 60'-6" distance. As McNeil emphasized, "In 1892, a starter completed 88 percent of the games they started. By 1910, perhaps assisted by the introduction of the new cork-centered baseball, but more probably the results of a general drop-off in runs scored...the number of complete games had tumbled to 56 percent in the National League and 68 percent in the American League. Five years later, the American League complete game percentage stood at 53 percent. More teams were pinch-hitting for the pitcher in the late innings in an effort to win the low-scoring games common at the time." The usage of pinch hitters and platooning batters, for an edge, reflected just manager's tactics in combating ace pitchers. Taking the risk of pulling their starting pitcher to potentially get a run-scoring opportunity was rational, feeding back into the decline of the complete game.

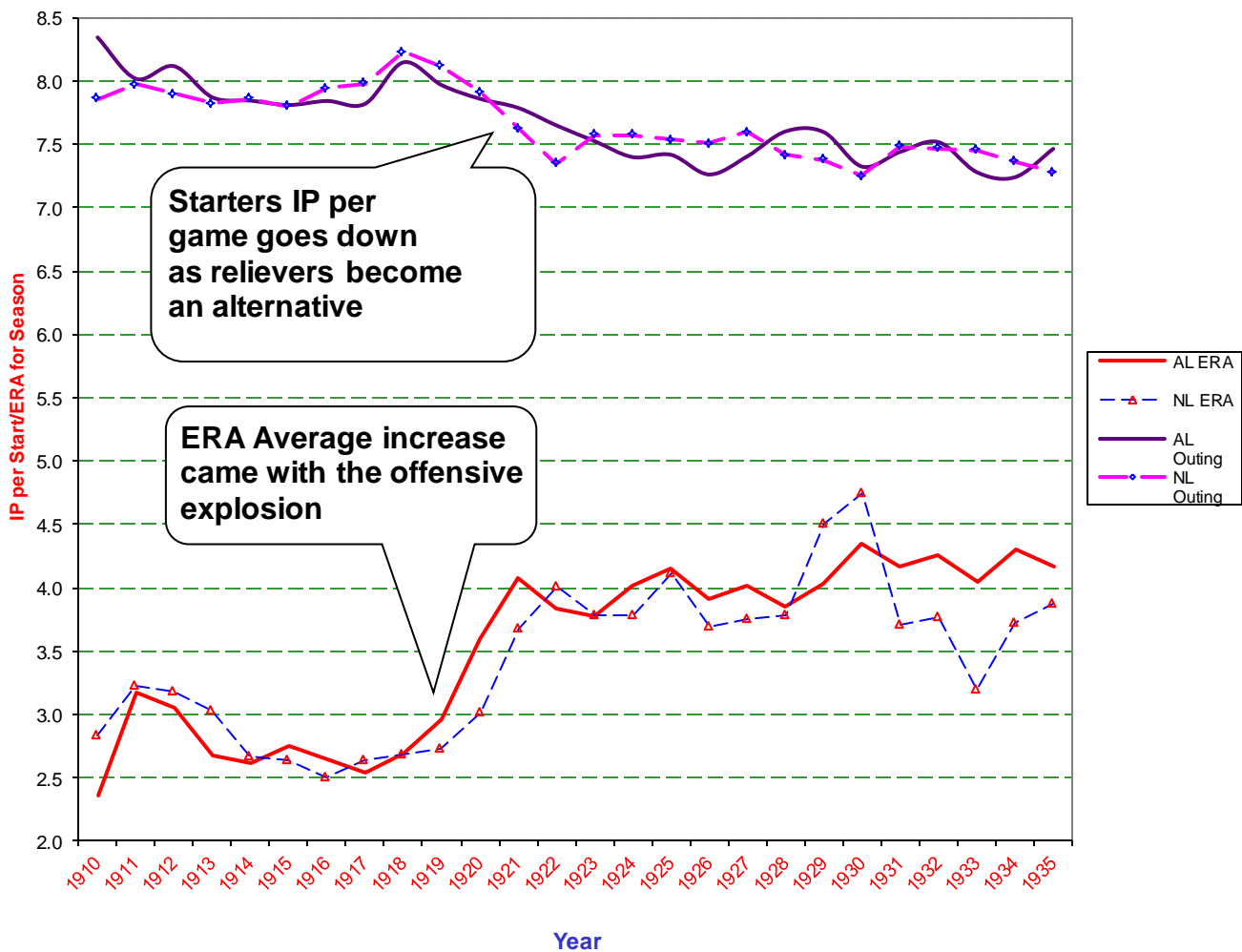
In unison, the stolen base disappeared as a favored tactic. "Small ball" seemed ridiculous when Ruth stepped up and whacked grand slams and 3-run home runs. The National League and legend John McGraw winning ways went away from the usual deployment of speed, gritty fundamentals, and ace pitching (Mathewson had been gone for over half a decade) to the conflicts with hitter Frankie Frisch in the early 1920s. McGraw's last time in the World Series (1923) punctuated the end of stealing solely for offense. Ruth's power defeated steals.

Maybe too a more significant issue was the lack of necessity to overpower hitters for much of the time frame prior to the ball modifications. Pitchers pitched to less harmful contact; and the hitters looked to make contact first, and

foremost. Not every at-bat, for certain, but the need (or ability) to blow away hitters was seen as fairly unimportant, if a defense played well. But that aspect redefined in the period discussed. Talented pitchers saved their best stuff for the difficult situations in the late innings. Top-flight managers used their workhorses as much as possible. The results expected modified to the new paradigm that spread over this dynamic period in baseball history. As years unfolded thereafter, strikeouts equated to top pitching: nicknames and legends came from *The Gas*.

Meanwhile, the balls had eyes, finding ways past good fielders that were adapting with new methods – the newly designed *Doak Model* glove came in by 1920. Coincidence that a pitcher worked on better fielding gloves to combat for his fielder's problems? In 1917 and 1918, 45 unearned runs scored in Bill Doak's 60 starts and 75 overall appearances. This totaled nearly 25% of the runs he allowed (199). Doak tossed the spit ball; grandfathered in to throw it past 1920 by his own urgings (S. Steinberg, Bill Doak 2004).

Graph: Starters IP and Earned Run Average by Year (minimum 10 starts by pitcher)



Even still, starting pitching staffs tossed a significant number of complete games due to a lack of true 'specialists' that got hitters out in close games. Relief pitching, was more afterthought than design, more failure-induced than success-focused, because its usefulness, as a managerial priority, was not seen, or even determinable by a hunch-first bunch of managers. A few of the early successful warriors (and one-year wonders) in mop-up relief/closing games are below.

1913 – Brooklyn Dodgers, **Bull Wagner**, 70 2/3 IP, 5.48 ERA, 18 games

1914 – Chicago White Sox, **Bill Lathrop**, 47 2/3 IP, 2.64 ERA, 19 games

1915 – New York Giants, **Ferdie Schupp**, 54 2/3 IP, 5.10 ERA, 23 games

1916 – New York Yankees, **Slim Love**, 47 2/3 IP, 4.91 ERA, 20 games

1921 – New York Giants, **Slim Sallee**, 96 1/3, 3.64 ERA, 37 games, 2 saves

1921 – St. Louis Cardinals, **Lou North**, 86 1/3, 3.54 ERA, 40 games, 7 saves

1922 & 23 – New York Giants, **Claude Jonnard**, 192 IP, 3.55 ERA, **10 saves**

1925 – Washington Senators, **Firpo Marberry** (heat specialist), 93 1/3 IP, 3.47 ERA, 15 saves

1928 – St. Louis Cardinals, **Hal Haid**, 47.0 IP, 2.30 ERA, 5 saves

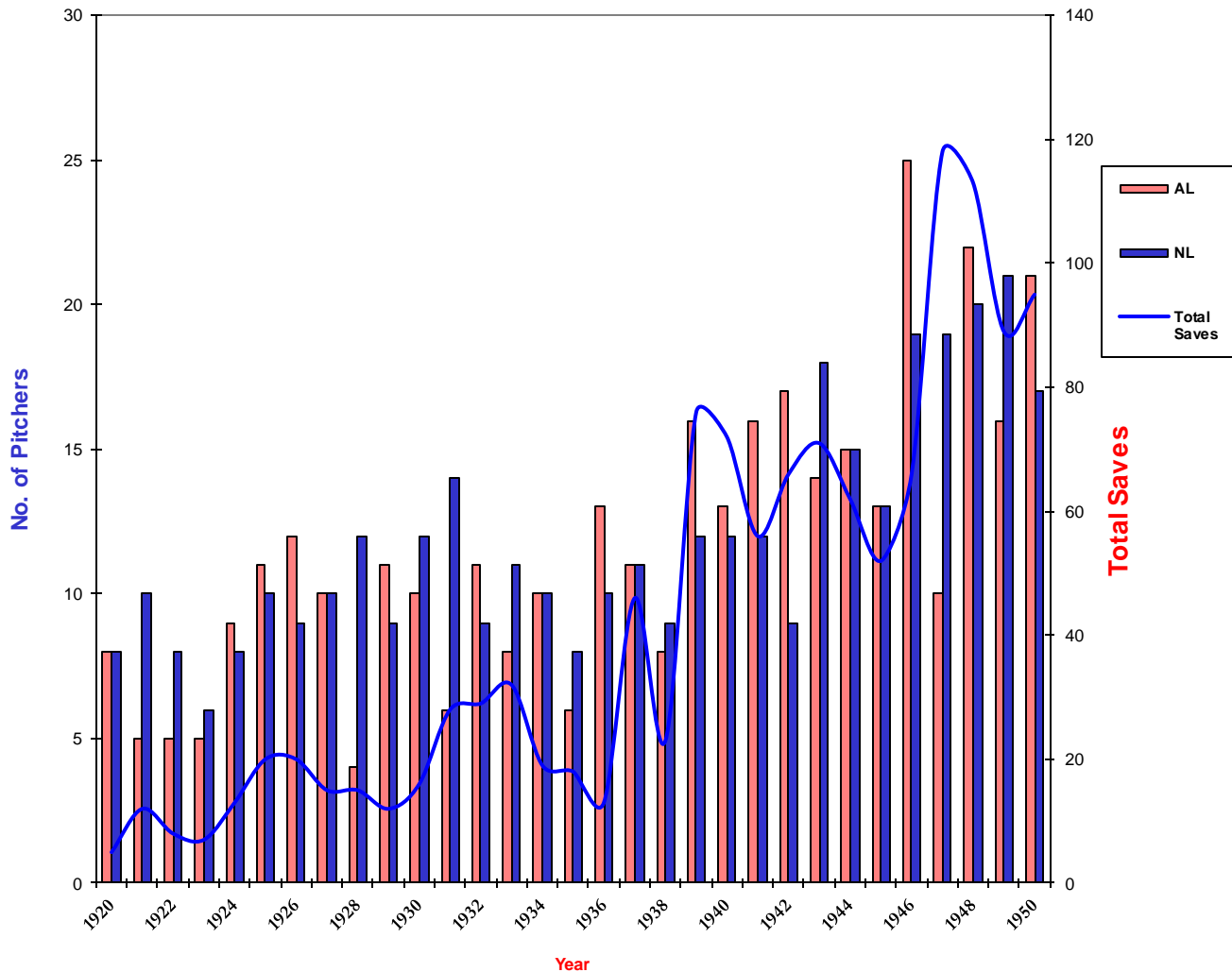
1931 – Brooklyn Dodgers, **Jack Quinn (spitballer)**, 64 1/3 IP, 2.66 ERA, **15**

saves (James and Neyer, *The Neyer/James Guide to Pitchers: An Historical Compendium of Pitching, Pitchers and Pitches* 2004, 348)

Rarely did more than 15 pitchers per season amass innings solely as a relief pitcher. In many cases, Off-Day Starters came in to 'mop up' for their counterparts. By the turn of the IKE era (1950), the unswerving usage (by a few managers) of a middle reliever/closer type consistently cropped up as top starters decreased their innings pitched. The best starters relief appearances between starts decreased; and more innings pitched by the 5th-9th best pitchers on the staff grew.

But the change in roles had only just begun.

Graph: Relief Pitchers and Total Saves (1920-1950)



In one of Bill James's more interesting passages (*Valuing Relievers*, Historical Baseball Abstract, page 232-239), the evolving role of the relief pitcher is defined by five different patterns of usage through a computer simulation:

Clint Brown pattern: starting pitcher gets shelled and the reliever was not tired. Normally the reliever got into over 55 games, pitched over 105 innings, and amassed ten saves. This was the FDR Era pattern (mid-1930s to early 1950s) for guys like Clyde Shoun, Joe Page, or Ace Adams.

Elroy Face type: saved for later innings in a close game. Never pitch more than 3 innings, obtain 1-2 days between longer appearances and comes in when the game was +/- 2 runs. This pattern started in the IKE Era (1950-1962) and relievers got into 60 games for 96 innings, generating 15 saves.

These are 2nd generation *closers* of the Elroy Face vintage from the 1950s:
Cardinals – Al 'Cotton' Brazle (51-54)
Yankees – Luis 'Yo-Yo' Arroyo (60-62)
Reds-White Sox – Jim 'Professor' Brosnan (60-63)
Yankees – Ryne Duren (58-60)
Cubs – Don Elston (58-62)
Pirates – Elroy Face (56-67)
Giants – Marvin Grissom (54-58)
Cubs-Reds – Bill Henry (58-63)
Boston – Ellis 'Old Folks' Kinder (51-55)
Brooklyn/LA – Clem Labine (53-59)
Cardinals/Cubs/Giants/Yankees/Royals – Lindy McDaniel (59-75)
Giants/Cards/Indians/Orioles/White Sox/Angels/Braves/Cubs/Dodgers – Hoyt Wilhelm (52-72)

Hoyt Wilhelm scenario: Matches up well with the LBJ era (1963-1977) were, as in James' thought, relievers were "worked to death (James, The New Bill James Historical Baseball Abstract: The Classic – Completely Revised 2001, 234)." These relievers pitched in over 70 games for 128 innings and recorded 24 saves. The relievers replaced the starter out of preferring the bullpen ace's stuff in the crucial situation to the starter's ability to get outs in a close game, whether up, or behind. They are guaranteed outings in every other game that season of at least 1-to-2 innings. Mike Marshall, Ted Abernathy, Mudcat Grant, Sparky Lyle, Wilbur Wood, and Wilhelm fit into this workhorse mode.

Bruce Sutter bullpen ace: From the late 1970s to the early 1990s (Reagan era), a reliever only came in "save" situations, never with the game tied, or the trailing. With less work than the Wilhelm model (61 games, 111 innings, but 38 saves), these guys piled up huge save numbers, and eventually, were paid that in lockstep: the glamour, the position as "the closer" was created. Rollie Fingers, Lee Smith, Goose Gosage, and Dave Righetti are fine examples of this.

Robb Nen modern, 1-inning type: In the Clinton era (1992-2005) and likely beyond, top relievers only see the ninth inning of games in which their teams are ahead. Mariano Rivera, Trevor Hoffman, Billy Wagner, Armando Benitez, Jose Mesa, Billy Koch, Troy Percival, Roberto Hernandez, and John Wetteland, all fit neatly in this mold. According to James (2001), his model produced stats of 77 games, 91 innings, and 41 saves in this usage.

With usual allowances for extreme situations, James' study concludes that:

100 runs saved by a *top reliever* impacts a team *greater* than 100 runs by a starter. Call it the marginal impact in these high leverage situations. The number varies between 36% to 97% more. But it is at least 70% more important for a reliever to stop those *late inning runs* compared to a starters' contribution.

The latest usage (1992-2005) was *not the best answer*.

The pitchers in the LBJ era were likely the best utilized: more innings, number of situations decided under their control and being used in tied games. According to the James' model, the top relievers up to 7.4% of the time affected a tied game. More than any other scenario usually presented. (From -2 runs to +3 runs for the home team.)

65 games for 100 innings is a best application for 'The Closer' to see.

In *The Boys on October*, an applicable quote describes the role and importance of a closer:

"...Everything he does is magnified. The failures of his teammates may be of greater or lesser importance, or none at all, depending on the situation. But if *he* fails, then by definition the game is lost...It is among the most nerve-racking of occupations, the perpetual pressure cooker, and not only must the closer embrace it but he must convert something like 80 percent of his save opportunities [90%], or he'll be replaced. Few are up to the task, and those who *can* hack it are highly prized." (Homig 2003, 74)

On the flipside, starters are essential for anything a MLB team will do to contend for a pennant. To be able to win in the ninth, starters best get the ball to the 7th inning or beyond 75% of time. Else, middle relief is taxed and torn apart; and, the result is a scorching summer that will fry any GM's nerves.

Starter's work on the bump is tied directly to their ability to adapt, overcome adversity, and prepare for unusual circumstances. In *Men at Work* by Pulitzer Prize-winning columnist George F. Will, Tony LaRussa and Jim Lefebvre determined there are six ways to make a starting pitcher vulnerable. Specifically:

Leadoff batter in the game: A starter has just warmed up, come back down, and has different conditions prevailing. A batter, an umpire, and a different mound, plus the starter has limited feel for what pitches work and a batter can make him work right out the box with a walk, bunt, or a home run on a mistake.

Two quick outs in an inning: Pitchers let up after this condition is reached. Closing out the inning can become difficult for the unfocused minds, especially young starters.

The fifth inning – decision time for a starter: Starters may stress, aiming the ball, lowering velocity and getting too fine. Also, let their mechanics go, or tire, while conscious enough the bullpen is able to pick up slack in a crisis.

Unprepared physically: Poor conditioning and inability to repeat his throwing motion leads to errant pitch location and a dramatic drop in velocity.

Unprepared mentally: Not aware of what the batter likes, or ignores fielders' positioning tied to one's regard for their "best pitch", or more likely, choosing a weaker one for deception sake. The batter advantages that weaker pitch into a mistake, by patience, creating a strong hitting zone outcome.

Unable to overcome adversity: When the defense fails behind you; or a 'strike' call is called a ball. Or a sure double play is just a force out. Pitchers lose

concentration and live in the past on the mound, creating an inability to get back to a normal rhythm (Will, *Men at Work: The Craft of Baseball* 1990, 24-25).

Many pitchers that successfully mastered these pinpointed weaknesses in their games racked up significant victories in their careers. However, some of the best were noted to have one, or more, of these flaws in their games at various points in their careers.

Orel Hershiser better known as the 'Surgeon' for his ability to slice up an order and think ahead of the hitters (usually) was not always so attentive to the little things. His fielding, wild pitches, balks, hit batters, and throws to the bases are rated amongst the worst in baseball history (Bill James, *Historical Abstract*, 2001). Later in Orel's career, hitting batters and throwing wild ones happened at *least once* every other game.

Early on though, Hershiser put together a consecutive scoreless inning streak in 1988 that spanned 7 games, breaking Don Drysdale's 58+ innings record. Who'd broke Walter Johnson's 56 innings of donuts amassed in 1913. From 1985 to 1989, Orel finished in the top five in the Cy Young vote four times, three time leading the league in innings pitched. The surgeon skillfully prepared for patients.

Robert Moses 'Lefty' Grove thrived despite his explosive temperament, and win-at-all-costs attitude. A true fireballer, with a knack for explosions when the game went south, Grove could go from being in steely control on the mound to a loss of composure in just a matter of a batter, especially if a teammate blew a play. But Grove's stuff overwhelmed most batters as his MLB 300-141 record firmly attests to.

At twenty, Grove came into the fold of Jack Dunn's powerful Orioles. From 1920-24, Grove went 108-36 in the International League with an ERA at 3.05 in this hitter-friendly league. This ERA came despite a propensity to walk batters at a rate of 5.4 per game while only giving up only 952 hits in 1,184 innings in those five 'minor' seasons (Sports Reference LLC. 2013).

At age 25, the wild lefty trekked to the bigs for the A's. Pitching control problems followed: 5.98 walks per nine innings in 1925; after being purchased for a then record \$100,600 from Dunn. Best modern comparisons: Think Randy Johnson, only shorter (but still an imposing 6'3"); or, the ambidextrous, but a righty-for-the-bigs Carlos Zambrano, with lesser ability in the latter, but quite possibly, a crazier man. Grove, noted for gas, likely threw *only* into the high 90s, whereas, Randy Johnson threw measurably harder clocked at 102 MPH in 2004 at 40 years old (McClintock 2011). This measurement of how hard one throws is always measured against the next man's clocking of 108.1 MPH (velocity at release point of 55 ft.) in 1974 (McClintock 2011).

Nolan Ryan, likely the best-conditioned pitcher of his generation (and there were plenty more like him), was also a wild one, giving up walks at a 4.67 per nine-inning clip for his career. This at 100MPH is not a pleasant experience: Somewhere between a Novocain-less root canal and skydiving parachute-less over a Pacific Ocean basin where Great Whites are being chummed for a

Discovery Channel photo op. If “No-no” Ryan got peeved, lord, be prepared for final arrangements. Luckily, he was not intentionally cross that often.

Ryan’s rawness was hindered in the late 1960s by personal commitments, and a lack thereof by the New York Mets. His commitment to the Army Reserves during the Vietnam Era put Ryan’s baseball career on hold for various stretches, missing spring training in 1967. (Though this “champagne duty” compared unfavorably to the sacrifices others made in to the war.) The Mets, meanwhile, put *The Express* in the majors at 19 in 1966, getting him derailed from development right from the start. Then, at 24, they traded him west to California, where, after battling through blisters, poor coaching, and impatience from New York execs and managers, he fell into a dominating career.

In the 1970s, Nolan’s walks per 9 innings were regular above 5.5 and sometimes over 6. He led the league in wild pitches six times. Surprisingly (or not), Ryan led the league in hits batsmen only once in his career. Obviously, hitters found ways to be somewhere else when *The Express* derailed. But throughout the 1970s Ryan was the master of two diametrically opposed categories: strikeouts and walks.

Going up against Ryan in (1972-1976) meant the following probable outcomes for the 5,961 batters he faced:

Strikeout: 26.7%	Extra base hit: 4%
Walk: 14%	Non-K Out: 42.4%
Base Hit (all types): 16.3%	Hits batsmen: 0.6%
HR%: 1.3%	

Using some rough estimations on pitches thrown (no Brooks Baseball, Pitch F/X website to consult), Ryan threw, on average, around 138-140 pitches per game if using 5.75 per walk, 4.5 per K, 3.5 per hit, 3 per hits batsmen, and 4 tosses per batter for the remainder of the outs. This likely underestimates, but it shows the workhorse that was Ryan – as a Clinton/Bush era pitcher is lucky to see 110 tosses before a manager is all but required to pull that starter. (Money being the reason – no longer can you run these guys out there without regards to their health. There are serious paychecks to think about from the front office on up to the \$25-30 million dollar man on the bump, 33 times a season, at most.)

As Ryan aged though, he found the plate more regularly, improving to the 3.5 walks per game neighborhood. (This after Ryan developed a circle change-up – as this 2008 [MLB video](#) reflects.) After 1984, at age 37, Ryan’s number of walks became manageable and K/BB ratio was the best in his career at nearly 2.8 to 1. Lastly, Nolan was never afraid throw down after hitting a batter with Number One: Chicago White Sox 3B Robin Ventura was given *a lesson* on how to take a plunking from an older man.

Warren Spahn, won 363 games, never forgot what a batter liked, the fifth tenant above. In *Baseball’s Hall of Fame*, Jerry Brondfield recounted a conversation with Johnny Sain, teammate and innovative pitcher with the Braves: “...He was a great fielder off the mound. He had a terrific pickoff move to

first. He was the only pitcher alive who ever picked Jackie Robinson off first – twice in one game. He also had a memory like an elephant. One of the league’s best hitters once got a double off a fastball Spahn had thrown him high and inside. The guy didn’t see a fastball, high and inside, off Spahn for the next 10 years (Baseball’s Hall of Fame 1983, 97).” Spahn’s successful preparation led to twenty wins a season for thirteen years. This is not a surprise considering his coolness under fire as he received a battlefield commission from sergeant to lieutenant during the battle of the Rhine River in WWII (Baseball’s Hall of Fame 1983, 95).

But even Spahn had a nemesis: Willie Mays and the home run. Mays tagged him for 18 home runs after starting out 0 for 21 against Spahn (The New Bill James Historical Baseball Abstract: The Classic – Completely Revised 2001, 850). Spahn, always around the plate, regularly saw 25 home runs a year hit off him, but typically walked just 2.5 batters/game, yearly. Spahn counterbalanced some flaws by being able to hit better than nearly any other pitcher of his era. (9 times Spahn recorded double-digit RBIs and totaled 35 homers in his career.)

Spahn won more games than any other lefty in modern baseball history.

Sandy Koufax spent the first six seasons of his career trying to overcome severe control problems and the quiet opinions of HOF manager Walter Alston. He was 19, a \$6,000 bonus baby (Baseball-reference.com), but hardly ready to ace the Dodgers’ staff as they transitioned to the left coast. Starting in 1961, Koufax quit overthrowing and aiming the ball and found his command via a ‘rocking motion’ (Myers and Gola 2000) to control a plus fastball and an awesome and powerful curveball to sheer devastation of the National League. From 1962-1966, he led the league in ERA, posting 3 seasons under 2.00 while winning 25 games or more three times. In 57 innings pitched in the World Series, Koufax posted a 0.95 ERA, 4-3 record, with 61 Ks and a meager 11 walks. His Wins Above Replacement for 1963 and 1966: 9.9 (3rd) and 9.8(1st in NL) would be higher if his hitting was better. He finished 8th in WAR (7.1) in 1964.

Top bWAR(NL)	1963	1964	1965	1966
1st	Mays 10.6	Mays 11.1	Mays 11.2	Koufax 9.8
2nd	Ellsworth 9.9	Santo 8.9	Marichal 10.5	Marichal 9.8
3rd	Koufax 9.9	Dick Allen 8.8	Maloney 9.0	Mays 9.0
4th	Aaron 9.1	Drysdale 8.4	Koufax 8.6	Santo 8.9
5th	Marichal 8.1	Willie Davis 8.4	Bunning 8.5	Bunning 8.9

350-game winners Roger Clemens and HOF Bob Gibson were known for a focused attack. They had a knack of taking everything done on a ball field as an outlet to become more pissed off, using batters as punch out bags. (The antithesis of the final idea: inability to deal with adversity.) Getting them angry, through verbal sparring or smart play, just made them more determined to put a batter on his back, or whiffing futilely at a Gibson, or Clemens delivery. (While

they threw broken bats *back at* an opposing hitter...) Gibson could beat you with his bat (20 RBIs) and his legs (5 SB) garnered in a single season.

Gibson developed this hard nose attitude after living in a housing project, being raised by his mother (his father died before his birth), and driven relentlessly by his older brother, Josh. Thereafter, he attended Creighton University as a two-sport athlete, being offered \$4,000 to play for Cardinals was the way out for a 1950s talented black youth. True grit came with this background. Gibson was tendered \$4,000 by Abe Saperstein's Harlem Globetrotters. Luckily, he stayed with baseball.

When Chris Speier, a young Giants shortstop, mouthed off to Gibson, Speier, thus garnering even more attention, Speier backed down. The result: he got some chin music at 95+ MPH from Gibson (Halberstam, October 1964, 272).

Gibson purposed nearly every pitch – rarely wasted the effort on throwing the ball if it did not have an intention, like a criminal's master plan. He gamed the hitter; ran a fastball way inside on power hitters like Aaron, Mays, Banks, or McCovey, depending on the situation. But this was done to set up the guy for any perceived weakness away. And his greatest intimidation never came from a stare down contest – just his stuff versus a batter's best estimation of what will come next.

Bob won too often, and too stingily, for the owners' liking.

When Gibson contorted the confrontation so much, the owners changed the mound and strike zone in 1969, he suffered, a bit – as anyone does who mastered the dominating men hitting balls 450 feet regularly. Gibson never came within an earned run of his 1.12 ERA mastery in 1968.

In *Empires and Idiots*, Mike Vaccaro reflected this particular inside drive in certain pitchers, "If Clemens had earned a reputation as the modern pitcher most likely to adhere to baseball's old code of frontier justice...then Pedro [Martinez] was the heir apparent, Bob Gibson to Clemen's Don Drysdale (Vaccaro, 34)." Drysdale plunked 18 and 17 batters in 1959 and 1966, about 1 every other start while also clocking 29 home runs during his career. Abusing both batters and opposing pitchers with his 'mean streak' play.

1951 New York Giants ace Sal 'The Barber' Maglie was a forerunner in strict adherent to this frontier justice philosophy. Sal finished with a .657 lifetime winning percentage in a 10-year career. As professor and author of *Dollar Sign on the Muscle* Kevin Kerrane related on Sal Maglie, "Another scheming meanie was Sal Maglie, who avoided getting to know the hitters personally, 'I might like them,' he said, 'and then I might not want to throw at them.' Maglie earned his nickname by giving batters close shaves; his control was so fine that he could scare them without hitting them (Kerrane, *The Hurlers: Pitching Power and Precision.* , 24-25)." Maglie looked the part of intimidator. With classic mobster 'good looks', he compiled a 59-18 record from 1950 to 1952 during the Giants heyday battles with the Dodgers.

The Evolving Role of the Mound

Undoubtedly, many pitchers could be discussed for their ability to succeed, or fail, in a certain roles while in the big leagues. Over the course of the last 100 years, the variation from starter, to long reliever, to middle reliever to the closer has seen its fair share of adjustments to usage, value, and quality in those roles. And every pitcher, at one time or another, had a cup of coffee in such roles.

Pitchers by Role

Starters: 18 or more Starts, >=60% Appearances as Starters <=10% Saves, <=5 Saves

Earned Run Average, IP per game, Relief Appearance Avg.

Reagan	3.76	6.22	1.90
Clinton	4.22	6.05	1.16
Coolidge	3.85	6.30	6.81
FDR	3.63	6.31	5.63
IKE	3.64	6.08	5.20
LBJ	3.40	6.32	3.09
Taft	2.75	6.63	7.46

Part-time Starters & Long Relief: Less than 18 Starts, Between 25% to 100% As Starters, <=10% Saves, <=5 Saves

Earned Run Average

Reagan	4.53
Clinton	5.24
Coolidge	4.69
FDR	4.33
IKE	4.48
LBJ	4.22
Taft	3.41

Middle Relief: Less than 18 Starts, Less than 25% Starts, <=10% Saves, <=5 Saves

% of Innings Pitched, Earned Run Average

Reagan	15.2%	4.12
Clinton	24.1%	4.51
Coolidge	8.5%	5.30
FDR	10.1%	4.85
IKE	11.6%	4.67
LBJ	11.8%	4.15
Taft	3.9%	4.35

Closers: Less than 25% Starts, > 10% Saves, >=5 Saves

% of Seasons Pitched, ERA, SV per season

Reagan	10.5%	3.06	16.12
Clinton	6.8%	3.36	22.97
Coolidge	1.1%	3.64	8.75
FDR	2.4%	3.45	10.10
IKE	6.8%	3.26	11.21
LBJ	10.2%	2.92	13.09
Taft	0.2%	2.95	7.00

In looking at the pitchers' role, macrosabermetrically from starter to the closer, the affects made to their roles have significantly modified the game of baseball. As offense began domination the game, the specialization of the pitcher has introduced weakness that in the past were not nearly as prevalent. (The prior discussion on relievers' usage pointed out optimization issues.)

In defining the roles of the pitchers, this author categorized them based on their season-to-season usage for each time frame using the following criteria:

Starters: 18 or more starts, greater than 60% of appearances as starters, less than (or equal) 10% saves, and less than 5 saves

Long relief, part-time 5th Starters: less than 18 starts, 25% or more starts, less than (or equal) 10% saves, and less than 5 saves

Middle Relief: Less than 18 starts, less than 25% starts, less than (or equal) 10% saves, and less than 5 saves

Closers: Less than 25% starts, greater than 10% saves, and more than 5 saves

Remaining pitchers: those that did not meet these criteria

Table. Number of Pitching Seasons Amassed in Era by Pitching Role

Era	All	Closers	Middle Relief	Long Relief	Starters	Remaining
Reagan	6136	643	2220	1451	1466	356
Clinton	8587	586	4270	1883	1639	209
Coolidge	2987	32	923	892	784	356
FDR	3376	82	1065	1058	818	353
IKE	3792	256	1314	981	836	405
LBJ	5045	517	1717	1126	1259	426
Taft	<u>3159</u>	<u>5</u>	<u>727</u>	<u>1298</u>	<u>837</u>	<u>292</u>
Total	33082	2121	12236	8689	7639	2397

Table. Percentage of Pitchers by Role by Era

Era	All	Closers	Middle Relief	Long Relief	Starters	Remaining
Reagan	N/A	10.5%	36.2%	23.6%	23.9%	5.8%
Clinton	N/A	6.8%	49.7%	21.9%	19.1%	2.4%
Coolidge	N/A	1.1%	30.9%	29.9%	26.2%	11.9%
FDR	N/A	2.4%	31.5%	31.3%	24.2%	10.5%
IKE	N/A	6.8%	34.7%	25.9%	22.0%	10.7%
LBJ	N/A	10.2%	34.0%	22.3%	25.0%	8.4%
Taft	N/A	0.2%	23.0%	41.1%	26.5%	9.2%

These tables reflect a growth of mediocrity in the Clinton Era as Middle Relievers make up nearly 50% of a pitching staff, whereas Starters are becoming a smaller and smaller group. Big league teams no longer just bringing up rookies as starting pitching solutions, but use them as "fill ins" for middle relief, bridging between the current starters and closers. To be sure, they are gradually moved into more team preferred roles, on the job training, but a vast disparity between other eras points to a difference in how teams are slotting their muscle.

Long Relief (which included part-time starters, injured starters, and half-season performers) shrunk. From the 1922 to 1991, *Starters and Long Relief* made up between 47.5% and 56.1% of a MLB pitching staff. This number has decreased to 41% in the Clinton Era. As a result, their value to teams increased; measured by innings pitched over the number employed in that role.

However, teams utilizing the bullpen well, with two or three men that consistently get those "big" outs, slamming the door, will be the *crème brûlée* of the league. And this team likely goes deep in the playoffs, if the team has any requisite hitting, and always, starting pitching. This held true for teams like the Oakland A's of the 1970s, and more recently, the 2007 Arizona Diamondbacks got to the playoffs due, in part, to a strong (and lucky) pen.

This model was employed by the Yankees, anchored always by "The Sandman", Mariano Rivera (bWAR 55.4). Rivera is second to Eckersley in WAR (63). The Eck started for half his career as an ace at just 20-24 years old.

Table. Percent of Game Pitched

Era	All	Closers	Middle Relief	Long Relief	Starters	Remaining
Reagan	N/A	10.5%	15.2%	15.2%	54.4%	4.7%
Clinton	N/A	6.5%	24.1%	16.3%	50.8%	2.3%
Coolidge	N/A	1.1%	8.5%	19.1%	55.8%	15.5%
FDR	N/A	2.5%	10.1%	21.0%	54.2%	12.2%
IKE	N/A	7.2%	11.6%	17.9%	52.2%	11.3%
LBJ	N/A	10.2%	11.8%	13.9%	57.8%	6.2%
Taft	N/A	0.2%	3.9%	23.8%	60.9%	11.2%

Table. Ratio of Innings Pitched to Number Employed in that Role

Era	All	Closers	Middle Relief	Long Relief	Starters	Remaining
Reagan	N/A	1.00	0.42	0.64	2.28	0.81
Clinton	N/A	0.95	0.49	0.74	2.66	0.96
Coolidge	N/A	1.06	0.27	0.64	2.13	1.30
FDR	N/A	1.03	0.32	0.67	2.24	1.17
IKE	N/A	1.06	0.33	0.69	2.37	1.05
LBJ	N/A	1.00	0.35	0.62	2.32	0.74
Taft	N/A	1.32	0.17	0.58	2.30	1.21

The value of a *starter* in terms of innings pitched has roughly been *2.2 to 1 over a closer*. However, we can see that in the Clinton era, closers value decreased to below *1.0* while starters are now at a premium (*2.66*). Course, as Starters (as a category) pitched less, in general, their perceived value increases, because of *this* definition of value: less innings requires more starters. Middle relief value, nearly non-existent in the Taft era (the role was not created until the 1930s), but now we see a considerable jump in value. What this means: Starter's innings are consumed by Middle Relief, Long Relief, while Closers became slightly less valued, tied to a 1-inning usage and win-only timing of game usage.

Table. HR% by Role by Era

Era	All	Closers	Middle Relief	Long Relief	Starters	Remaining
Reagan	9.09%	7.98%	8.89%	9.58%	9.19%	9.03%
Clinton	11.41%	10.46%	11.28%	12.48%	11.23%	11.02%
Coolidge	4.74%	3.12%	5.18%	4.81%	4.64%	4.89%
FDR	5.92%	5.46%	6.29%	6.06%	5.86%	5.66%
IKE	9.79%	9.11%	10.05%	10.02%	9.78%	9.62%
LBJ	8.88%	7.70%	9.10%	9.42%	8.86%	9.05%
Taft	2.13%	1.83%	2.71%	2.08%	2.08%	2.29%

One result of this analysis is that Closers in all eras were stingy about giving up home runs in comparison to their counterparts. Not a surprise to see when you understand that managers are unlikely to put a pitcher in that will continue to give up home runs at the tail end of the ballgame. The last two

generations, Reagan and Clinton, has seen plenty of *Failed Starters (Long Relievers)* that allow the long ball to fly out. For the first time, Closers in the Clinton Era allowed home runs percentage above 10%. Is this attributable to hard-throwing closers versus swing-for-the-fences true outcome hitters. Call it *The Reggie Jackson syndrome*: Everyone wants to be a hero in the new band box stadiums.

Table. Starter Usage by Era

Starters	Avg. GP	IP	IP/Game	GS Avg.	Relief Appearances
Reagan	30.68	190.99	6.22	28.78	1.90
Clinton	29.19	176.74	6.05	28.03	1.16
Coolidge	34.68	218.63	6.30	27.87	6.81
FDR	32.40	204.37	6.31	26.78	5.63
IKE	33.55	203.96	6.08	28.35	5.20
LBJ	33.51	211.74	6.32	30.42	3.09
Taft	35.94	238.27	6.63	28.48	7.46

Again, Starters lose innings per season; per game, and also fewer games started, on average. Relief Appearances (RA) by starters are a rarity. The loss of quality innings pitched out of the bullpen, by starters, taxes guys shown to be the least effective; and most prone to failure.

No surprise, potentially the best era for pitchers (**LBJ: 1964-1977; see Appendix: Top 100 Teams by WAR**) reflects starters were in an average of **30.42 games for 211 innings**, counting in three relief appearances. The top relievers generated a 2.92 ERA (below) even beating the 'dead ball' Taft era.

Table. Earned Run Average by Era and Role

Era	All	Closers	Middle Relief	Long Relief	Starters	Remaining
Reagan	3.87	3.06	4.12	4.53	3.76	3.88
Clinton	4.41	3.36	4.51	5.24	4.22	4.42
Coolidge	4.16	3.64	5.30	4.69	3.85	4.07
FDR	3.92	3.45	4.85	4.33	3.63	3.81
IKE	3.92	3.26	4.67	4.48	3.64	3.95
LBJ	3.57	2.92	4.15	4.22	3.40	3.61
Taft	2.99	2.95	4.35	3.41	2.75	2.93

The two eras that saw the greatest surges in offenses (Coolidge & Clinton), saw it in the same areas. Earned runs against starters, failed starters, middle relief, and remaining pitchers are indicative of the across-the-board failings.

For 28 years, from 1936 to 1963, the earned run average in baseball was 3.92. For the same time frame, full-time Starters had nearly identical Earned Run Averages (3.63.)

The table below reflects that very few pitchers adapted well to the dual concept of usage out of the bullpen to go along with starting pitching duties. In earlier times, Taft and Coolidge, specifically, many more pitchers amass 4 or more saves (when harder to get by rule) to go along with over 20 starts in a season. However, a few excelled at this usage post-WWII as relievers became more defined as a role.

HOF Lefty Grove came out of the pen, amassing 51 saves and 31 wins from 1925 to 1933 under manager Connie Mack. Grove was the stopper in the 1929 World Series, pitching both games he appeared in out of the pen against the right-hand heavy Chicago Cubs in securing the World title for the A's.

Dizzy Dean pulled off an amassing feat in 1936: leading the league in complete games (28), innings pitched (315) and saves (11) while finishing second (24) behind "The Meal Ticket", Carl Hubbell, in wins (at 26.) Hubbell was no stranger to the bullpen, leading the league in saves (8) and ERA (2.30) in 1934.

After this era (1908-1935), bullpen work for starters never reached the same levels, but two men did achieve stardom out of the pen as 'converted' quality starters.

Dennis Eckersley was a hyper-efficient model as a converted starter and this led to a HOF induction. The first to ever amass over 150 wins and over 350 saves, the 'Eck' utilized impeccable control to stifle offenses in the ninth. Very few matched his ability to keep runners off the base paths as an 18-1 K/BB ratio reflects during his time as a Oakland A's closer.

For over 15 years, Atlanta's John Smoltz, a #1 starter on most any pitching staff, adapted well to closing after injury. Over 4 seasons, he made the jump back and forth, demonstrating what ace stuff does out of the pen. In 2007, he surpassed the 200-win barrier to go with 150 saves in a career. His ticket to the HOF is equally secured.

In recent years, utilizing hard-throwing or specialty-pitch closers that are new to the big leagues (less than 3 years) is more rule than exception. The cost to acquire top-end closers was \$9-12 million (circa 2011), and rising, for 1-inning outings, 65-70 times a season at max. The ability to convert over young minor league arms with mediocre starter abilities to Roloids Relief Men require usually:

- Throwing over 95 MPH, locate it well, miss bats, ultra-high strikeout rates
- Throw a plus 2nd pitch (usually a hard slider, cut fastball, split finger fastball, or a change) that too will neutralize batters
- Control 3 pitches; just not extremely well on any of them with a plus fastball the given (either that, or a great change-up, +10-15 MPH differential between change and fastball, Trevor Hoffman's *Bugs Bunny* change-up for instance)
- Handles pressure well in tight situations, after proving themselves as middle relievers (aforementioned grooming process for pitchers, Cardinals do this)

This is more effective and cheaper way to get power arms up from the minors, who may never pan into 7 inning starters. However, many that get put in this pipeline will wash out. The graphic below reflects the number of closers that are arbitration eligible compared to non-arbitration closers shows experience mattered in the *near* past. But as teams try to get younger arms in the pen (starting in 2005-2006), *the young guns* get to the spotlight quicker.

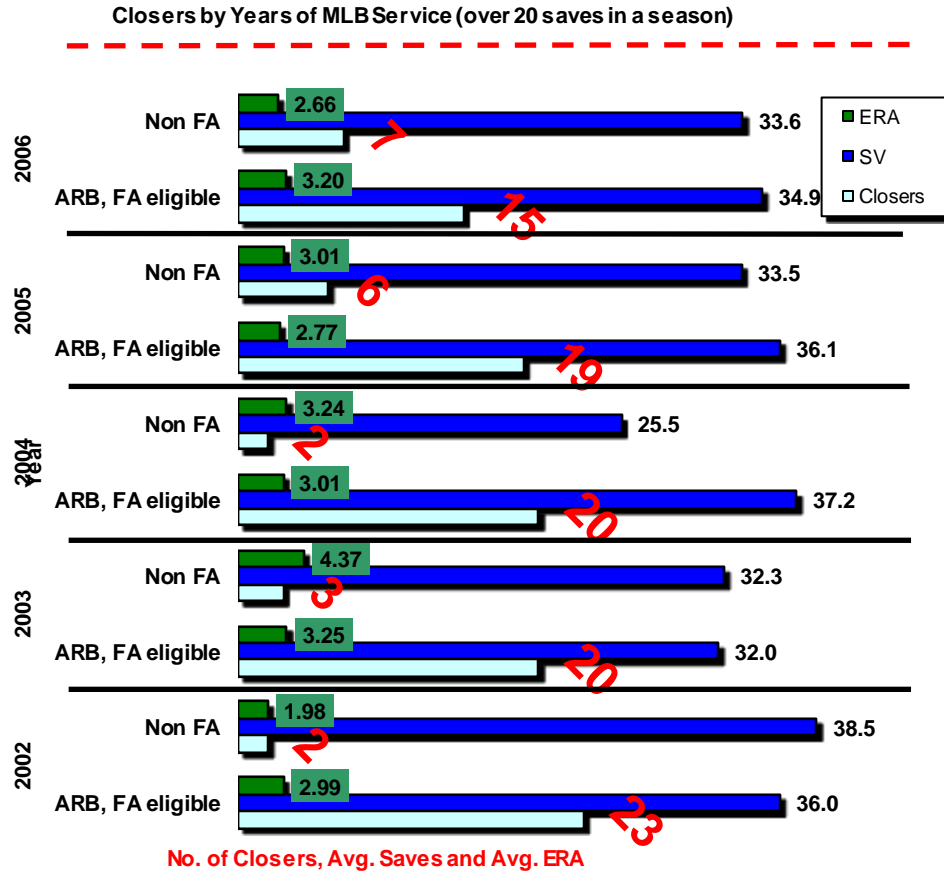
Former Red Sox Jonathan Papelbon, was *scheduled* to be starter, converted expertly out to the bullpen from 2006-2010. Now: Secured a contract with Philadelphia for \$12.5 million per year for 2012, and beyond, and has struggled.

The Oakland A's drafted Huston Street in the 1st round of 2004 MLB draft. In 2005, at only 21, he was in the majors closing games, with his best WAR (2.9) to date in that year. Street threw 3 pitches: fastball (89-91), slider (84-86) and change (79-83) for strikes, with his slider generating the best runs above average according to Fangraphs (Baseball Info Solutions 2013).

Craig Kimbrell, drafted at 19, appeared in the majors by 21. At 22 and 23, he set the all-time saves record for rookies at 46 (breaking Papelbon's *old* rookie record), while recording an amazing 15.4 K/9IP, to go along with a solid WAR (2.4). Kimbrell is your classic closer: fastball (95-99), with a spike or knuckle curve (84-88), with both being 'out pitches' by strikeout rates.

Table 2.2.8. Great Combo Pitchers in History (Starter/Closers)

Era	Year	Name	GP	GS	CG	IP	Wins	Losses	SV	ERA	IP/G	HRA	SO	BB	BFP
Taft	1911	Mordecai Brown	53	27	21	270.00	21	11	13	2.80	5.09	5	129	55	1108
Taft	1912	Ed Walsh	62	41	32	393.00	27	17	10	2.15	6.34	6	254	94	1564
Taft	1913	Chief Bender	48	21	14	236.67	21	10	13	2.21	4.93	2	135	59	975
Taft	1913	Larry Cheney	54	36	25	305.00	21	14	11	2.57	5.65	7	136	98	1255
Taft	1915	Tom Hughes	50	25	17	280.33	16	14	9	2.12	5.61	4	171	58	1069
Taft	1916	Bob Shawkey	53	27	21	276.67	24	14	8	2.21	5.22	4	122	81	1064
Taft	1917	Jim Bagby	49	37	26	320.67	23	13	7	1.96	6.54	6	83	73	1266
Taft	1920	Pete Alexander	46	40	33	363.33	27	14	5	1.91	7.90	8	173	69	1447
Coolidge	1926	Lefty Grove	45	33	20	258.00	13	13	6	2.51	5.73	6	194	101	1072
Coolidge	1927	Lefty Grove	51	28	14	262.33	20	13	9	3.19	5.14	6	174	79	1106
Coolidge	1929	Firpo Marberry	49	26	16	250.33	19	12	11	3.06	5.11	6	121	69	1028
Coolidge	1930	Lefty Grove	50	32	22	291.00	28	5	9	2.54	5.82	8	209	60	1191
Coolidge	1932	Lefty Grove	44	30	27	291.67	25	10	7	2.84	6.63	13	188	79	1207
Coolidge	1933	Carl Hubbell	45	33	22	308.67	23	12	5	1.66	6.86	6	156	47	1206
Coolidge	1934	Dizzy Dean	50	33	24	311.67	30	7	7	2.66	6.23	14	195	75	1291
FDR	1936	Dizzy Dean	51	34	28	315.00	24	13	11	3.17	6.18	21	195	53	1303
FDR	1940	Bob Feller	43	37	31	320.33	27	11	4	2.61	7.45	13	261	118	1304
FDR	1937	Cliff Melton	46	27	14	248.00	20	9	7	2.61	5.39	9	142	55	1004
FDR	1943	Dizzy Trout	44	30	18	246.67	20	12	6	2.48	5.61	6	111	101	1019
IKE	1951	Sal Maglie	42	37	22	298.00	23	6	4	2.93	7.10	27	146	86	1210
IKE	1951	Mike Garcia	47	30	15	254.00	20	13	6	3.15	5.40	10	118	82	1066
IKE	1952	Allie Reynolds	35	29	24	244.33	20	8	6	2.06	6.98	10	160	97	1000
IKE	1952	Bob Lemon	42	36	28	309.67	22	11	4	2.50	7.37	15	131	105	1252
LBJ	1964	Dean Chance	46	35	15	278.33	20	9	4	1.65	6.05	7	207	86	1093
LBJ	1965	Sam McDowell	42	35	14	273.00	17	11	4	2.18	6.50	9	325	132	1116
LBJ	1968	Stan Williams	44	24	6	194.33	13	11	9	2.50	4.42	14	147	51	796
Reagan	1988	Tim Lincecum	36	27	4	179.67	12	6	4	2.91	4.99	8	152	51	719
Reagan	1986	Scott Garrelts	53	18	2	173.67	13	9	10	3.11	3.28	17	125	74	717
Reagan	1980	Jerry Reuss	37	29	10	229.33	18	6	3	2.51	6.20	12	111	40	907
Clinton	1992	Curt Schilling	42	26	10	226.33	14	11	2	2.35	5.39	11	147	59	895
Clinton	2002	Tim Lincecum	45	15	0	163.33	11	5	3	2.81	3.63	15	134	51	657



Pictured above is Rich "Goose" Gossage (Peter Roan) and Graph of Modern Closers (based on Arbitration Eligibility). The Goose was the stopper for the 1978 Bronx Zoo Yankees, winning the Rolands Relief Man of the Year.



John Smoltz: Aside from a top pitcher in baseball, he is also a scratch golfer. With teammates Greg Maddux and Tom Glavine, they made up the best golfing and pitching trio to play Georgia's links. John won the Rolands top award in 2002. (Photo: With permission of John Adams.)

The Most Crucial Time of the Game: Clutch Relieving

(The following slightly contradicts value exploration – thus, is interesting.)

Unless you've never watched a ballgame, the points where base runners are on, a one-run lead, no one is out, and the starter is gassed are the times when they call for the bullpen ace. His job is to manage to escape the mess without damage, and seal the win for the team. He will usually have a penchant for the dramatic, sweat profusely, or have a personality quirk or two, but for the times he is successful, those things are overlooked, unless you are his enemy.

In these moments, called "crucial", a reliever will have to harness his stuff immediately, or fail miserably. This fits the instantaneous McDonald's like mode of America: we want it right now, without any delays. Maybe too this should be called the "crucible of clutchness" because of pressure that is applied and ability to perform these miracles define clutch.

Tom Tango, considered a baseball genius from most accountings, designed the idea of a "leverage index" (Crucial Situations 2006). His work was based off of 1970s win expectancy charts and data created by the Mills Brothers (Tango, Crucial Situations: Using Win Expectancy to determine high-leverage situations 2006). The game *state*, that of Markovian and statistical probabilities inherent in game theory, reflect that certain odds take place, based on outs, runners on bases, overall score, hitter, ballpark, and thus creating those leverage points.

Eldon and Harlan Mills wrote *Player Win Averages* in 1970, stating:

"We don't really care how a runner reaches first, for instance. The fact is, he is there and the game has progressed to that point. What happens next from that point is what we are interested in, and from that next point, and the following point-[onward] to the end of the game...

We can compare this whole process we have just described to another field. A life insurance company knows the life expectancy of a 55-year-old, married carpenter who lives in Milwaukee; we know the win expectancy of team trailing by two runs in the bottom of the sixth with one out and a runner on second base. The life insurance company knows how much premium to charge from its actuarial tables, which cover every age, sex, field of work and so on. We know how much to charge every player action - every 'what' - from our chance of winning tables, which cover every situation - every 'when' - possible in a game." (Tango, *Player Win Averages* 2006).

So really, the concept of clutch ties more to predictable outcomes within the range of the talents of the pitcher, in this case. The ability of a premier player, or any player, to successfully navigate these moments creates a higher value for their work than is ordinarily attributable to lesser lights. But assigning value, or win expectation, creates a whole prospect of what a reliever (or a starter in that late-game situation) is really worth.

Tom Tango bluntly states, "It is a very simple concept—what is the chance of winning the game given a certain set of variables? At a minimum, the variables include the inning, score, base, and out. At a maximum, you'd include everything under the sun, such as the identities of the players, the park, the climate, the

count, tendencies of managers, and a host of whatever you can think of. Like fan interference. Or managers' insistence of sticking with a tired pitcher. Or psychological trauma (Tango, *Crucial Situations* 2006)."

His crucible for exploration was the meltdown on October 15, 2003 by the Chicago Cubs in game six of the playoffs. The probability of the Cubs winning at the beginning of the 8th inning: 93.6%. The Gonzalez error was an 18.4% swing in percentages; Derrek Lee's double, thereafter, a 36.3% move in chance that swung the balance completely to the Marlins (*Crucial Situations* 2006). Kyle Farnsworth relief then came just a bit too late.

Game State Examples (From: http://www.insidethebook.com/li.shtml)										
Top of Inning 7		Run Differential* & Leverage Index								
1 2 3	Outs	-4	-3	-2	-1	0	1	2	3	4
___	0	0.2	0.4	0.7	1	1.5	1.7	1.4	1	0.6
1__	0	0.4	0.6	1	1.6	2.4	2.7	2.3	1.7	1.2
2	0	0.3	0.5	0.8	1.2	1.9	2.3	2	1.5	1.1
__3	0	0.2	0.4	0.6	1	1.5	2	1.9	1.5	1.1
12_	0	0.4	0.7	1.1	1.8	2.7	3.4	3.2	2.6	1.9
1_3	0	0.3	0.5	0.8	1.3	2	2.8	3	2.5	1.8
_23	0	0.3	0.5	0.8	1.3	2	2.5	2.6	2.3	1.7
123	0	0.4	0.6	1.1	1.7	2.6	3.5	3.9	3.6	2.8
Top of Inning 9		Run Differential* & Leverage Index								
1 2 3	Outs	-4	-3	-2	-1	0	1	2	3	4
___	0	0.1	0.2	0.3	0.7	2.4	2.9	1.6	0.8	0.4
1__	0	0.1	0.2	0.5	1.1	3.4	4.6	2.9	1.6	0.8
2	0	0.1	0.2	0.4	0.8	2.6	3.7	2.7	1.5	0.8
__3	0	0.1	0.2	0.3	0.7	2.3	3.1	2.9	1.6	0.8
12_	0	0.1	0.3	0.6	1.2	3.6	5.3	4.4	2.9	1.6
1_3	0	0.1	0.2	0.4	0.8	2.3	4.2	4.6	3	1.7
_23	0	0.1	0.2	0.4	0.8	2.4	4	4	2.9	1.6
123	0	0.1	0.2	0.5	1	2.9	5.2	5.7	4.6	3.1

* -4: Home Team Down by 4 runs

The average leverage situation calculated to a 3.46% swing from all the random events that take place. However, Lee's double created a much higher leverage factor, and the most pressure-filled moment.

In *The Book*, Tango et. al. developed the leverage index (above), reflecting the importance of such situations, and the implications if a manager does not use whatever weapons at his disposal to squelch rallies with runners on. In the example above we see leverage factors in the 7th and 9th innings with no one out, and various run scenarios to the left and run differentials from the home team's point of view.

So, what is the value of this index and this simulation-generated calculation?

It gives rise to a proper valuation of what a reliever is, or has done for a team throughout a season. Or, moreover, in what context the reliever is operating in. As Baseball Reference enforces, "you'll begin to realize that the underlying run environment (think 1968 vs. 2000) can dramatically affect the win expectancies and run expectancies. A three run lead for the Pirates in 1968 where teams were scoring 3.42 runs per game looks a lot different than a three run lead for the Royals in 2000 when teams were scoring 5.14 runs per game (Win Expectancy (WE) and Run Expectancy (RE) Stats 2013)." More runs available (league environment), the more likely a team can or will come back. "We also need to consider the ballpark environment as Coors Field and Petco Park are nearly as different as 1968 and 2000" (Win Expectancy (WE) and Run Expectancy (RE) Stats).

Tango explored these ideas further in regards to several closers of noteworthiness: Bruce Sutter, Goose Gossage, and Lee Smith. His idea was to prorate the batters faced based upon the leveraged situations closers faced in their careers as the stoppers out of the pen.

"Bruce Sutter's Leverage Index (LI) was 1.90. That is, Sutter facing 500 batters is the equivalent of a typical pitcher facing 950 batters." After Tango's adjustment to Sutter's numbers, he found pitchers that profiled similarly to Sutter's career, resulting in Mike Scott, Ron Guidry, Andy Messersmith and Jose Rijo as comparable pitchers, statistically. "Goose's LI is only 1.62. Remember, his games as a starter reduces his overall leverage index, but increases the total number of innings." David Cone, Mark Langston, Doc Gooden, and Fernando Valenzuela were the candidates that matched up. For Lee, "unfortunately, I only have access to Smith's play-by-play records until 1990. His LI until then was 1.73... (Tango, *Relievers Leverage for the Hall of Fame: Bruce Sutter, Lee Smith, Goose Gossage and Win Expectancy 2006*)" He too matched close to Dave Cone and Messersmith.

What does this tell us? That, the very best, or steadiest closers from the Reagan era, were fairly close to being a number two pitcher on most teams, stuff wise. Their ability to close out games matched well, it seems, to that level of talent. However, further analysis, as Tango enforced, might show that the highest leveraged situations for these closers were less successful, whereas, mid-level scenarios they completed much easier. (Eight years since *The Book*— and much more data is available to look at — as **Volume II**: LBJ Era hopes to cover.)

The final analysis: "The impact of an 80-inning reliever is no more than that of a 160-inning starter. And that's how we should view them (T. M. Tango 2006)". Nevertheless, we view and value them based on the instantaneous perceptions. As these skilled men go in, night in and night out, to face down potentially the most feared batters in close games, we marvel at their results.

Usually, there is no time to setup a batter in one plate appearance; you must go at the hitter. You expect runners on base to get huge leads. The stadium will rock up to a fevered pitch. Sweat, in the moment, is evident.

Managers will show little patience...and not for very long. (A *Yogism*?)

A closer must produce results under a harsh spotlight. (Media – online (bloggers) is more brutal since the advent of Twitter and Facebook.)

And failure is rewarded never. (Bags packed before you take a shower?)

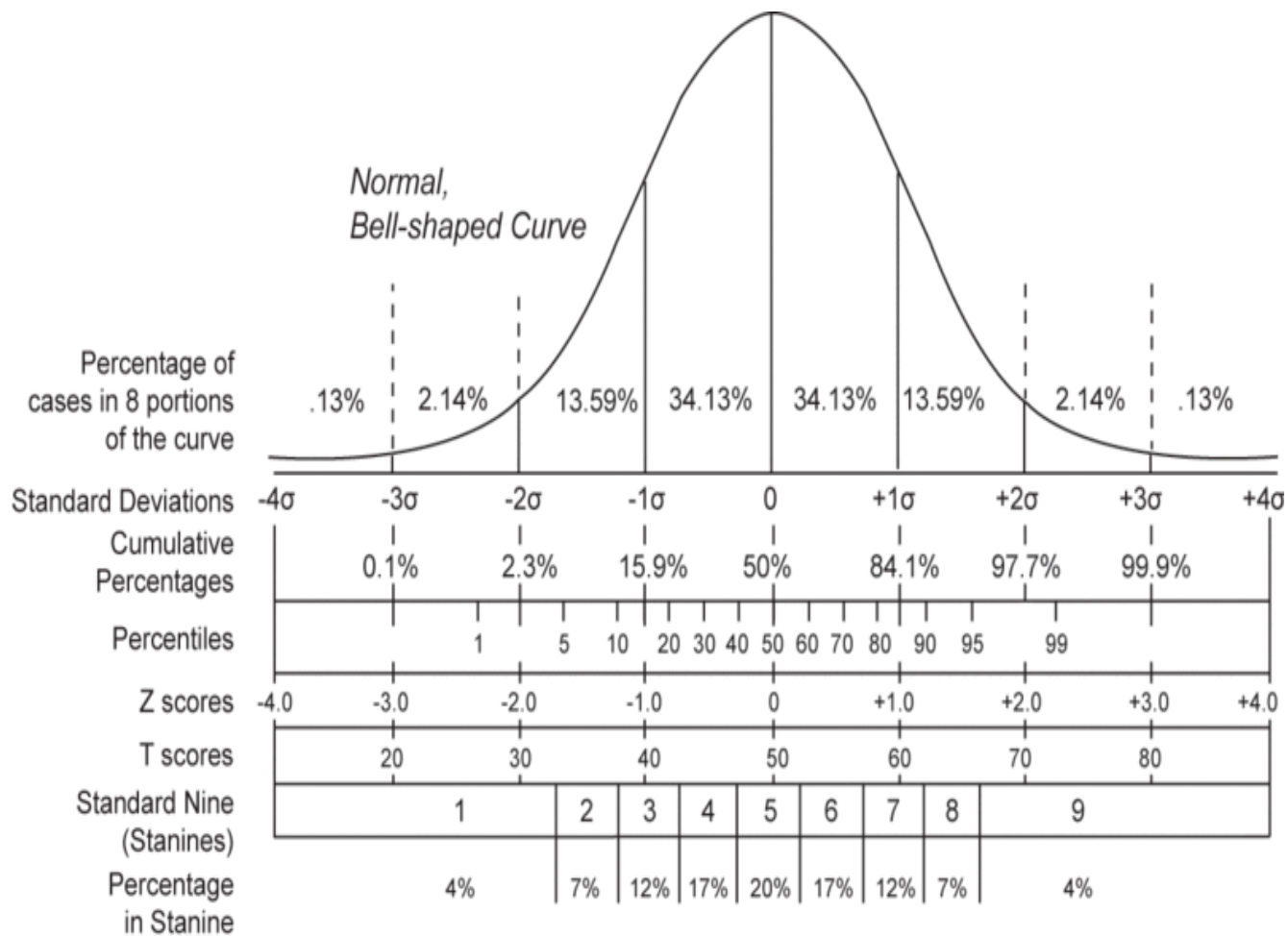
Side Slab: An Evolutionary Word, Distribution of Data, and Merkle

First, this author is no statistical genius. No savant (just idiot). Intellect above replacement (IAR) probably is fringy 'every day starter' for what is imparted so far in this book. Greater minds and philosophers have tackled immensely more important subjects than baseball, such as Stephen Jay Gould. The Harvard biologist, geologist, and zoologist is credited with the *Theory of Punctuated Equilibrium* where evolutionary change followed a variable change rate, from stasis to gradual to rapid switches over the march of time on Earth. (To really simplify the meager understanding of this important theory – as the man himself would cringe at the bastardizing of a unique and important idea fostered through years of his study. Therefore, apologies to the departed Gould. He was a great man with useful ideas in many arenas, including baseball.)

This theory though is applicable to baseball. There are points where drastic changes are prevalent, such as the ball change in July 1919. As will show, the best pitching in the Taft Era came at the very top of the era – 1908 through 1910. In the hitting section, the junctures of the presidential eras showed where offenses took off, or declined from before. This applies too in pitching as the evolutionary battle between sluggers and gasmen came drastically to the fore in 1930; but, it also has periods of relative stasis (1936-63) and flows from era to era (1978-2005) where bullpen sizes and usage modified almost imperceptibly, but significantly.

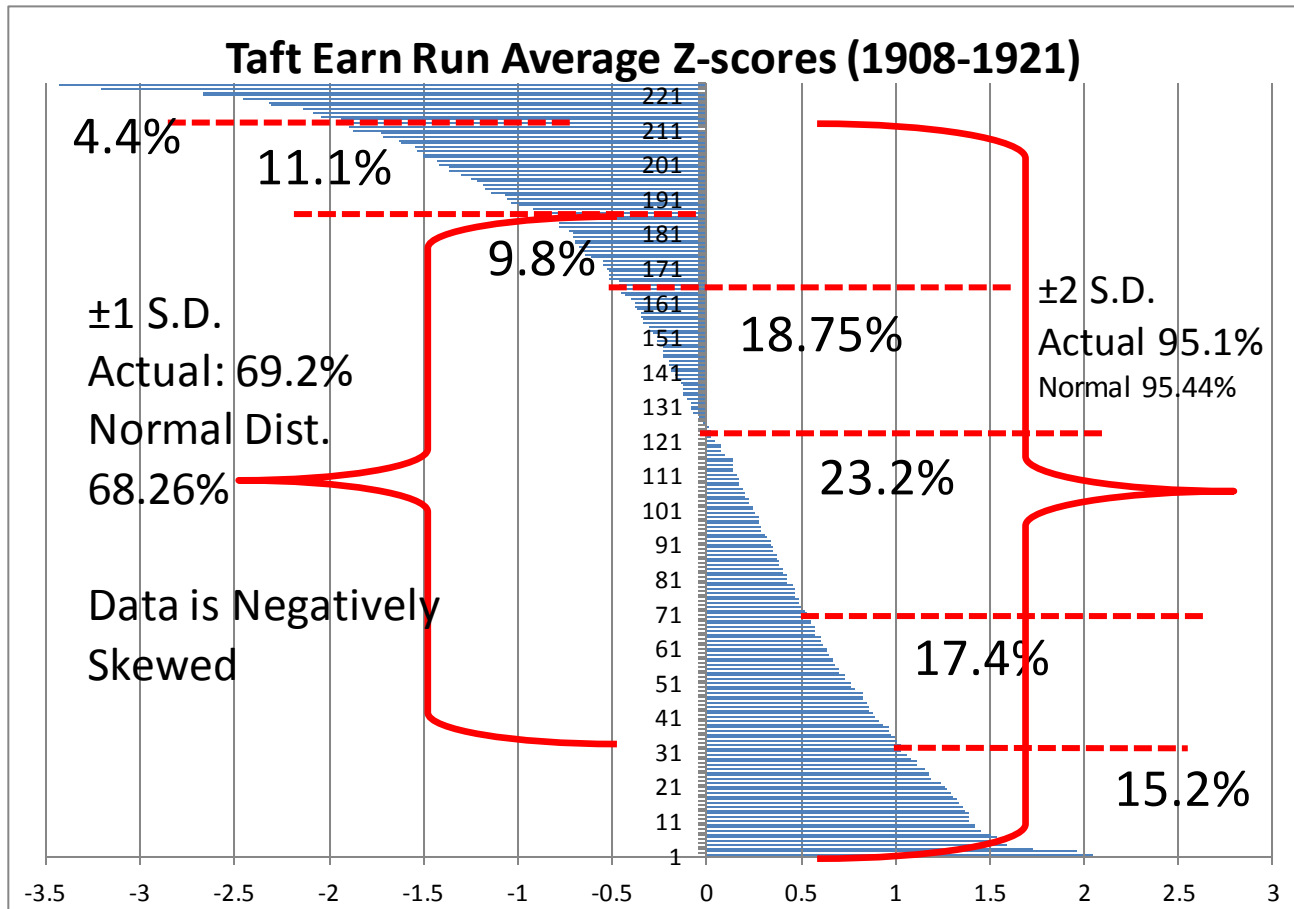
A good way to reflect this is by looking at the distribution of data during an era. The following shows but one aspect of analysis that will be employed from here on out in this book. Other authors (Rob Neyer, who worked for Bill James), skillfully employed this method (along with co-author Eddie Epstein), forming the basis of their analysis in their *Dynasties* book.

Standard deviation scores (z-scores) provided the backbone to that analysis. In putting a team or player on a normalizing scale, the cream rose to the top, driving conversations about the best of the best ever. This method is used throughout our educational systems, and also, in the baseball world as the graphic below reflects a few of the scales used to rate ability.



The various scales are tied into a normal distribution of independent data sets. This distribution is linked to a central limit theorem devised by statisticians that explain results of naturally occurring phenomenon by defining the independence of data and well-defined means and variation. Z-scores just measure distance from a data sets' average divided by the standard deviation of the particular data set.

T scores (20-80) could apply to scouting scores in baseball for the various tools: batting, power, speed, arm, and glove skills. To be rated at or above a 70, places that skill at a 98% percentile among one's peer group: in this example, all other professional players. Meaning such a tool is elite; and gets drafted players noticed by scouts, if they have such skills. (Washington Nationals pitcher Stephen Strasburg came out with an '80' tool: fastball. In 2013, his 'average' fastball velocity sat at 95.4 MPH as of June 2013. New York Met Matt Harvey ranked 3rd in majors at 94.9 MPH on his number one pitch. He was an '80' pitcher until injury forced Tommy John surgery.) But back to distributions and Taft. The graph below placed all NL/AL teams ERA (224 data points) in the Taft era (1908-1921) on a Z-scale running from -3.5 to +3. The results are below.



Here, we see that earned run averages a hundred years ago were indeed normally distributed, though negatively skewed to lower values. Only the 1909 Chicago Cubs cracked the +2 S.D. mark of (2.05). The 1908 Chicago White Sox may however be the best pitching staff by these numbers. Their controllable outcomes placed them as the only +2 S.D. level team by **FIP (Fielding Independent Pitching)**.

The nine best ERA scores came from 1908 and 1909 teams (below table). Again, showing skewed data reflected a unique departure from the overall era standards for ERA. So, the first baseball change, in 1910, altered results.

As to the 1908 Sox, the FIP sabermetric statistic was developed in the early 21st century (by Voros McCracken) as a more accurate way to measure a pitcher's performance based on what he can control in a baseball game against his actual ERA, which is influenced by BABIP, luck, and better fielding. In short, a pitcher can:

- Control the walk rate of batters
- Keep the ball in the yard
- Strikeout batters
- Not plunk hitters
- Throw lot of innings and get ground balls

The resulting equation for this statistic is:

$$FIP = ((13*HR)+(3*(BB+HBP))-(2*K))/IP + constant \text{ (Fangraphs.com 2013)}$$

As a result, basically, throwing home runs is obviously really bad for an ERA, walks and hit batters get you in trouble, while strikeouts only alleviate those walks 2/3 as well. The constant places FIP on an ERA adjusted scale which is determined by the league FIP rate compared to the league ERA rate. Then adjust accordingly for each individual pitcher or team ERA (weighted on the latter).

Going back to our discussion of the best of the early Taft Era, here is the Top 10 Z-scores by teams in the Taft era:

Season	Team	W	ERA	FIP	BABIP	ERA Z-score	FIP Z-score
1909	Cubs	104	1.74	2.08	0.248	2.05	1.69
1910	Athletics	102	1.79	2.23	0.254	1.96	1.40
1909	Athletics	95	1.93	2.08	0.251	1.73	1.69
1908	Naps	90	2.02	2.17	0.250	1.59	1.51
1910	White Sox	68	2.03	2.17	0.257	1.57	1.51
1909	White Sox	78	2.05	2.07	0.259	1.54	1.71
1909	Pirates	110	2.07	2.31	0.251	1.50	1.24
1908	Phillies	83	2.10	2.31	0.251	1.45	1.24
1908	Pirates	98	2.12	2.45	0.244	1.42	0.96
1916	Robins	94	2.12	2.51	0.253	1.42	0.84
1908	Giants	98	2.14	2.02	0.263	1.39	1.81
1908	Cubs	99	2.14	2.27	0.249	1.39	1.32

Aside from the White Sox, and Phillies, every other team did well to have great pitching. The 1908 National League was crazy. Three teams within a whisker of each other, fighting it out until the very end of the season, just to be convoluted by a league ruling that came out of the base-running faux pas by 19-year old rookie 1st sacker Fred Merkle.

Merkle, amassed over 2,700 professional hits, was the original Bill Buckner (who played 1st with 2,715 hits). Both received more blame than either deserved, but fan focus has never been one of logic or rationale in its distribution.

When September 23, 1908 began, the Giants were 87-50; Cubs 90-53; and Pirates 88-54. The Giants played the Cubs to a 1-1 deadlock, with the Giants playing small ball – single by Herzog, an error moved him to second, sacrificed over by catcher Roger Bresnahan, then singled in by Mike Donlin – while the Cubs scored on an inside-the-park dinger by Joe Tinker. The Giants relied on Christy Mathewson to get to the ninth. Jack Pfiester went the route for the Cubs.

Bottom of the ninth, Giants have McCormick on third, Merkle on first, and Al Bridwell singled to center, scoring McCormick as long as Merkle touches second base. But he didn't – or at least – was lackadaisically errant before Joe Tinker (or Johnny Evers) could corral the incoming baseball, legally, for a force play, as

Giant 3rd base coach Joe McGinnity got a hold of the game ball for New York (as per custom *The New York Times* noted), but then tossed it aside. (Not per custom.) Or, a fan, got involved, tossed the ball aside, leaving the Cubs to think quickly, and New York to scrambled Merkle back to the base he needed to touch.

So, very plausibly, Johnny Evers improvised with another ball, while a 25,000 strong raucous crowd rushed the field, the umpires lost all control (Hank O'Day at home plate soon ruled Merkle out – then called a tie game, for darkness, in this Coogan's Bluff chaos). Protests ensued from both teams.

The season ended with New York and Chicago tied 98-55, but for this game. The game, by today's reset standards, starts over at 1-1, top of the tenth, with the rosters restored as a game in progress. But the National League Board of Directors, and Harry Pulliam, NL President, decided for a full replay. The NL Board even offered a 5-game series to New York's McGraw, but he declined, figuring his pitching god Mathewson was all he needed in a winner-take-all match. (Mathewson had 37 wins, 390 innings pitched, to support that fact.)

The results: Chicago won 4-2. New York scored in the bottom of the first, or tenth, by prior game reset. (New York did not employ the same lineup.)

Cubs win their last world series to date over the Cobb-led Tigers.

Harry Pulliam, a congenial sort, started out with the Pittsburgh Pirates, took his own life the next summer at age 40. Speculation placed the Merkle ruling as the proximate cause of his ongoing depression and suicide. He had however for years allowed the stress-inducing ownerships of Freedman and Herrmann to erode his once amicable demeanor.

Present day: On Clark Street, in Chicago, Merkle's Bar and Grill operates a nice establishment with Merkle's Beer Hall of Fame contest for those able to down 100 different types of beer in 100 days, proving such tests are a noble and expensive teacher. And no one will ever get to any base after drinking those 100 beers.

The Chicago Cubs are 106 seasons deep into this lesson.

Best Pitching Teams by Era

During each era, team pitching is uniquely important to the overall ability of any team to win games. A league-leading ERA or Strikeout-to-Walk Ratio brought the best teams towards championship heights.

Similar to the top 5 team on-base percentage and slugging average section, these two statistics are linked to changes in the game of baseball reflecting how play, adjustments made, led to competing for their league pennant or a World Series title.

Note: Bullpen size is tied to 20 or more appearances (outside of starts) and total saves is the amount those men obtained in that sometimes thankless role. CG (Complete Games), SHO (Team Shutouts) and HRA (Home Run allowed) are also listed for comparisons.

Since it is known the top 10 of Taft is skewed to pre-baseball modification side, this era will start with 1911 season.

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio Taft Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Taft	1916	Brooklyn Robins	2.12	1.70	94	96	22	9	2	2	2	24	1201
Taft	1918	Washington Senators	2.14	1.28	72	75	19	8	2	0	0	10	1021
Taft	1917	Chicago White Sox	2.16	1.25	100	78	21	21	4	1	9	10	1236
Taft	1915	Philadelphia Phillies	2.17	1.91	90	98	20	8	2	2	0	26	1161
Taft	1918	Chicago Cubs	2.18	1.59	84	92	21	8	3	1	4	13	1050

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Taft	1911	New York Giants	2.69	2.09	99	95	19	13	3	1	5	33	1267
Taft	1913	New York Giants	2.42	2.07	101	82	12	17	3	1	5	38	1276
Taft	1916	New York Giants	2.60	2.06	86	88	22	12	3	2	4	41	1267
Taft	1916	Philadelphia Phillies	2.36	2.04	91	97	25	9	3	2	5	28	1238
Taft	1916	Boston Braves	2.19	1.98	89	97	23	11	3	1	5	24	1206

The 1916 Brooklyn Robins, fueled by Jeff Pfeffer, Rube Marquard, Sherry Smith, and A's castoff, Jack Coombs, combine for a decade best 2.12 ERA. All were between 25-30 years old: the peak performance age of ballplayers (see: Macrosabermetrics). Notable Robin players: Casey Stengel and Fred Merkle.

Philadelphia's other team for seventy-five years, hit pay dirt with Erskine Mayer and Pete Alexander leading the charge in 1915 and 1916, each in their primes at 25 and 28 years old. The Phillies starting lineup was cobbled together through various trades and minor league purchases. OF Gavvy Cravath, SS Dave Bancroft, 1B Fred Luderus, OF/1B Possum Whitted, 3B Milt Stock, OF/1B Dode Paskert, and OF Beals Becker all came aboard through this route.

Their best player, Alexander, purchased by the Phillies for \$500 from Syracuse after he sliced up the New York State league in 1910, was akin to the "player to be named later" behind George Chalmers, who was obtained for \$3,000. Pete Alexander, counterpointed to his formidable peers – Johnson and Mathewson who looked the part of determined and dominating – whereas, Alexander had a "busher" mound appearance that belied his pitching greatness.

In 1915, Alexander won the triple crown of pitching: 31 wins, 1.22 ERA and 241 strikeouts. He repeated this feat in 1916. And 1917. Alexander piled up 36 shutouts over these three seasons while 50% of his starts were in a bandbox known for stinking baseball never buoyed to victory by the advertised soap. Philadelphia lost to the Red Sox, Babe Ruth, and never touched glory until 1980.

1918 Washington Senators ran the Big Train and a boxcar of lefties to the mound in the hopes they could caboose properly a high speed rail that Johnson threw. However, Yingling, Brennan, Rees, and Altrock, lefties all, failed.

Stan Rees got a month in the majors, and died at only 38. Nick Altrock had a long career, including three years with the Hitless Wonders White Sox of the Aughts. But after 30, Altrock won only 8 games in the MLB. At 41, he put one victory on the Senators sheet. Earl Yingling was a serviceable sort in the bigs, a

modestly successful minor leaguer, tallying 146-106 record, most notably in the American Association for Minneapolis in the 1920s. Yingling could hit a bit too – played outfield as needed. Ad Brennan ended his MLB career in July of 1918. Brennan was a Phillies mainstay during Cleveland’s first years there. Brennan never plated a ball thereafter.



In what would be their last World Series victory until 2005, the 1917 Chicago White Sox employed many of the same faces as the 1919 World Series team. Eddie Cicotte, Red Faber, Lefty Williams, and Reb Russell all won 15 games in 1917 – with Cicotte, the ace of both the teams.

Closer Dave Danforth appeared in 50 games, 41 out of the pen, tossing 173 innings. 50 of those innings were amassed in starts, leaving an average of 3

innings per relief appearances. His last regular season relief appearance was a 7.1 inning loss as he led the league in games finished at 26 out the pen.

Once again, during Taft, the usage of **bullpen men** was relatively rare, with only 1 man usually obtaining 20 relief appearances. The difference between team saves (team SV) and bullpen saves (total SV) is fairly significant. Most teams utilized 'off starters' to accomplish the task of closing out games. (Again, guys like Iron Joe McGinnity tossed both halves of a doubleheader.)

In 1919, Eddie Collins (pictured above) was playing 2nd base for the Sox. He led the 'other group' of players (HOF catcher Ray Schalk included) that played to win against Cincinnati. (Courtesy of the Bain Collection, Library of Congress.)

(8 Black Sox: Eddie Cicotte, Claude 'Lefty' Williams, Fred McMullin, Buck Weaver, Swede Risberg, Happy Felsch, Chick Gandil, and Joe Jackson.)

The New York Giants appeared several times as the best staffs for strikeouts; led by the best pitcher of the early Taft era: Christy Mathewson. From 1903 to 1914, Mathewson topped the NL in wins four times, ERA five times and strikeouts five times, with the pitching triple crown in 1908. The 1911 and 1913 New York Giants lost the World Series to the \$100,000 infield of the Philadelphia A's Connie Mack. (Who then dismantled that dynasty by 1915, finishing last at 43-109, during the Fed League turmoil. Mack was 30 years into baseball in 1915; and had 35 plus more to go.)



For Christy, he was done dominating in 1916 at age 35, finishing with a lifetime .665 winning percentage with a 2.13 ERA. He headed to Cincinnati, swapped on McGraw's condition that Mathewson replaced Buck Herzog (traded back to New York) as Cincinnati's new manager.

He managed the Reds for 3 seasons before going to war. Matty was gassed in France during a training exercise gone awry. Suffering from that experience, and tuberculosis (his brother, Henry, had TB), Mathewson lived his last years trying to overcome this double whammy to his lungs. He stayed close to baseball, exploring the baseball world's next rung as team president of the Boston Braves by 1923. However, he barely got started before his failing health finally beat him. Mathewson died October 7, 1925 in Saranac, New York at 45 years old.

John McGraw was at the 1st game of the 1925 World Series, but left to see Matty home. Mathewson is laid to rest in Lewisburg, PA close by his alma mater, Bucknell (Frierson 2013).

(Above Left: McGraw (left) consults Mathewson on game preparations and after-game activities. As both were friends long after Christy stop throwing his famed fadeaway. (Courtesy of the McGreevey Collection, Library of Congress.))

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio Coolidge Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Coolidge	1933	New York Giants	2.71	1.39	91	75	23	15	3	2	9	61	1280
Coolidge	1933	Chicago Cubs	2.93	1.18	86	95	16	9	3	2	1	51	1316
Coolidge	1933	Boston Braves	2.96	1.08	83	85	15	16	3	1	0	54	1391
Coolidge	1924	Cincinnati Reds	3.12	1.54	83	77	14	9	3	2	7	30	1408
Coolidge	1934	New York Giants	3.19	1.42	93	68	13	30	3	4	21	75	1384

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Coolidge	1935	Pittsburgh Pirates	3.42	1.76	86	76	15	11	2	1	6	63	1428
Coolidge	1934	St. Louis Cardinals	3.69	1.68	95	78	15	16	3	2	2	77	1463
Coolidge	1935	St. Louis Cardinals	3.52	1.60	96	73	10	18	3	1	2	68	1445
Coolidge	1924	Brooklyn Robins	3.64	1.58	92	97	10	5	2	1	1	58	1432
Coolidge	1924	Cincinnati Reds	3.12	1.54	83	77	14	9	3	2	7	30	1408

1934 National League: *The Meal Ticket* versus *The Gas House Gang*. The New York Giants had the screwball stylings of Carl Hubbell, 'Fat Freddie' Fitzsimmons, 'Prince Hal' Schumacher, *Master Melvin* Ott, and Bill Terry, while the Cardinals had 30-game winner Jay 'Dizzy' Dean, Paul 'Daffy' Dean, 'The Fordam Flash' Frankie Frisch, Leo 'The Lip' Durocher, Johnny 'Pepper' Martin, James 'Ripper' Collins and Joe 'Ducky' Medwick. Nicknames were never in short supply in the Depression years of baseball. The Cardinals won the Series – and created a lasting legacy – while player-manager Frankie Frisch peaked with this lone first place finish.

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio FDR Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
FDR	1942	St. Louis Cardinals	2.55	1.38	106	70	18	15	2	3	6	49	1192
FDR	1943	St. Louis Cardinals	2.57	1.34	105	94	21	15	2	2	2	33	1246
FDR	1944	St. Louis Cardinals	2.67	1.36	105	89	26	12	4	2	7	55	1228
FDR	1942	Cincinnati Reds	2.82	1.17	76	80	12	8	3	2	8	47	1213
FDR	1942	Brooklyn Dodgers	2.84	1.24	104	67	16	24	4	3	17	73	1205

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
FDR	1946	Detroit Tigers	3.22	1.80	92	94	18	15	2	1	4	97	1277
FDR	1940	Brooklyn Dodgers	3.50	1.63	88	65	17	14	2	4	7	101	1366
FDR	1937	New York Giants	3.43	1.62	95	67	11	17	2	2	3	85	1341
FDR	1936	Pittsburgh Pirates	3.89	1.47	84	67	5	12	2	2	3	74	1475
FDR	1945	Chicago Cubs	2.98	1.41	98	86	15	14	3	1	2	57	1301

Cardinals dominated World War II era baseball, winning two World Series titles in 1942 and 1944 (FDR Era: Dynasty in Dire Times). With Mort Cooper benefiting from a weakened National League (dropping his ERA from low 3's to the sub 2.30 ERA), lefty Max Lanier getting his best seasons during this stretch, the Cardinals were the top baseball crop, utilizing all the Rickey-developed farm products, and draft-friendly statuses (married with kids, 4F, deferred entry). Oh, and Stan the Man Musial.

1945 Cubs: the last time the Wrigley tenants appeared in the fall classic. Got there by snatching up the best of the rest, those baseball veterans who the Army and Navy did not want, and trading for a Yankee arm, Hank Borowy.

Johnny Vander Meer. Still is the only man to pitch back-to-back no-hitters in MLB history. He anchored the 1942 Cincinnati Reds staff.

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio IKE Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
IKE	1954	Cleveland Indians	2.78	1.40	111	77	12	36	4	3	27	89	1220
IKE	1963	Los Angeles Dodgers	2.85	2.72	99	51	24	29	3	4	24	111	1329
IKE	1963	Chicago White Sox	2.97	2.12	94	49	21	39	2	3	36	100	1311
IKE	1957	New York Yankees	3.00	1.40	98	41	13	42	1	3	27	110	1198
IKE	1954	Chicago White Sox	3.05	1.36	94	60	23	33	3	4	21	94	1255

Considered among the greatest pitching staffs of all-time, the 1954 Indians found the World Series a different animal. With Early Winn, Bob Lemon, Mike Garcia, Art Houtteman, and Bob Feller throwing, the Indians put away the Yankees in the American League. Long-time *FDR* era catcher Al Lopez managed the 1954 Indians and the 1963 White Sox – reflecting his superior management of pitching staffs. (Top 100 Pitching put the 54-56 Indians at the top in this era.)

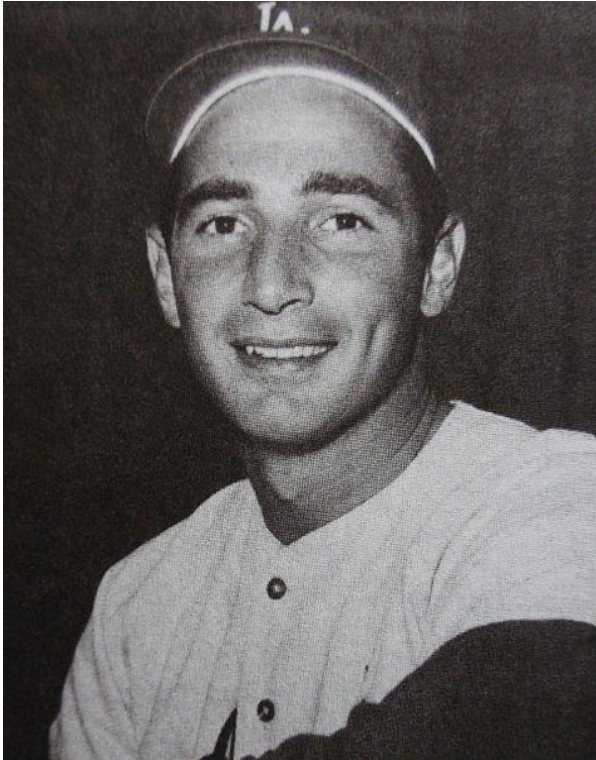
Bob Lemon: Was a converted outfielder (as his 37 lifetime home runs reflect) and won 20 games seven times in Cleveland. He managed the 1978 Yankees to their last World Series title until Joe Torre took over in 1996.

American League Mastery with a Price: In 1957, the Yankees put together their usually good offense with an exceptional pitching staff with 7 pitchers tossing over 100 innings. But the reason for this, as David Halberstam opined, in *October 1964*, “A twenty game winner, management believed, had too much leverage with the club. In the Weiss-Stengel years, Yankee pitchers rarely won twenty games, and there was a reason for it. It was better to let them win fifteen or, at most, eighteen, which meant the team could still win the pennant, but management would retain maximum leverage in negotiations the following year. That was as much a part of the Yankee tradition as winning...great Yankee pitchers [such] as Vic Raschi and Allie Reynolds had considered their contract struggles with Weiss to be virtual battles...” (Halberstam, *October 1964* 1994, 40-41)

1963: Reflected the change in the strike zone as pitchers took the ball and put batters on the defensive, getting K’s and avoiding walks.

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio IKE Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
IKE	1963	Los Angeles Dodgers	2.85	2.72	99	51	24	29	3	4	24	111	1329
IKE	1963	Cincinnati Reds	3.29	2.47	86	55	22	36	3	3	29	117	1307
IKE	1963	Chicago Cubs	3.08	2.13	82	45	15	28	1	3	26	119	1357
IKE	1963	Chicago White Sox	2.97	2.12	94	49	21	39	2	3	36	100	1311
IKE	1963	St. Louis Cardinals	3.32	2.11	93	49	17	32	3	4	26	124	1329



1963 Dodgers: Sandy Koufax (25 wins), Don Drysdale (19), and Johnny Podres (14) got it done on the mound while Maury Wills (.302) and Tommy Davis (.326) were the lean mean part of the Dodgers' offense.

The 1963 Los Angeles Dodgers power pitched their way past their oft beleaguered opponents. Money starters Sandy Koufax, Don Drysdale, and Johnny Podres and a crack bullpen headed by Ron Perranoski rule the NL. The Dodgers then took sweetest revenge on the Yankees, beating them up 4-0 in the World Series: using just those four pitchers. (Source: New York Public Library)



Outside the Hall of Fame: Johnny Podres deals to Roy Campanella on the brick road to immortality in sport. In Brooklyn's lone series win, Podres threw an 8-hit shutout, closing out the Yankees in 1955. His HOF backstop hit two home runs in that series. In 1963, he was the game two starter against the same nemesis: the Yankees. (Courtesy of Amy Borden)

Once again, a radical shift in the play (expanding the strike zone) shows up in the amount of strikeouts to walks. Such a marked change resulted in an immediate advantage to pitchers that the hitters adjusted slowly to, as six years later, the mound and strike zone were adjusted back to assist hitters to reach prior norms. Batting averages nosedived, while every team had fire-ballers keeping the opposition from anything close to comfortable in the batter's box.

July 2, 1963: Warren Spahn and Juan Marichal decide that 16 innings and over 430 pitches measured dominance. Willie Mays hits homer. 1-0, game over.

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio LBJ Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
LBJ	1967	Chicago White Sox	2.45	1.99	89	36	24	39	2	5	39	87	1197
LBJ	1968	St. Louis Cardinals	2.49	2.59	97	63	30	32	2	4	29	82	1282
LBJ	1972	Baltimore Orioles	2.53	1.99	80	62	20	21	3	4	21	85	1116
LBJ	1972	Oakland Athletics	2.58	2.06	93	42	23	43	3	4	43	96	1170
LBJ	1966	Los Angeles Dodgers	2.62	3.04	95	52	20	35	2	4	33	84	1287

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
LBJ	1966	Los Angeles Dodgers	2.62	3.04	95	52	20	35	2	4	33	84	1287
LBJ	1967	Minnesota Twins	3.14	2.75	91	58	18	24	2	4	23	115	1336
LBJ	1968	San Francisco Giants	2.71	2.74	88	77	20	16	2	3	13	86	1302
LBJ	1966	San Francisco Giants	3.24	2.71	93	52	14	27	2	5	25	140	1370
LBJ	1965	San Francisco Giants	3.20	2.60	95	42	17	42	2	6	37	137	1325

Some pitchers that appeared on these seven teams (bold denotes HOF member):

- 1965, 1966 and 1968 Giants: **Juan Marichal**, **Gaylord Perry**, Lindy McDaniel
- 1966 Dodgers: **Sandy Koufax**, **Don Drysdale**, **Don Sutton**, Claude Osteen, Ron Perranoski, Phil Reagan
- 1967 Twins: Jim Kaat, Jim Perry, Dean Chance, Mudcat Grant
- 1967 White Sox: Tommy John, Wilbur Wood, **Hoyt Wilhelm**
- 1968 Cardinals: **Bob Gibson**, **Steve Carlton**
- 1972 Orioles: **Jim Palmer**, Pat Dobson, Mike Cuellar, Dave McNally, Doyle Alexander
- 1972 A's: **Catfish Hunter**, Ken Holtzman, Blue Moon Odom, Vida Blue, **Rollie Fingers**

1960s Giants were as talented as any team during this era. It happened that the Dodgers and Cards were also talented; battles ensue because of it.

The 1967 Twins had 16-time gold glover Jim Kaat and Gaylord Perry's older brother Jim throwing for them with a Mudcat closing out the games. They ran into *The Impossible Dream*.

The 1967 White Sox rostered the man that changed surgery success on a damaged arm in John, a rubber-armed Wilbur Wood, who threw 376 2/3 innings, the most since the *Taft Era*, and Hoyt Wilhelm, who appeared in 1,070 games (5th All-time), winning 123 in relief (1st).

1968 Cardinals: Bob Gibson's 1.12 ERA had league officials worried. Lower the mound and the balance will return. Or add the DH.

1972 Orioles included the 4-twenty game winners from the 1971 Orioles. Only one garnered unusual acclaim (Palmer), as he also never allowed a grand slam home run in his pitcher career of 3,948 innings. (Thanks to Al Bumbry.)

1972 A's had 8 pitchers with ERAs under 3.00. Hunter won 21, Holtzman posted 19, Odom another 15 as Vida Blue struggled to a 6-10 record with a 2.80 ERA reflecting some tough luck. Rollie Fingers, Bob Locker, and Dickie Knowles each saved 10 games with a sub-2.50 ERA out of the pen (WAR 5.5 total – considered an All-Star, everyday player). The A's win 3 championships in a row under renowned baseball skinflint owner Charlie O. Finley.

This era represents a treasure trove of great pitching, game in and game out. Christopher Gehringer completed a study on the Quality Start (QS) for 50 seasons – 1957-2006. The results reflected what many eyes saw during the time: a lot of low-scoring games with starters going into the 7th or 8th innings.

Gehringer used information compiled from *Retrosheet.org* that tabulates all events that happened in a game. He figured the amount of games where both teams saw a both pitchers throw at least six innings, allowing three or fewer earned runs, the created definition of the QS by sportswriter John Lowe. (A bad definition, now rarely used, but it's a tool, no less.)

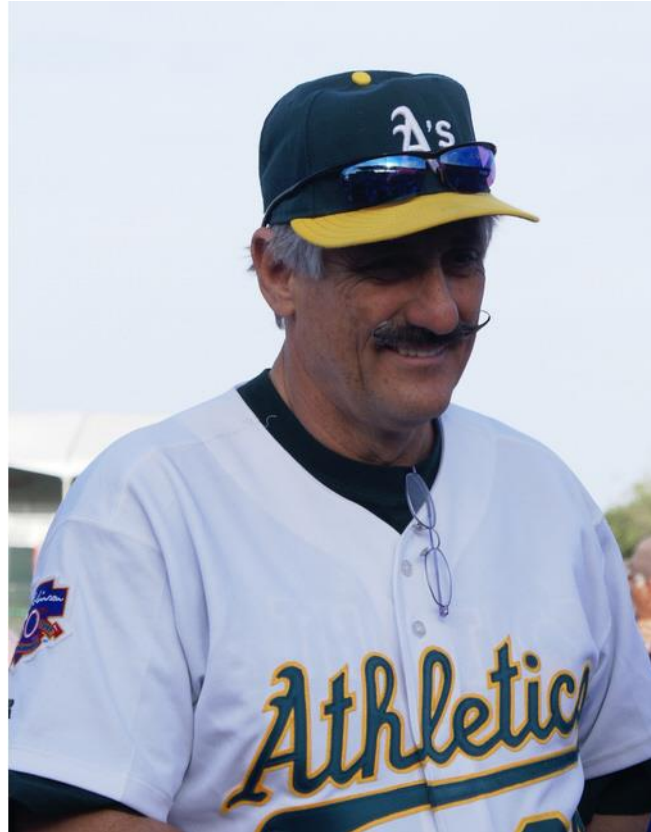
The results below:

**Table. Top % QS for Both Pitchers
(Quality Starts (1957-2006), Christopher Gehringer)**

Year	TW	TL	QSW%	QS Total	QS Games	QS Both	NO 1 Pitch	Both Pitch
1968	1277	722	63.88	1999	1351	648	703	48.00%
1972	1459	759	65.78	2218	1531	687	844	44.90%
1971	1448	760	65.58	2208	1532	676	856	44.10%
1963	1208	604	66.67	1812	1265	547	718	43.20%
1976	1435	737	66.07	2172	1522	650	872	42.70%
1967	1200	625	65.75	1825	1284	541	743	42.10%
1978	1559	779	66.68	2338	1646	692	954	42.00%
1965	1157	594	66.08	1751	1238	513	725	41.40%
1960	839	429	66.17	1268	897	371	526	41.40%
1988	1575	794	66.48	2369	1677	692	985	41.30%

Simple results: Even with the evolution in relief, the starters in the *LBJ Era* were getting it done as they dominated the top 10 of 49 seasons studied. (1999 was omitted.) 1968 produced a separating effect: as a 3.1% difference from first to second shows that the best brought out the best in others (Quality Starts 1957-2006 2006, 5).

Two Top Pitchers of the LBJ Era



Fergie Jenkins and **Rollie Fingers**: After a couple of seasons of working out the bugs, both defined what a starter and a closer meant in the LBJ Era. Jenkins led the National League 3 times in starts made, 4 times in complete games, becoming a 7-time 20 game winner. Fingers, led the American League in appearances 3 times, throwing 130 innings out of the pen in a season. In 3 World Series he amassed 16 appearances, 2 wins, and 6 saves. *Now*, as pictured, they do fantasy-fan camps and share stories that last a lifetime for diehard fans of a different era of baseball. (Both pictures courtesy of Barbara Moore.)

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio Reagan Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Reagan	1988	New York Mets	2.91	2.72	100	31	22	46	3	3	45	78	1253
Reagan	1989	Los Angeles Dodgers	2.95	2.09	77	25	19	36	2	6	34	95	1278
Reagan	1985	Los Angeles Dodgers	2.96	2.12	95	37	21	36	2	4	31	102	1280
Reagan	1988	Los Angeles Dodgers	2.96	2.18	94	32	24	49	2	5	43	84	1291
Reagan	1991	Los Angeles Dodgers	3.06	2.06	93	15	14	40	1	7	37	96	1312



Tommy Lasorda, LA Story: A company man if ever there was, he guided the Dodgers to glory in the California sun. He was replaced by Koufax as the 'it' pitcher in Dodgerland, reflecting one can find their calling, if open to it. (Photo: Courtesy of Chad J. McNeeley, USN, assigned to the U.S. Joint Chiefs of Staff.)



The Dodgers acquired a new pack of arms aided by Dodger Stadium in the Reagan Era. During the late 1980s, they had such names as Orel Hershiser, Fernando Valenzuela, Tim Lincecum and Bob Welch starting, and Jay Howell closing out under manager Tommy Lasorda, the one-time Dodger prospect/pitcher in the 1950s.

Known for his skyward looks at 20 years old, Fernando Valenzuela (left: Wikipedia, Jim Accordino) won the Cy Young and Rookie of the Year in 1981, leading the league in innings pitched. He struggled through a complete game 1981 World Series win that revenged the Yankees again. 1988 saw Orel Hershiser go on a scoreless inning streak that propelled the Dodgers to a division title, NL Pennant, and World Series win. (In 1985, *The Surgeon* was quite good – and this author saw him, in person, *dealin'*.)

Strikeout Kings: In a rare time he did not lead a pitching staff in strikeouts, Nolan Ryan (194) trailed Mike Scott (306) in the Houston Astros closest taste of a World Series until 2005.

The 1988 Mets pitchers: David Cone (20), Doc Gooden (18) and Ron Darling (17) were staff aces; with Randy Myers (26), Roger McDowell (16) and Terry Leach (3) as the quality 3-headed dragon from the bullpen.

(1990 Reds employed *The Nasty Boys* of Randy Myers (31), Norm Charlton (11) and Rob Dibble (2) to win their only post *Big Red Machine* World Series.)

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio Reagan Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Reagan	1990	New York Mets	3.42	2.74	91	18	14	41	2	6	40	119	1339
Reagan	1988	New York Mets	2.91	2.72	100	31	22	46	3	3	45	78	1253
Reagan	1983	Philadelphia Phillies	3.34	2.35	90	20	10	41	2	5	40	111	1429
Reagan	1991	Pittsburgh Pirates	3.44	2.29	98	18	11	51	3	7	45	117	1411
Reagan	1986	Houston Astros	3.15	2.22	96	18	19	51	2	6	51	116	1203

1983 Phillies rounded out the list, facing off against the Baltimore Orioles in their last gasp at World Series glory. In game three of the World Series, for two innings, Jim Palmer and Steve Carlton toed the same rubber. From 1970-1979, Jim Palmer (186) and Steve Carlton (178) were among the top winning pitchers, first and third respectively.

Table. 1970s Pitching Stars

Pitcher	Games	Wins	SO	BB	IP	ERA	K/BB	K/9
Jim Palmer	355	186	1,559	861	2,745	2.58	1.81	5.11
Gaylord Perry	369	184	1,907	758	2,905	2.92	2.52	5.91
Steve Carlton	368	178	2,097	960	2,747	3.18	2.18	6.87
Tom Seaver	348	178	2,304	741	2,652	2.61	3.11	7.82
Fergie Jenkins	360	178	1,841	518	2,707	3.38	3.55	6.12
Catfish Hunter	329	169	1,309	606	2,399	3.17	2.16	4.91
Don Sutton	352	166	1,767	660	2,557	3.07	2.68	6.22
Phil Niekro	406	164	1,866	920	2,881	3.26	2.03	5.83
Nolan Ryan	348	155	2,678	1,515	2,465	3.14	1.77	9.78
Vida Blue	330	155	1,600	780	2,399	3.07	2.05	6
Bert Blyleven	353	148	2,082	711	2,625	2.88	2.93	7.14

Bert Blyleven: With his 12-to-6 hammer (curveball), Blyleven baffled many, many hitters during his 22-year career. His fame problem: overlooked by writers who saw his direct competition in larger markets, while Blyleven pitched in Minnesota, Texas, Pittsburgh, Cleveland and then back to Minnesota. He went 5-1 in post season with 2 World Series titles.

Of the list above, only Vida Blue and Bert Blyleven (since rectified) were left out of the Hall of Fame. Blyleven deserved consideration given his statistical leadership on this list (3rd in ERA, 3rd in K/BB, 3rd in K/9), and an often cited, the lack of run support during his starts by various sabermetric researchers. (Study done by Bill James. A Bert Blyleven biography is at [Wikipedia](#) detailing his career highlights and maneuvers.) Inclusion in the Hall was reached in Gehringer's study of quality starts as Blyleven was on every list of note with HOF pitchers surrounding him. (In 2011, on his 14th ballot to the Hall, Blyleven was inducted into the HOF. Better late than never.)

Whereas the Dodgers dominated the Reagan Era lists, the Atlanta Braves owned the Clinton Era behind Greg Maddux, John Smoltz, Tom Glavine, and Steve Avery. The Braves went to the playoffs yearly; only to find that winning a championship was not as easy as it was for the Yankees, doing it once. Three Braves pitchers (Maddux, Glavine and Smoltz) will be inducted into the Hall of Fame sometime after 2013 season. (Maddux and Glavine made the 2014 class with manager Bobby Cox and former Brave, Joe Torre.)

Table. Top 5 Pitching Teams by ERA and Strikeout-to-Walk Ratio Clinton Era

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Clinton	2002	Atlanta Braves	3.13	1.91	101	3	15	57	3	8	57	123	1302
Clinton	1992	Atlanta Braves	3.14	1.94	98	26	24	41	3	6	37	89	1321
Clinton	1993	Atlanta Braves	3.14	2.16	104	18	16	46	4	7	46	101	1297
Clinton	2003	Los Angeles Dodgers	3.16	2.45	85	3	17	58	1	5	57	127	1254
Clinton	1997	Atlanta Braves	3.18	2.66	101	21	17	37	3	8	36	111	1319

Era	Year	Team	Team ERA	K/BB	Wins	CG	SHO	Team SV	15 game winners	Bullpen Size	Total SV	HRA	Hits Allow
Clinton	2002	Arizona Diamondbacks	3.92	3.10	98	14	10	40	2	9	40	170	1361
Clinton	2003	New York Yankees	4.02	2.98	101	8	12	49	4	7	48	145	1512
Clinton	2002	New York Yankees	3.87	2.82	103	9	11	53	2	4	50	144	1441
Clinton	2001	Arizona Diamondbacks	3.87	2.81	92	12	13	34	2	7	31	195	1352
Clinton	1994	Montreal Expos*	3.56	2.80	74	4	2	46	1	5	43	100	970

Curt Shilling and Randy Johnson provided the healthy strikeouts for 2001 and 2002 Diamondbacks, leading to their lone championship run so far.

The Yankees lived off the power arms of Roger Clemens, Mike Mussina, and Mariano Rivera, and the craftiness of Orlando Hernandez, David Wells, and Andy Pettitte, all generating strikeouts and wins for Their Boss.

The Montreal Expos: See FDR.



Curt Shilling: Power pitcher turned powerful professional *blogger*, MLB analyst, financially ruined by 38 Studios. Now: fighting cancer. Boston's 2004 championship comes in a gutsy performance on a surgically repaired ankle, bloody sock and all. **Randy Johnson (right):** Intimidating throughout the Clinton Era, Johnson commanded respect with high-90s gas. Here, after several trades, he joins the 300-win club as a Giant. (Both pictures courtesy of Wikipedia Creative Commons.)



Roger Clemens: Has struck out 20 batters in an outing, won more than 350 games, appeared in 6 World Series, and had secured his place in history as one of the most feared and (then) respected pitchers of his time. The Rocket brought a 'Texas attitude' to his game, and at 45, was still throwing better than men *half* his age.

When Roger beat the Twins for his 350th win, the manager Joe Torre was front row as he had been 24 years prior in catching Warren Spahn's 350th win on September 29, 1963. (Photo: Keith Allison)

(Ongoing Note: George Mitchell report named him as a steroid user. In the summer of 2011, Clemens was put on trial for lying to Congress. First, a mistrial was declared due to basic legal tenant: inadmissible hearsay evidence.

Then, a reschedule set for April of 2012 (Munson, Questions and answers about a second Roger Clemens Trial 2011). He is acquitted in June 2012. A defamation lawsuit filed by Brian McNamee is still ongoing as of 2014.)



George Thomas 'Tom Terrific' Seaver. Finished his career with 311 wins, 2.86 ERA, and 3,640 strikeouts. His first five seasons are among the best in modern history: 2.34 ERA, 95 Wins, 1,379 IP, 1,155 Strikeouts versus 352 Walks. The NL's Bob Gibson was in this dominate universe between 1967 and 1971. (Courtesy of Sharon Chapman.)

Spelling Relief?

By the last quarter century, bullpen sizes were up to at least 6 men throwing in 20 or more games in relief, even among the best pitching staffs. For the mediocre ones, managers have consistently used anyone that can eat up innings after their starters throw barely 6 innings. (And those are typically the good starters.)

The average and bad starters will go 5 innings, at best, turn it over to middle relief, who turn it over to the setup men, then the coveted closers. Box scores have HOLDS as a new category – the ability to keep a lead safe. Thus, we are now “valuing” this skill – not to blow a lead; an uptick in salaries likely soon following.

The 2001 Arizona Diamondbacks are the closest to giving up 200 home runs while likely being one of the better pitching staffs. This was due to the lack of other hits allowed, keeping their ERA in line with the better staffs of this generation. Nevertheless, it reflects too the emphasis for power hitting at all costs, swinging for the downs, and striking out frequently, as we will see happen after strike zone tinkering begins in earnest in 1950. (**See Volume II:** Ike Era)

Bush Era (2006-2014): Pitch F/X and Injury Tools

Everything changes once technology becomes readily available and analysis can support or reject hypotheses put forth. For many years, the scout's eyes, radar gun recordings, and plain old ERA were accepted ways to measure a pitcher's performance. But now, as technology has dispersed, sites like Brooks Baseball (brooksbaseball.net) provide analyses that give fans another viewpoint on a pitcher's evolution and actual stuff. This site and tools were created by Dan Brooks, a neuroscientist at Brown University; Harry Pavlidis, from Chicago, who has created mobile and online applications for nearly twenty years, maintains *Pitch Info*, and is Director of Data Analysis for *Baseball Prospectus*.

MLB installed pitch tracking at all its ballparks early in the 21st century, where velocity, movement, pitch type, and strike zone location are all recorded on each and every pitch for all pitchers. From this, charts and graphs of release points, velocity, horizontal and vertical movements of pitches are all accessible. Sabermetric analysis, pitch type, and frequency by count on hitters are all recorded and dissected. Batter's information is equally captured – allowing us the fan to know where a guy loves the ball, and how well he hits it in various counts.

This is a marvelous tool; as baseball is all about exploiting tendencies to ones best scouting and tactical advantage. Championships are won on knowledge gathered from any source available. Now, fans can do the same analytics many MLB teams do.

The Visual Tale of a Near-Perfect Pitcher

Admittedly, the top performers are easiest to identify as having "stuff" or "command" or knowledge of what they are doing. Anyone watching a "#1 starter" expects to see hitters fail often; quick innings; overpowering stuff; and smart usage of their repertoire. Admittedly, the vast data insights now available at Brooks Baseball (Pitch F/X) or Fangraphs' tabulated data are on a *Microsabermetric* level: that of pitch sequencing; release points; heat maps; individual pitch result information; pitch spin rates; pitch velocity and movements during a stretch of a season (in search queries). It's all there.

It would be hubris to say from either a fan or part-time analyst perspective that it is a cinch to identify patterns or make total sense of all the data, without a deeper connection to MLB. As will see later, most front offices are packed now with college men and women quantifying terabytes of this very data to make short and long-term decisions. (Or at least they should be.)

Our example here is 2013 Cy Young winner: Clayton Kershaw. By 21, Clayton was an everyday starter for the Dodgers; 23, an all-star, 21-game winner, 1st time Cy Young winner. Basically, he is on a HOF route to greatness. The Dodgers recently signed him to a 7-yr/\$215 million contract and will be paying him \$30,000,000 plus until 2020 when he turns 32.

Such an enormous bet on a pitcher tends to backfire. At the beginning of the 2014 season, Kershaw landed on the DL with a strain, non-pitching arm related. But since that time, he has been as close to perfect as one can be.

So what makes Kershaw good? Can we tell?

Kershaw has a repertoire of primarily three pitches: a 4-seam fastball, a slider, and a curveball. He throws an infrequent change up and a 2-seamer, but the bread and butter are the 4-seamer and the slider. This too evolved from his rookie 2008 season, just one year after Pitch F/X began collecting data on all pitchers in the MLB.

Percentage Usage of Pitches (Brooks)

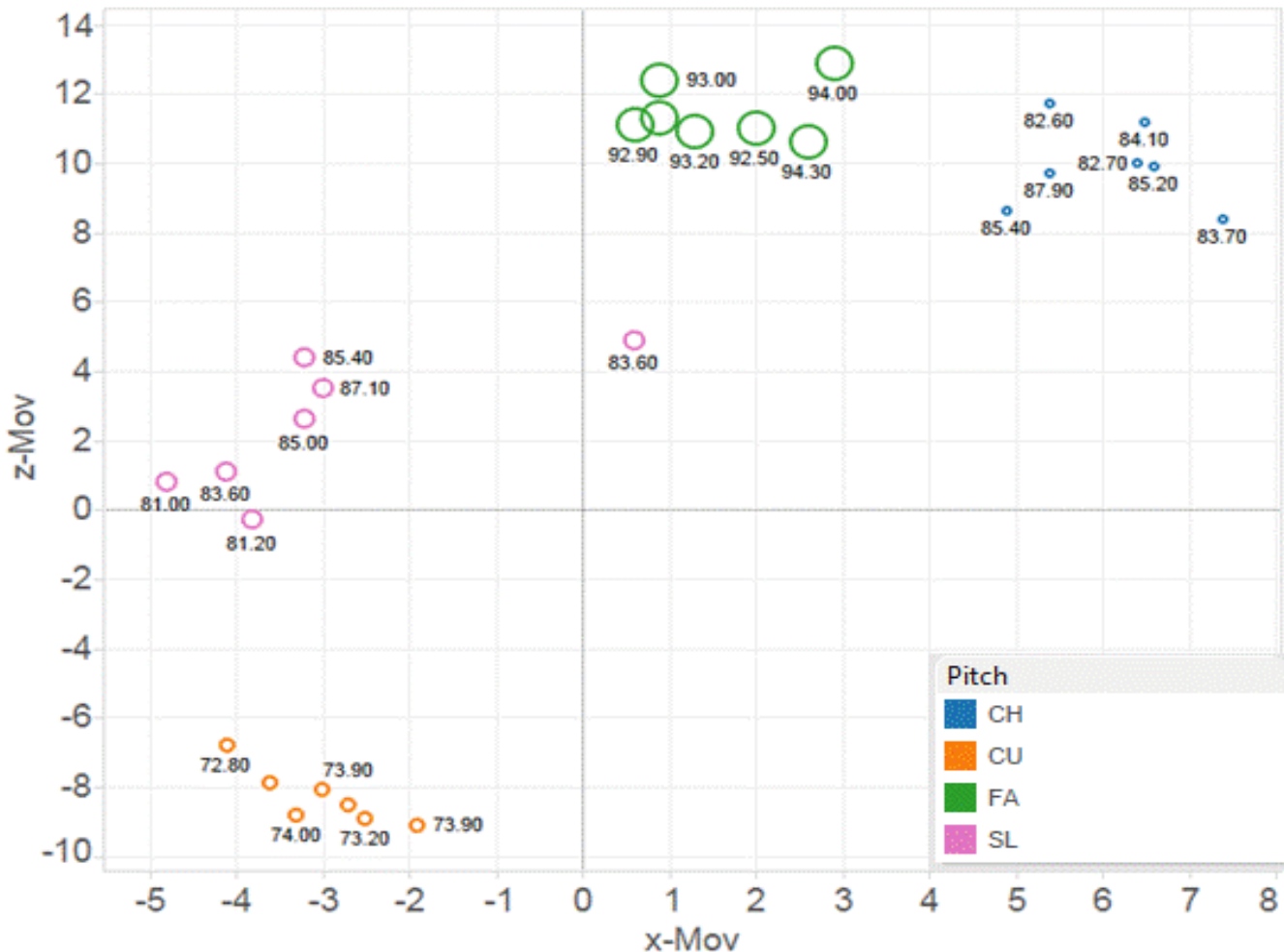
Month/Year	Four-seam	Curve	Slider	Change
4/9	70.98	19.79	0	9.23
5/9	72.01	20.42	0	7.57
6/9	71.11	15.56	9.11	4.22
7/9	69.38	17.14	9.65	3.83
8/9	66.09	16.09	15.05	2.77
9/9	74.41	9.95	14.22	1.42
10/9	67.08	9.01	23.91	0

Percentage Usage of Pitches (Brooks)

Month	Four-seam	Sinker	Curve	Slider	Change
3/13	61.5	0	12.3	20.86	5.35
4/13	63.54	0	10.99	21.66	3.82
5/13	62.34	0.31	12.34	22.97	2.03
6/13	60.52	0	12.1	25.51	1.86
7/13	61.99	0	11.83	25.08	1.1
8/13	56.09	0	13.97	28.34	1.6
9/13	57.54	0	14.65	23.99	3.82
10/13	58.51	0	12.77	27.39	1.33

Kershaw has reduced his usage of the fastball as he developed a wipeout slider, while maintaining a curveball, and keeping a change-up just for show, 2-4 times per game. (Assume he throws 100 pitches per outing.)

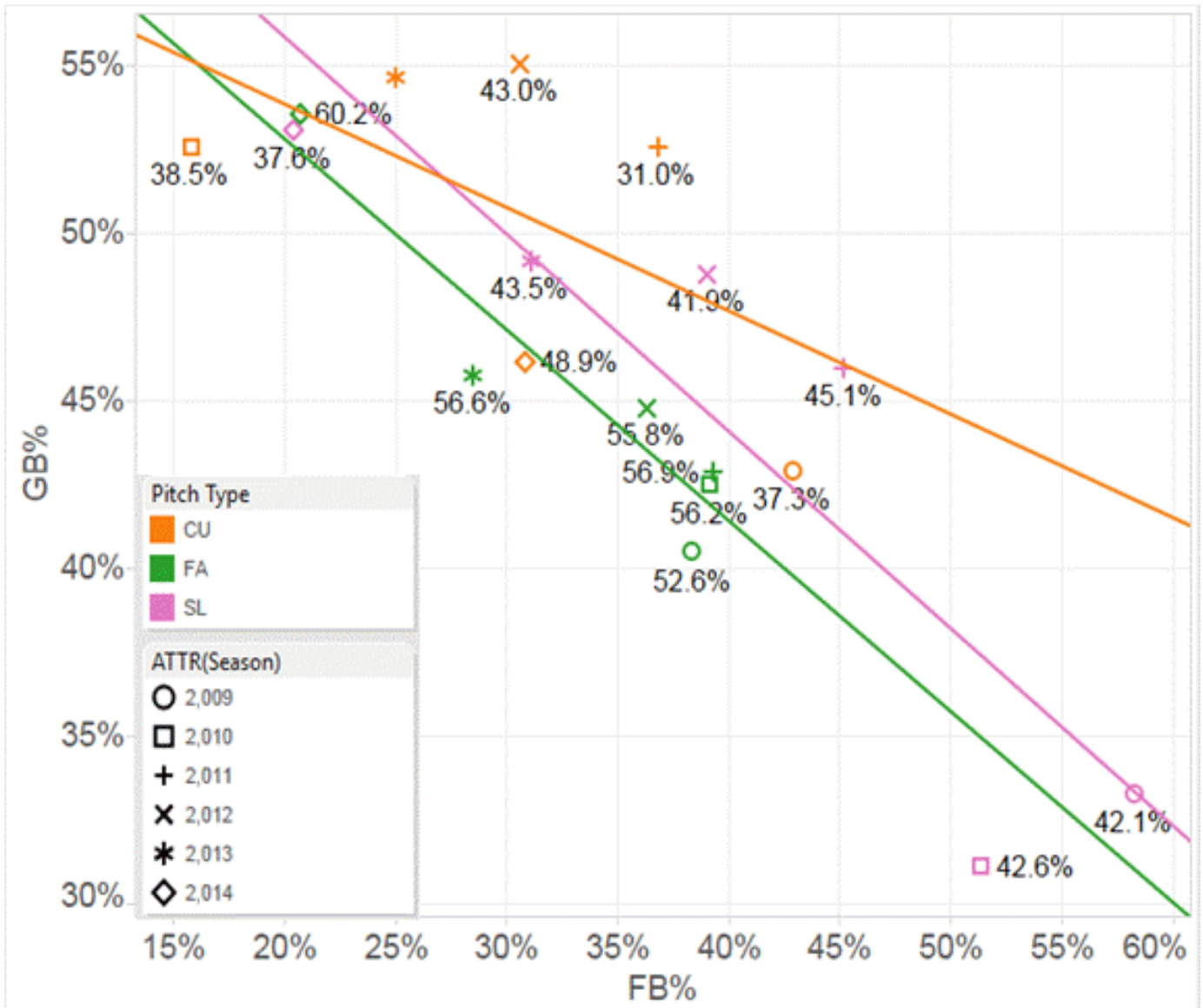
Over the years, his average velocities per season and movements are reflected below (FA-Fastball; CU-Curve; SL-Slider; CH-Change):



For the axes, take on the perspective of a catcher. As positive $x\text{-Mov}$ moves toward the left hand hitters; and negative $x\text{-Mov}$ runs toward the righties. Same thinking for the $z\text{-Mov}$ axis, as negative reflects a downward/sinking action, aside from gravity. For Kershaw's fastball, it generates lift into the zone, though gravity does interact (he is a 6'3" pitcher). It moves slightly away from righties, and into lefties, though one could further complicate this graph results (doing sub queries on usage by RH vs. LH batter). His slider predictably runs in on those pesky righty hitters, 3-5 inches, with less "lift" than on the fastball. Finally, his curveball has -8 to -10 inch downward break to go along with a lateral break in on the righties.

Notice the up and down and left to right alignments plus the velocity differentials. His Fast ball is +10MPH on his slider, +20 on his curve. His change-up travels nearly the same plane, and runs away from righties, when he throws it, which is rarely. His curve and slider are + 10MPH difference, same lateral ($x\text{-Mov}$) type. His slider was "loose" in his first season using it (season labeling not shown.)

The tightness of these clusters matter too. His fastball – his bread – has been in the 92-94 range with similar movement throughout. His slider, however, has developed over time. The velocity groupings depict this best. When at 81-83MPH, in his first seasons, it stayed “flat” – 0 inches on the vertical plane. Since maturing, his velocity has crept up, and the pitch rides higher, just a touch, the introduction of perceived “hop.” He developed a better feel for this pitch, and the graph below reflects growth over time based on his FB% – Fly ball percentage – and GB% - Groundball percentage.



The lines above represent regressions for the 2009-2014 seasons with FB% the dependent variable, and GB% the independent variable. These should correlate well together, as along with LD% (line drives) they add up to 100%. The bigger idea is the slope and error over time, the growth of a really good pitcher to the ace of the entire National League in 2014.

Model formula:	Pitch*(FB% + intercept)
Number of modeled observations:	18
Number of filtered observations:	0
Model degrees of freedom:	6
Residual degrees of freedom (DF):	12
SSE (sum squared error):	0.018202
MSE (mean squared error):	0.0015168
R-Squared:	0.776695
Standard error:	0.0389465
p-value (significance):	0.0013225

Coefficients							
Pitch	p-value	DF	Term	Value	Std. Error	t-value	p-value
SL	0.018	4	FB%	-0.588	0.152	-3.88	0.0179
			Intercept	0.676	0.065	10.42	0.0005
FA	0.006	4	FB%	-0.569	0.105	-5.42	0.0056
			Intercept	0.642	0.036	17.76	< 0.0001
CU	0.226	4	FB%	-0.308	0.216	-1.43	0.226
			Intercept	0.600	0.068	8.83	0.001

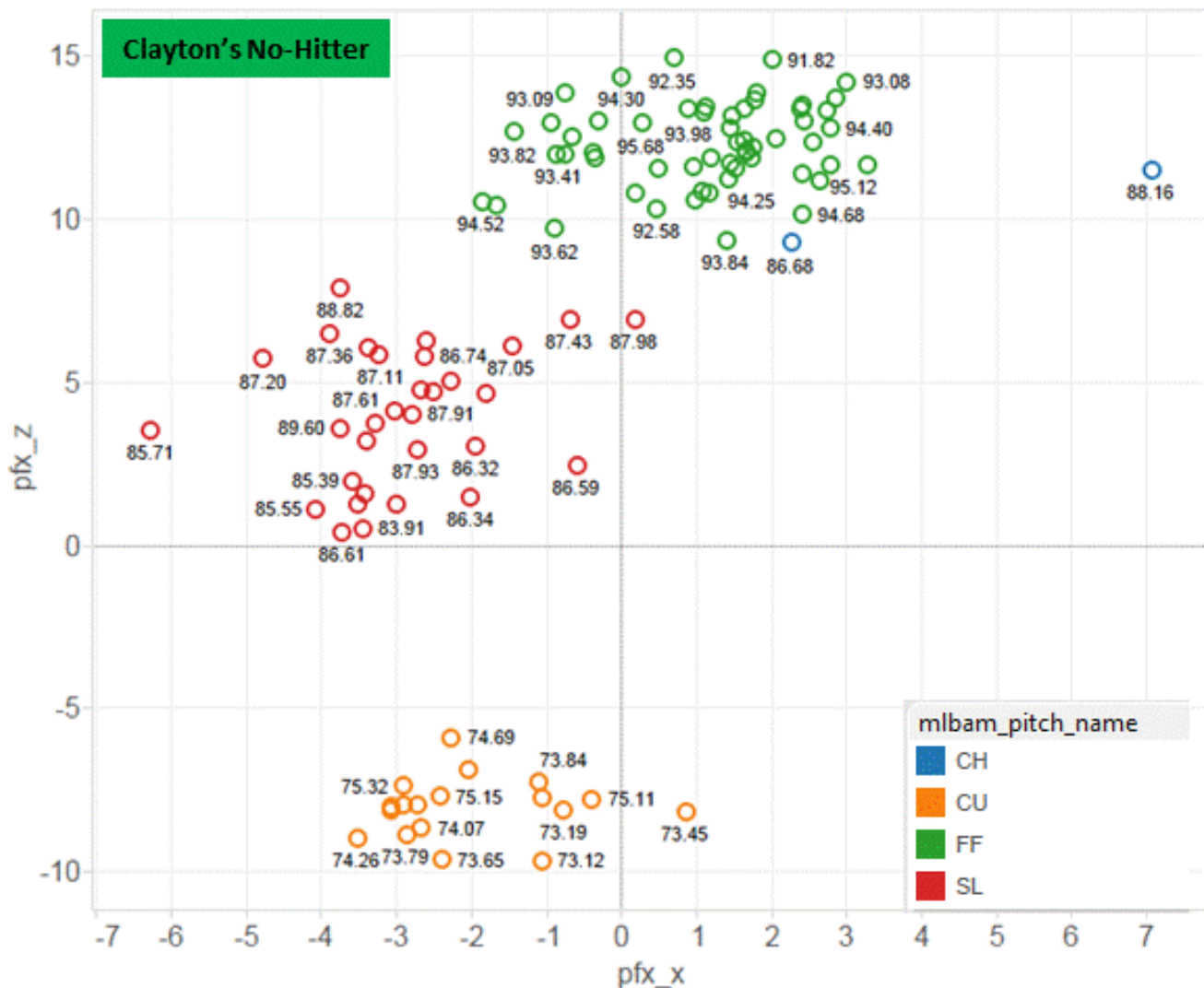
Kershaw reduced his fly ball rates year over year, trending towards 20-25% area by 2013-4, while improving above 50% on the groundballs.

Maybe more telling, is the important of both the fastball and slider, nearly two times as influential (Value:-.569/-.588) compared to his curveball rate. The Std. Error rate shows his fastball is doing the job most consistently; while his slider is more variable but still getting groundballs better, and the curve is, with respect to the others, very hit or miss, so to speak. His Fastball and Slider p-values are significant in the regression at the 5% level. (It is relatively narrow sample of data.)

This shows a development of an elite slider to go with an elite fastball tied to a very good 3rd pitch in the curve. His career statistics coincide with this data – as 2014 has been his best statistically so far.

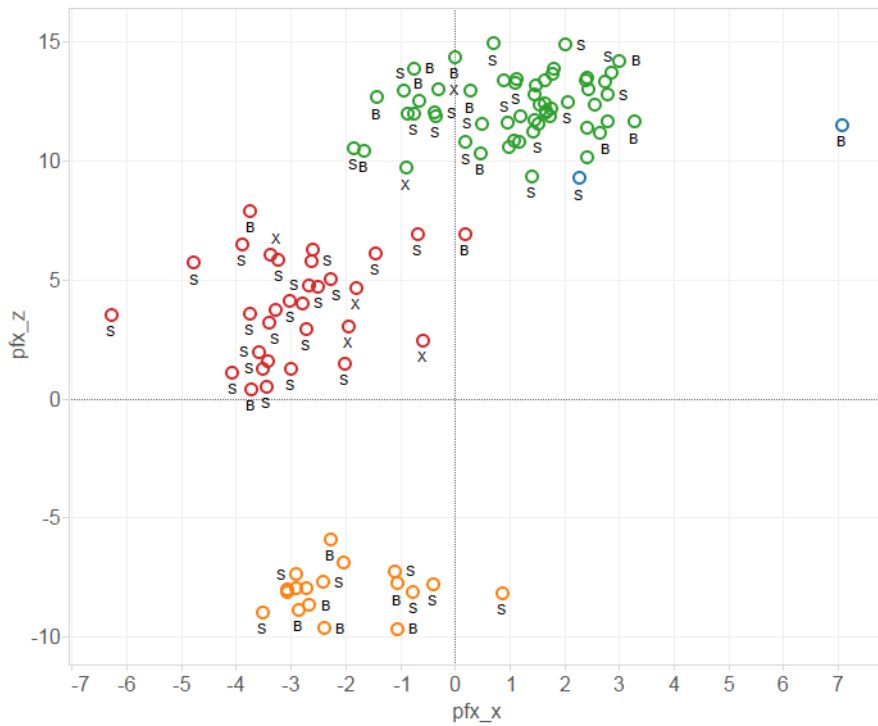
Year	Age	W	ERA	GS	IP	HR	ERA+	FIP	WHIP	H9	BB9	SO9	SO/BB
2008	20	5	4.26	21	107.2	11	98	4.08	1.50	9.1	4.3	8.4	1.92
2009	21	8	2.79	30	171	7	143	3.08	1.23	6.3	4.8	9.7	2.03
2010	22	13	2.91	32	204.1	13	133	3.12	1.18	7	3.6	9.3	2.62
2011	23	21	2.28	33	233.1	15	161	2.47	0.98	6.7	2.1	9.6	4.59
2012	24	14	2.53	33	227.2	16	150	2.89	1.02	6.7	2.5	9.1	3.63
2013	25	16	1.83	33	236	11	194	2.39	0.92	6.3	2	8.8	4.46
2014	26	11	1.92	15	103.1	6	186	1.74	0.84	6.4	1.2	11.7	9.57
7 Yrs		88	2.55	197	1283	79	149	2.79	1.07	6.8	2.9	9.4	3.29

For the statistical experts, this will seem too generic – and overstates the conclusions – but it does point to underlying measures and “stuff.” The graph below is a look at his near perfect game (Corey Dickerson reached on an error) pitch usage, movement, and velocities seen.



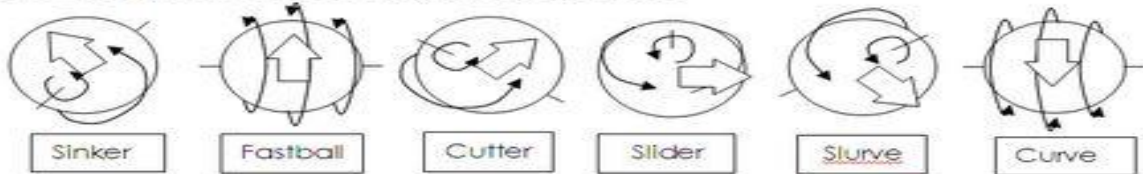
As seen before, Clayton's movement is fairly predictable, denoting supreme command of his pitches. His slider velocity topped out at 89.6MPH, and was above his typical season averages from above. Fastball was lifting well too (+14), and topped out at 95+MPH. In all, superbly effective and efficient (he threw only 107 pitches that night). He struck out 15 batters, 79 total strikes with 22 swinging. He had 9 groundball outs, 4 fly balls and a lone liner. For perspective, to get that number of strikeouts, you have to get 45 strikes, leaving only 34 more for the remaining 12 batters, without any foul balls. On average, he stayed always ahead in the count, threw 1 ball per at-bat (28 ball calls).

Lastly (below), for that near perfect evening, he threw his slider for strikes (S) at a very high rate. His curve was not "on" but given the relative use, it kept batters honest. One cannot be completely perfect. But Clayton, for an evening, was.

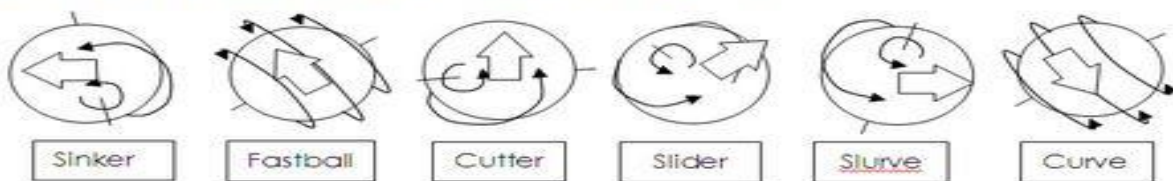


Types of Pitches and their Movements (Lentzner 2008)

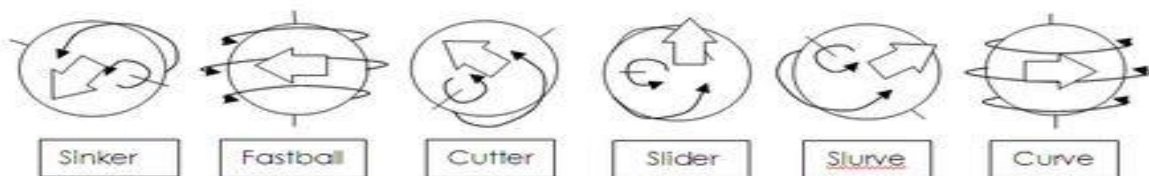
Overhand right-handed delivery as seen by batter



Three-quarter right-handed delivery as seen by batter



Sidearm right-handed delivery as seen by batter



RPMs on Fastballs (Pourciau 2012)

Pitcher, Team	Avg Velocity 2011	RPM
Justin Verlander, Tigers	95.0	3,004
Gio Gonzalez, A's	92.8	2,965
Chad Durbin, Phillies	89.6	2,838
Alfredo Aceves, Yankees	92.1	2,795
Clay Buchholz, Red Sox	92.3	2,740
Tommy Hunter, Rangers	91.9	2,720
Josh Tomlin, Indians	88.0	2,693
Ivan Nova, Yankees	92.4	2,690
Kyle Davies, Royals	91.8	2,669
Brian Matusz, Orioles	88.5	2,637
MLB Average	91.54	2,450

The diagram above and the table reflect more on the physics and gathered telemetry baseball in the *Big Data* era, likely the biggest change factor to baseball since free agency. As multiple terabytes of data are generated on batters, pitchers, and fielders, in each game, and the calculations turn into physics and analytics problems - force vectors, launch angles, spins, trajectories, and sequencing - this will add yet another chapter to the game's evolution.

Bush Era: Injury Factors and Age Curves

Developed over at *Fangraphs* by Jeff Zimmerman with assists from Josh Kalk and Kyle Boddy, Pitcher Injury Factors, looks at velocity loss, low strike zone%, late game inconsistencies and variations. The purpose: to identify possible indicators of a forthcoming injury based on velocity loss, inability to maintain fastball strike zone percentage, and changes to a pitcher's release point in the later part of the game, specifically, those last ten pitches, often made under duress. Zimmerman states, "By using all three traits, a better picture of a pitcher's health can be revealed (Is Big Game's Game Breaking Down? 2013)."

This tool can be located at:

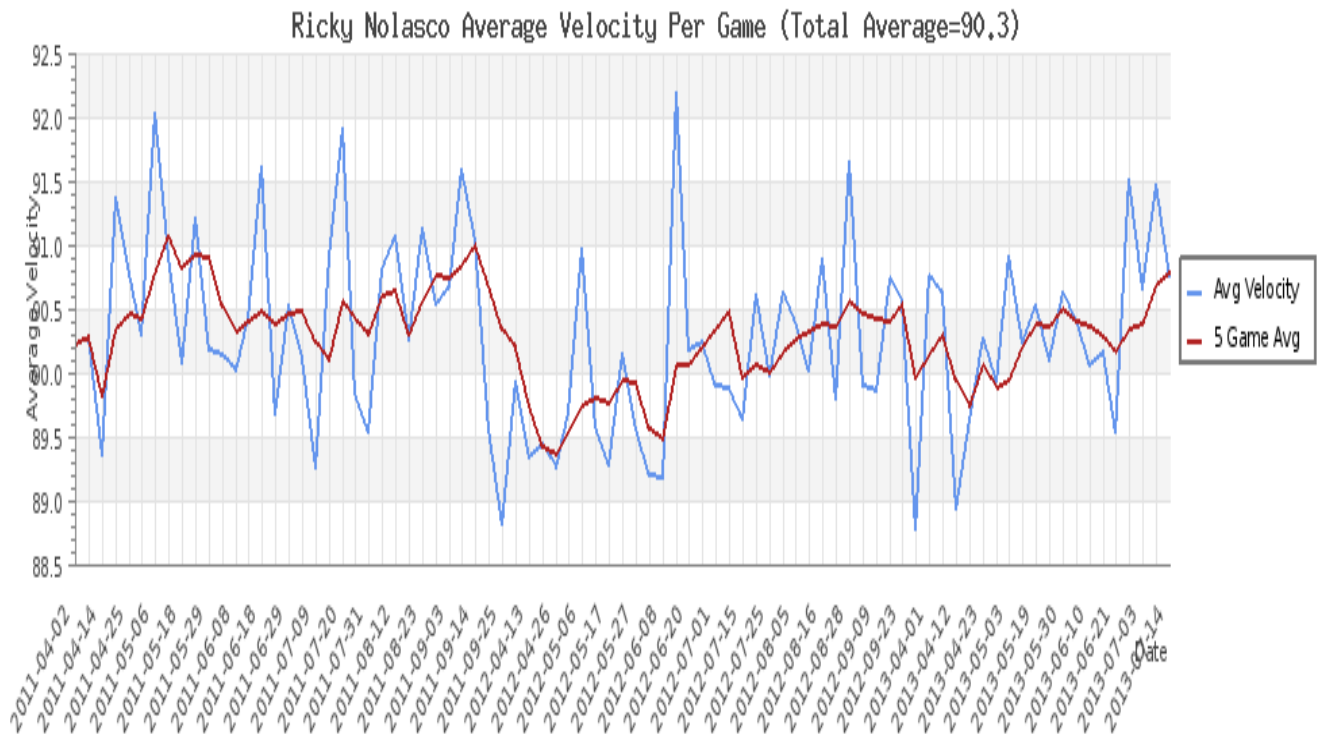
<http://www.baseballheatmaps.com/graph/consistencyscore.php>

Two pitchers were analyzed in 2013; with these results generated:

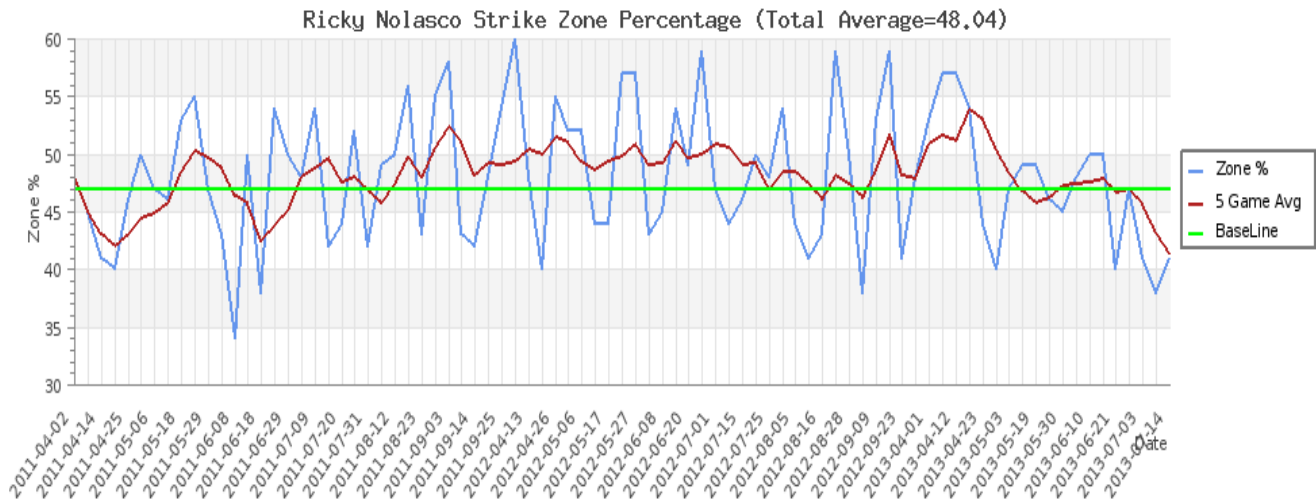
Nolasco's pitch usage from 4-1-11 to 7-30-13

Pitch Type	Pitch Count	Percentage
FF	2315	28
SL	2095	26
FT	1391	17
CU	1209	15
FS	547	7
CH	494	6
IN	44	1
FC	70	1
UN	9	0
PO	6	0

Nolasco throws lots of sliders, cutters, sinkers, changes to complement his four and two seam fastballs. He is crafty; as he developed this as an alternative way to get threw his starts.

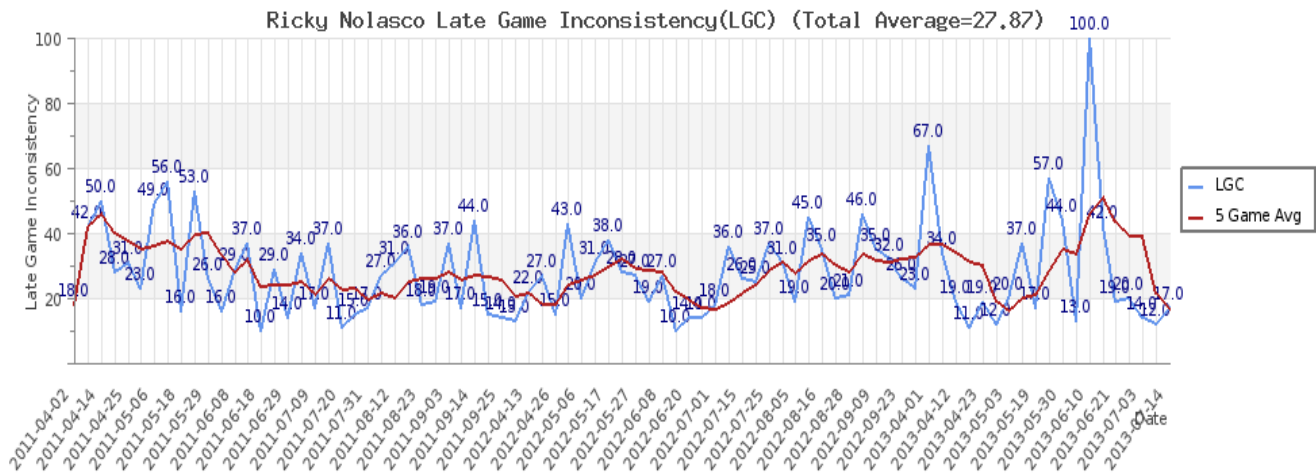


Since Pitch F/X calibration varies from park to park, we could draw the basic conclusion that Nolasco's 4-seamer has hovered around 90.3MPH, with a fair amount consistency over the past 2½ seasons. Early in 2012, Ricky's average was in the 89.5 region, but this could tie to early season working out the mechanics or measurement errors on Pitch F/X at the various parks. However, it rebounded well enough to the baseline. (August 2013: 91MPH)



This graph presented some recent struggles: since the beginning of the 2013 season, Nolasco saw his fastball strike zone % decline steadily, after a long period above his average of 48%. He accumulated several data points at the 40% level in just 2013. At the very least, it shows he has moved away from his normal rate of fastball strikes, a possible injury indicator.

As Zimmerman summarized in his *Fangraphs* article: "A low zone% indicates the pitcher is having problems throwing strikes. pitchers who have problems finding the strike zone are more injury prone."



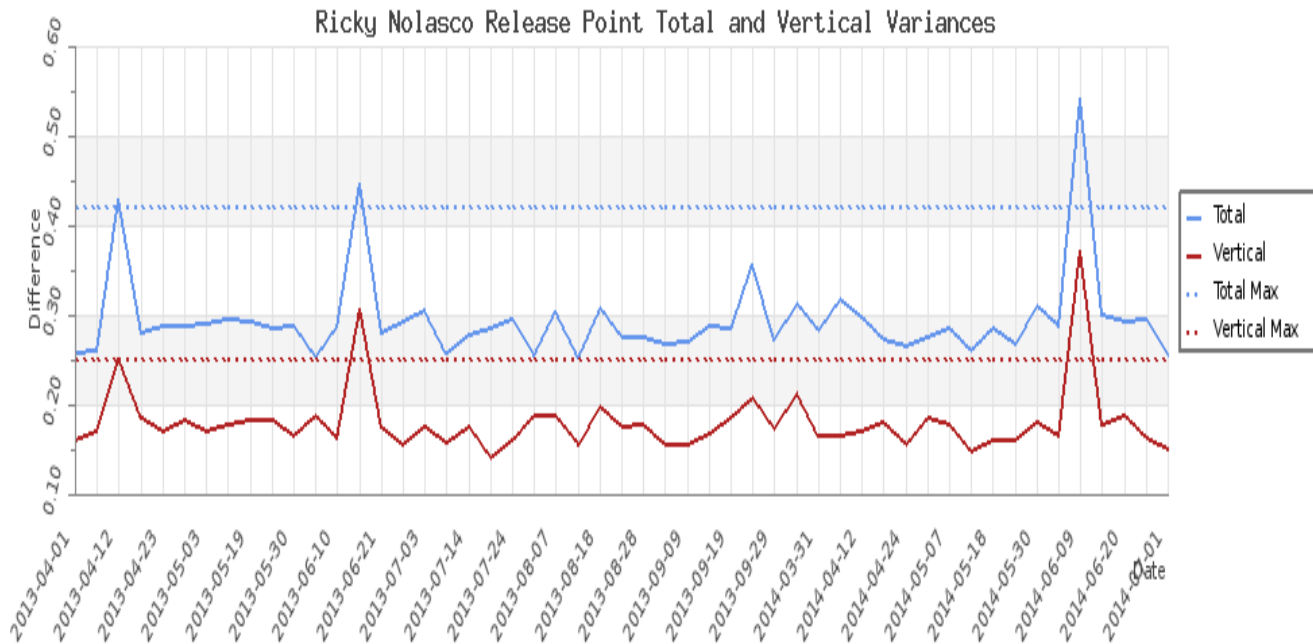
This final graph is harder to explain as it focused on repeating one's release point. The higher the percentage, the less repeated the delivery was in a games last ten pitches. Again, Zimmerman explained this as, "The tool determines if the player was throwing inconsistently (speed, break and release points) late in the game, but it doesn't say in what way. The data needs to be looked at in more detail." Nolasco was very consistent, hovering in a range below 53 down into the 10-20 area throughout the 2011-2012 season.

But, in the 2013 season, Nolasco's late game numbers jumped out of bounds 3 times in just that season. The 100% recorded happened on June 10th where he threw 105 pitches in 5.1 innings, just before trade scenarios were

discussed for him. Nolasco's earlier high water marks (67%) took place in a game where he threw just 103 pitches.

In essence, thereafter, his pitching was limited to 110 tosses by the Marlins. Once traded, the Dodgers backed him off to under 100 pitches for 5 consecutive starts, then, by August, they let him go deeper.

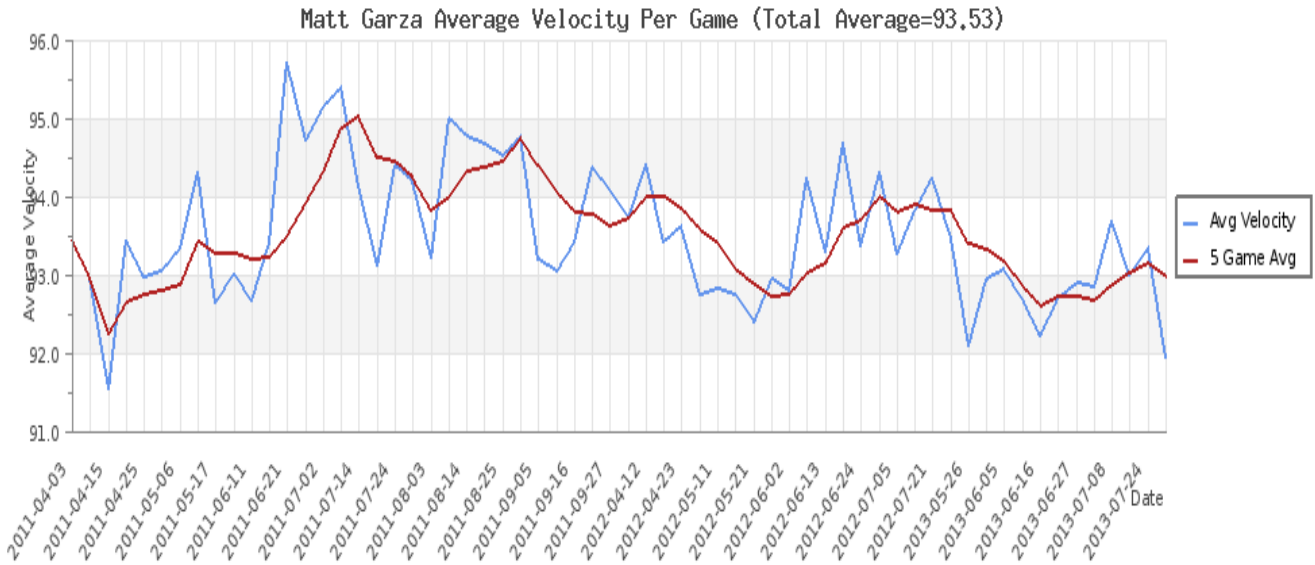
Nolasco signed in the offseason in Minnesota for 4 years and \$49 million. This contract became disastrous in the first season (well after this analysis was done). He landed on the disabled list with an elbow injury in early July about one month after a large variation in his release point (a new addition to their tool).



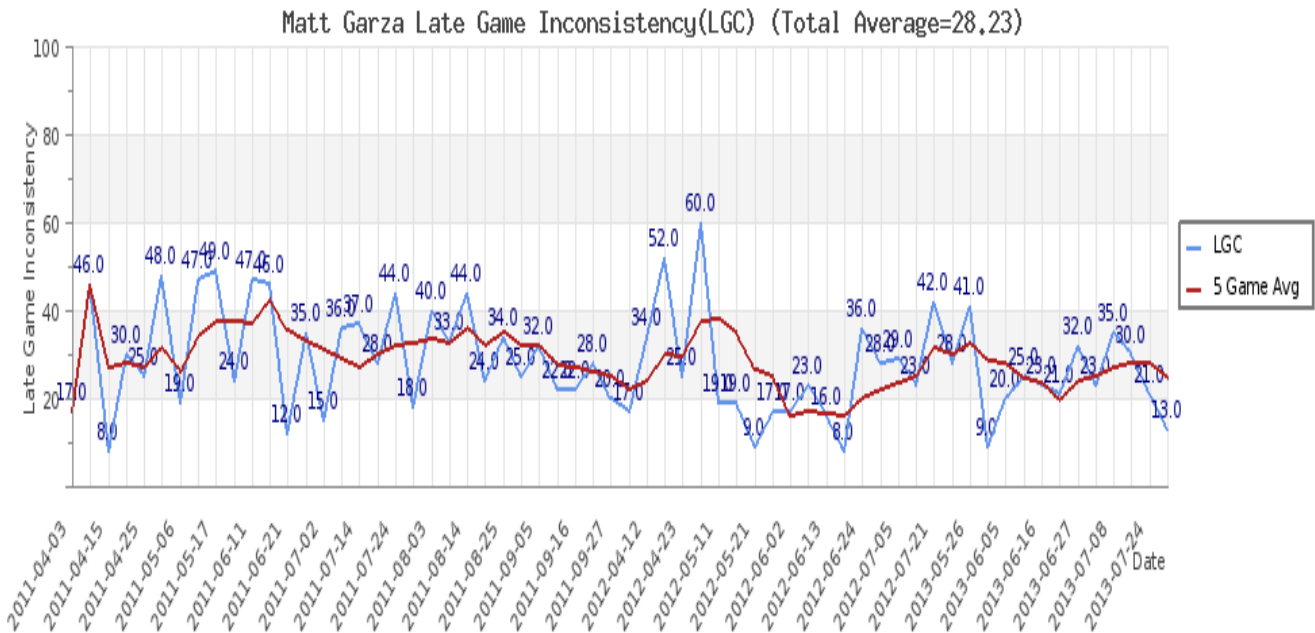
Garza's pitch usage from 4-1-11 to 7-30-13

Pitch Type	Pitch Count	Percentage
FF	2345	38
SL	1466	24
FT	1241	20
CU	676	11
CH	449	7
IN	26	0
PO	1	0

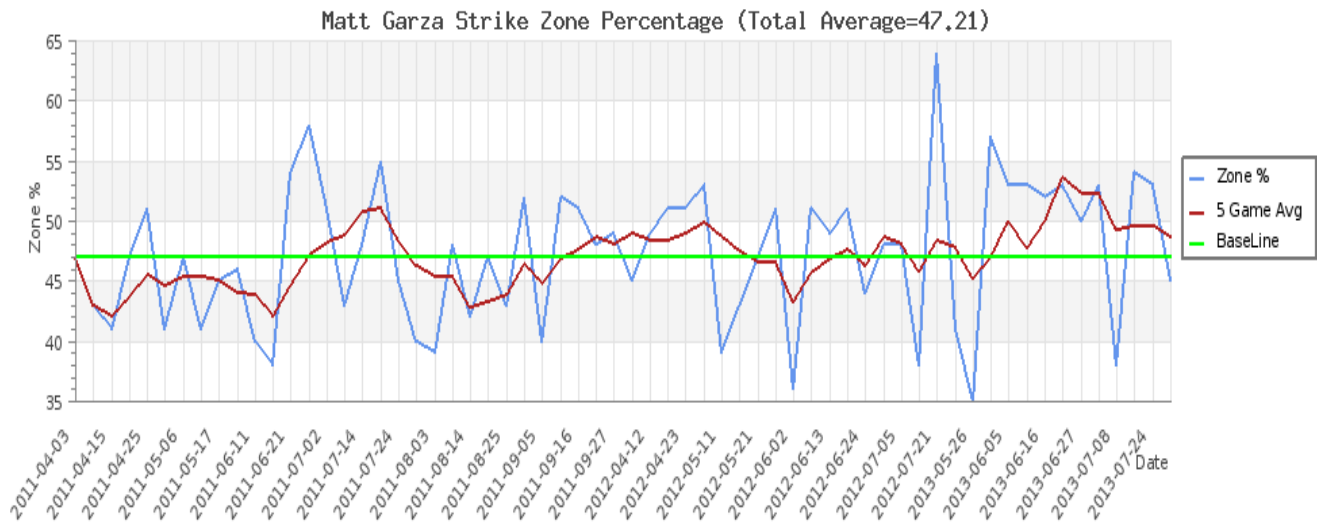
With Garza, there were differences in pitch usage, and less selection. Garza threw 38% 4-seam fastballs, 20% 2-seam fastballs, and 24% sliders over this span. This included the 2011 and 2012 seasons where his usage of sliders, curves and changes were much higher than during 2013. (For the 2013-2014 time frame, fewer sliders were thrown.)



Garza's velocity: he lost about 2-MPH on his averages from middle of 2011. Garza fell to a late 2012 season injury – forearm stiffness – that carried over to the 2013 season. Realizing this shows lost velocity, one must see context: his velocity sat typically 3 MPH higher than Nolasco's; thus Garza has better overall ability to use this to his advantage with both sink and run action.

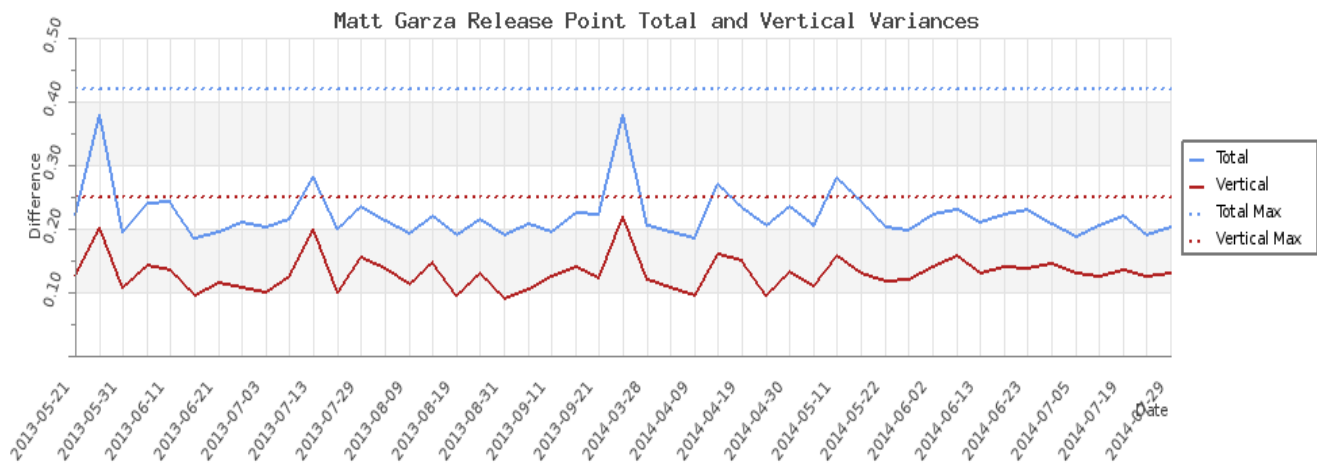


The late game inconsistency graph is telling by comparison. Garza held his release point and velocity pretty well. In fact, the recent trend has him in a good groove, repeating pitches later in game, as he's actually thrown a regular compliment of 105. (He's been about 10 pitches more than Nolasco for 2013-14.)



Garza's in strike zone trend is again promising, if you were going to trade for him, as the Rangers did. He was above his lifetime average, showing health and stamina, and the right stuff. He tossed about 10% more strikes than Nolasco did over the stretch of time before both their trades in 2013.

Garza signed in Milwaukee (4year/\$50M), and while his zone % is down, his velocity up, and his release point variance did not show the problems Nolasco's soon exhibited. Garza's results and health generated good results as Milwaukee sits in 1st place in 2014.



Pitcher's Velocity and Age

As the technology, programming, and analysis improved, it is easier for both front offices and fans to do a very thorough analysis using all of the above collected from *Pitch F/X*, *Fangraphs*, and *Baseball Reference*, as well as other tools. Obviously, the front offices gathered more data points, created models, derived a strategy to improve a team, but there are always unexpected events that can throw curves into evaluations. Injury and age are just two examples.

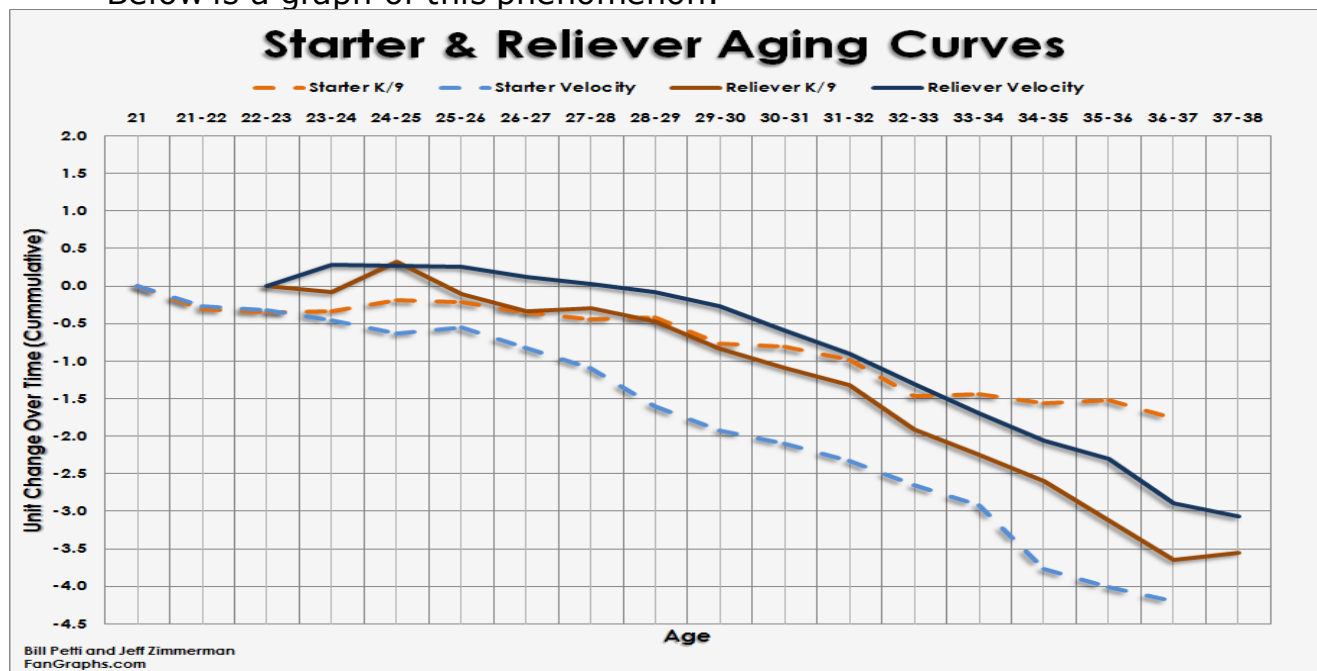
Bill Petti and Jeff Zimmerman put together a three-part series (*Pitching Aging Curves*) on velocity related to various metrics on both starters and relievers. In it they found significant correlation between a pitcher's velocity by age and his ability to strikeout batters, their walk rate, and FIP ERA.

Their overall analysis was summarized as follows:

"The general takeaway was that, as suspected, pitchers age differently than hitters. Generally, pitchers see their velocity peak in their early 20s and steadily decline by a full mile per hour by age 26. After that, velocity drops more sharply and continues a steep decline into a pitcher's 30s.

Strikeout rates were tied to velocity, but not as closely after age 26. This indicates that those pitchers who survive into their late 20s and early 30s are less reliant on their velocity (and, most likely, their fastball) for strikeouts. A pitcher's walk rate shows some improvement through age 25 (due to starters), and then begins its decline." (Pitching Aging Curves: Starters and Relievers 2012)

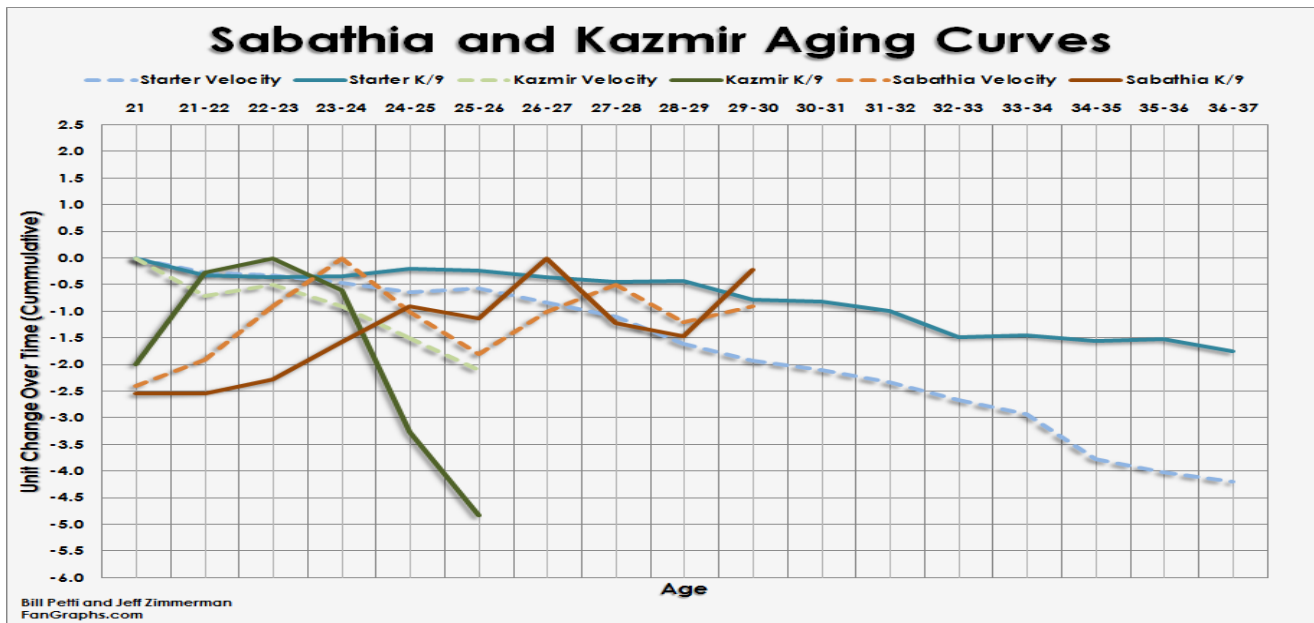
Below is a graph of this phenomenon:



For relievers, after slight uptick in strikeouts at age 25, and a flat rate until 27 to 28, K rates fall at nearly a parabolic rate (this is seen in WAR too).

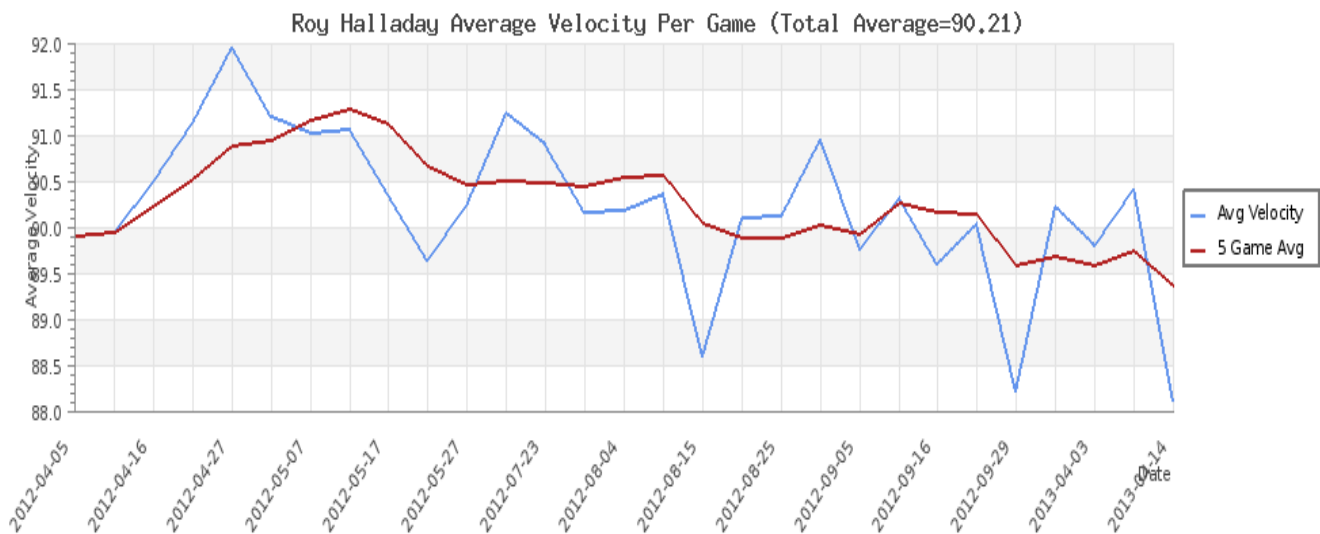
Starters' velocity mirrors relievers' velocity, but that does not translate to K/9IP rate fall off. This happens at a slower rate. From 23-29, K rates stay relatively flat, with a spike up at 24-25. Then from 29 to 32-33 years old, there is a full unit of decline. Finally 32-33 to 35-36, the rate is flat again. This stepwise fall could be the adjustments made from gaining mastery of stuff; utilizing more off speed pitches, while losing velocity; but compensating to be effective.

Why is important? All teams must look at various free agent targets to fill needs in their rotation, as minor league arms may not be ready to fill roles in either the pen, or rotation. So velocity plateau, age, injury risk are all measured.



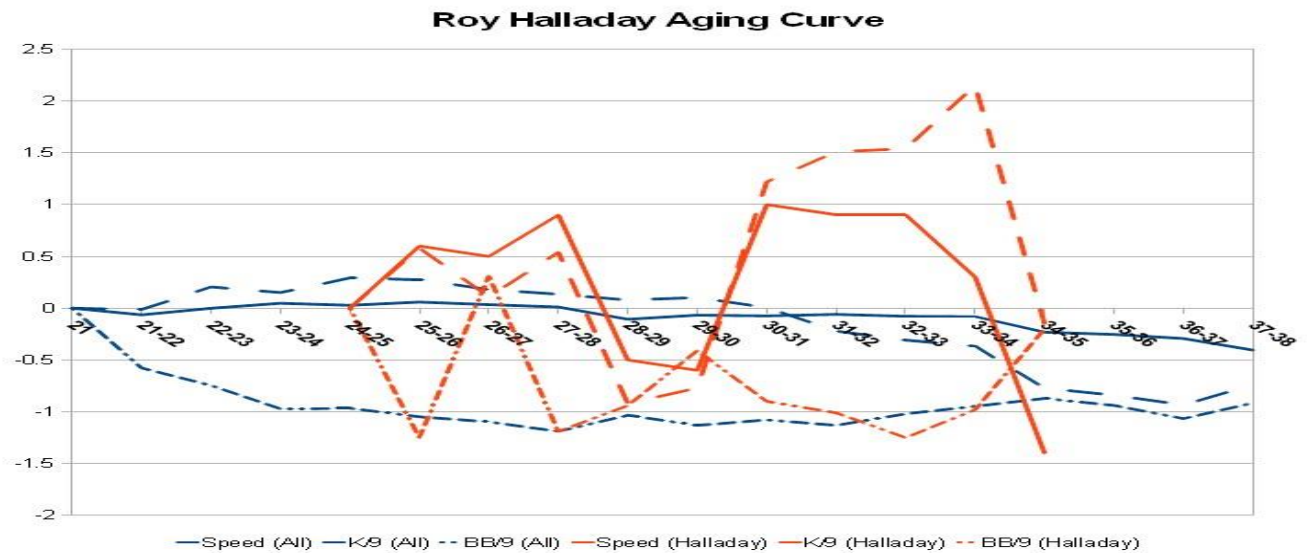
Kazmir's drastic drop in velocity from his peak at 22 years old seemed to spell doom: a short career. CC Sabathia, followed the more stated pattern, becoming a highly sought after arm, acquired by the New York Yankees and paid ace-like money. (In 2013, Kazmir rebounded on velocity and strikeouts at 29-30 years old; reached the All-Star game in 2014 but with more craft than pure gas.)

Roy Halladay's Velocity Chart for his Cut Fastball, his 'base' pitch:



Doc's velocity declined substantially enough that health issues were targeted as the reasons behind it. He was shelved after only seven starts in 2013, with a shoulder surgery pushing him to the DL. A bulldog competitor, he came back to the mound in late July (CBS Sports), meaning: Roy made a late season audition schedule to show a surgery worked, and that his velocity was not lost completely.

Halladay's results: he failed the final test, leaving his last start at 83MPH. He soon retired from baseball. A legend – and soon – will be a lock for HOF enshrinement.



Zimmerman did a pointed 2012 study of Halladay that reflected Doc had aged well, or, at least, bucked the overriding trends in analysis done. Zimmerman made these statements regarding Halladay, and pitchers in general:

“While Halladay has been able to main a relatively constant fastball velocity over the years, it has bounced around a little from year-to-year. - Whenever Halladay’s velocity moves up, his K/9 goes up and his BB/9 goes down. Likewise, when his velocity drops, his K/9 and BB/9 increase. Crazy how that works, right?

As long as a pitcher is able to maintain a certain velocity, like Halladay has, the player can generally pitch with the same results year after year. It’s only when the pitcher begins to lose velocity that he sees his stats degrade at a higher rate. Sure, velocity isn’t everything with a pitcher — but it’s important. Pitchers who maintain their velocity don’t really ‘age’ — they stay the same.” (Zimmerman, *Pitching Aging Curves; Maintaining Velocity* 2012)

As pitchers are a formidable piece to evaluate (with all the methods available), it is important to get them early (under 20); mold them correctly. Nurture and develop them on good throwing programs – long toss to improve arm strength – and limit high-leverage pitches, high pitch counts, or times when their mechanics are going awry. No one is immune to arm, back, shoulder injury, and now, with \$20 million plus invested in a single season – and \$200 million in a contract – pitchers are not just some easily had commodity, replaceable on a whim.

Because pitching, as Connie Mack stated, is a hefty percentage of success in baseball. Or as Bill James surmised, “[Baseball is] 42 percent hitting, 8 percent baserunning, 37 percent pitching and 13 percent fielding (Brunell 2010).”

Everyone has their number.

2.3. Fielding: A Quest for Near Perfection

Around the time as Ruth's home run barrage started, in 1920, fielding averages improved by a mark contrast to prior years. Innovation towards a better glove furthered the modernizing impetus to game play – as the errors of the past were uniquely tied to ball life, glove design, field of play, and training.

In the late 19th century, great fielding was praised so much by legendary writer Henry Chadwick not because it was usually good; but because it was not uncommon to see double-digit errors in an era without “pocket” gloves, but with “palm” padding. The Philadelphia Quakers in 1883 average over 6.39 errors per game in the National League. The Baltimore Orioles of the American Association committed 624 errors in 96 games in the same year. Fifteen teams between 1895 and 1903 racked up over 400 errors. Good (or clean) fielding just stuck out in the imagination during these error-prone games – because such was a rarity.

Sometimes, the usage of a glove by a player was chided by opposing players and fans alike. But as the century flipped, the first twenty seasons of twentieth century saw glove innovations as an individual-to-individual concern. Most players utilized several gloves dependent upon the situation, whether warming up before hand, or in regular game play. The practice of leaving gloves on the field was in vogue. Players likely improved skills as much by their own designs, or in spite of their managers, as not.

In 1919, Bill Doak, a veteran spitball pitcher for the Cardinals, took to modifying his glove by removing padding, enlarging the thumb, soaking the glove and shaping it in what is still the usual method to create a pocket (Kaplan 1989, 55). He approached the Rawlings Sporting Goods Company in St. Louis, assisted by their production chief, William P. Whitely (S. Steinberg, Bill Doak 2004), in creating the first modern glove that met successfully the primary functional requirement: to catch a baseball cleanly. The design made it possible to catch the ball just in the pocket area created.

In 1920, Rawlings came out with the \$10 “Premier Players’ Glove” and soon, the Doak Model became a Rawlings staple for many years to come. With this innovation taking place at the same time as the offensive outburst discussed, fielding grew easier due to the cleaner, more visible, and less-variably weighted baseballs than in years past. It allowed a player the convenience of throwing a truer sphere; now easier to see in its flight. So while hitter's averages were skyrocketing over .300, fielding percentages were rising too. Errors were now based nearly on skill (or a lack thereof): not on the ball's unusual whims; a dark blob in flight; or the nightmarish fielding surfaces. (That can annoy many a player...even today. With speedier hits, balls still got by the newly gloved.)

Most people have seen old films of small shoddy mitts used in the early years and asked, “How did they field baseballs with those?” Given the errors seen in both leagues, and the number of unearned runs and players hitting over .400 pre-1920 (who benefited from a home-friendly scorekeeper, such as writer Dan Daniels during DiMaggio's 56-game hitting streak (Cramer 2000, 162-163)), one

could surmise that fielding was very much an inherent ability. Meaning, the raw talent drove the ability as much as practice and technique did.

One can imagine that the typical white farm boys seen in baseball *then* concentrated on hitting first, played whatever position suited their innate skills or fancy, and improvement came by natural maturity, through game play, or, not at all. Biomechanical and video training were not envisioned, so only the old-timers, who themselves had even less to work with, could likely only teach the very best and intuitive players. The old school probably did not work much with marginal talents that, under a different paradigm (existing in the future of baseball) emphasized better fundamentals, and in the baseball schools to crop up much, much later. (The first Little League World Series took place in 1939. So, by early 1950s, the crop of youngsters raised with formal leagues improved the minimum playing levels on defense.)

Even men like Branch Rickey seem more concerned with a players' stability (marriage and family meant a more malleable player at contract time) and whether the guy had a speedy, athletic body. Such speed is vital – or rather, one's reaction time – to making an instinctual play seem routine. A player at 3rd base has nearly as little time to field a sharp liner to his left or right as a batter does in hitting the ball - .55 seconds from time of impact to the fielder. (A 105+ MPH baseball hit 85 feet that can knuckle, dive, and rise is just as hard to handle as a 95-MPH heater, while making supreme body coordination at the hot corner paramount to success.)

As pitchers and fielders grew more specialized, with snazzy names for pitches (circle change, split-finger fastball, knuckle curve, palm ball), a different glove for each position, batting averages rarely topped .400 after the Doak innovation. In essence, by 1941, with "the greatest hitter who ever lived" going for .406, that was the end of .400. (Only a handful have carried above a .370 BA for a season – great hitters all – Rod Carew, George Brett, Tony Gwynn, Barry Bonds, Larry Walker, and Ichiro Suzuki of the *LBJ, Reagan, Clinton* and *Bush Eras*.) But alas, none reached the promise land of .400 hitting in MLB.

One's speed and the opposing glove men stood as barriers to the goal. But it might happen, someday.

Year	Player	AB	H	BA	Year	Player	AB	H	BA
1884	Fred Dunlap	449	185	0.412	1911	Ty Cobb	591	248	0.420
1887	Tip O'Neill	517	225	0.435	1911	Joe Jackson	571	233	0.408
1887	Pete Browning	547	220	0.402	1912	Ty Cobb	553	226	0.409
1894	Sam Thompson	437	178	0.407	1920	George Sisler	631	257	0.407
1894	Ed Delahanty	489	199	0.407	1922	Ty Cobb	526	211	0.401
1894	Billy Hamilton	544	220	0.404	1922	George Sisler	586	246	0.420
1894	Hugh Duffy	539	237	0.440	1922	Rogers Hornsby	623	250	0.401
1895	Jesse Burkett	550	225	0.409	1923	Harry Heilmann	524	211	0.403
1895	Ed Delahanty	480	194	0.404	1924	Rogers Hornsby	536	227	0.424
1896	Jesse Burkett	586	240	0.410	1925	Rogers Hornsby	504	203	0.403
1896	Hughie Jennings	521	209	0.401	1930	Bill Terry	633	254	0.401
1897	Willie Keeler	564	239	0.424	1941	Ted Williams	456	185	0.406
1899	Ed Delahanty	581	238	0.410					
1901	Nap Lajoie	544	232	0.426					

The table above reflects the fall off of .400 hitting. In the graph below, the reduction in the % of Unearned Runs to Runs Scored started in 1920. Also, the % of Unearned Runs to Errors Made by fielders stabilizes, staying between 54% and 62% of Unearned Runs per Error for the vast majority of the modern baseball history since 1920 season. With Doak's glove, whiter and cleaner baseballs, fielding evolved, and improved, throughout the last century.

Given these improvements to defense, most players in the major leagues must be minimally competent to play one position. (Unless they become just a lifetime designated hitter, unlikely, as a twenty year old has to show enough to be consider for The Show. Though, if a team can carry a non-fielder, it has to have several versatile players elsewhere: the Pete Rose/Darrell Evans/Ben Zobrist types.)

As a result, the ability to stand out as a defensive star for any period, even a season, does get notice in the record books. Some players are known for their gloves, even with an ever-changing emphasis on positions being once a defensive standout (SS) to evolving into the most offensively productive too. (See Appendix C: Top Fielders by WAR (1908-2013))

Graph: Unearn Run % and Ratio of Unearn Runs to Errors Made

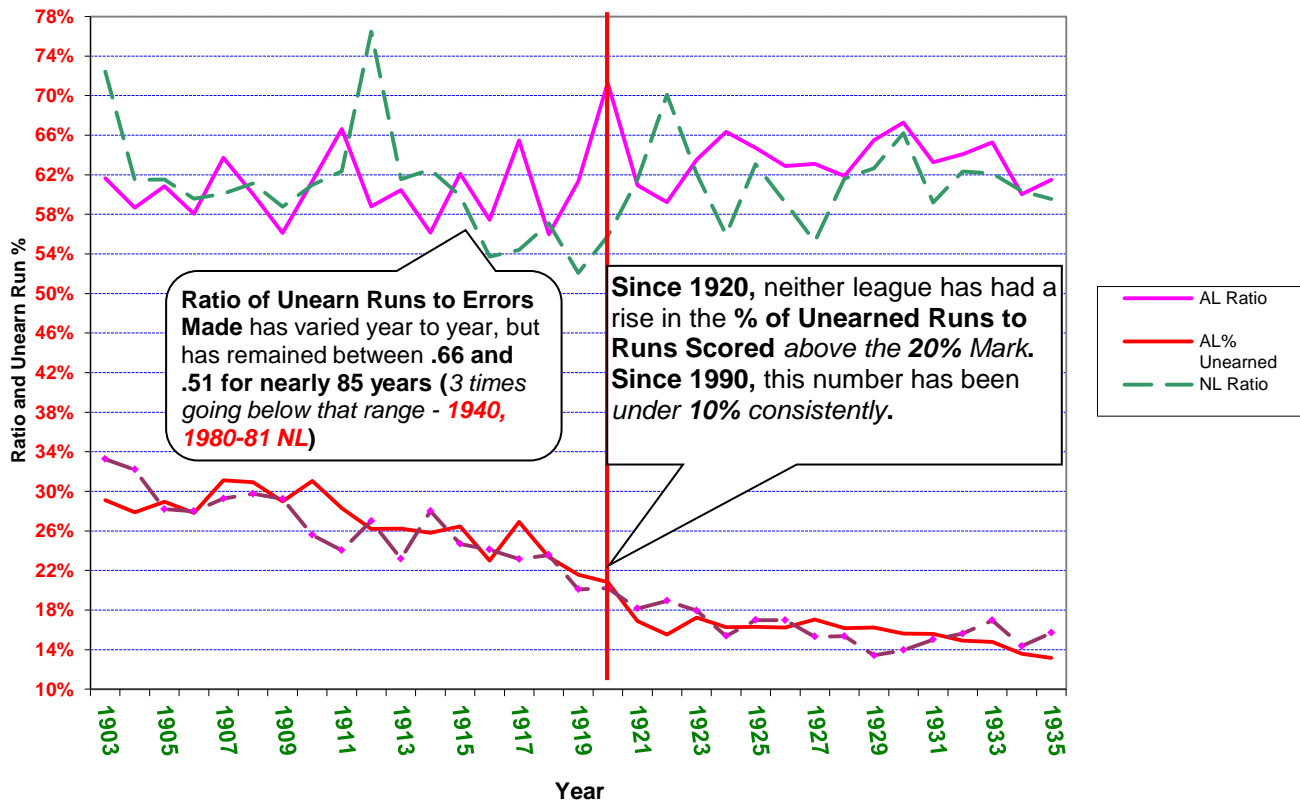


Diagram. An All-Defensive Team Across Eras
The Best Gloves, All-Time



Not only is this group a defensive powerhouse, quite a few are noted for their great all-round abilities, changing the tides of historic games. Brooks Robinson's glove stymied the Cincinnati Reds in the 1970 World Series. Mazerowski, in game seven of the 1960 World Series, accomplished what every kid dreams of in their backyard. Roberto Clemente was immortalized during his 1971 World Series exploits. Ozzie Smith, back-flipping playoff heroics in 1985, was the engine of the 80s Cards; Willie Mays and 'The Catch' in 1954; Richie Ashburn's

once strong arm saved the 'Whiz Kids' in 1950; Kirby Puckett robbed a sure extra-base hit, then went deep in 1991 World Series game six; and Johnny Bench closing out the '76 World Series with two homers, winning the series MVP. Gibson, Morgan, Sandberg, Bonds, Yount, and Carter, took their franchises to previously unattainable heights in their best years. Meanwhile, Rickey Henderson stole over 1,000 bases as a free agent, gun-for-hire in Reagan/Clinton eras. Mike Schmidt was the face of the Phillies franchise for nearly two decades.

Their skills with the mitt (and the bat) make for legacies not forgotten.

Table. Gold Glove Selections from 1957-2008

P:	C:	1B:
Greg Maddux: 18	Ivan Rodriguez: 13	Keith Hernandez: 11
Jim Kaat: 16	Johnny Bench: 10	Don Mattingly: 9
Bob Gibson: 9	Jim Sundberg: 6	George Scott: 8
	Gary Carter: 3	Vic Power: 7
	Charles Johnson: 4	J.T. Snow: 6
		Eddie Murray: 3
2B:	SS:	3B:
Roberto Alomar: 10	Ozzie Smith: 13	Brooks Robinson: 16
Ryne Sandberg: 9	Omar Vizquel: 11	Mike Schmidt: 10
Frank White: 9	Luis Aparicio: 9	Scott Rolen: 7
Bill Mazerowski: 8	Dave Concepcion: 5	Buddy Bell: 6
Joe Morgan: 5		
Bobby Grich: 4		
Nellie Fox: 3		
LF:	CF:	RF:
Barry Bonds: 8	Willie Mays: 12	Roberto Clemente: 12
Dave Winfield: 7	Andruw Jones: 10	Al Kaline: 10
Rickey Henderson: 1	Ken Griffey, Jr.: 9	Ichiro Suzuki: 8
		Dave Parker: 3

A few quotes on the best fielders in baseball history from Jim Kaplan's *The Fielders*:

Vic Power: "Some people didn't like the way Vic Power played baseball. He caught everything one-handed...They called him a showboat, and a loafer. He was a black player in the 1950s who refused to be silent in the face of heckling and abuse, so he saw plenty of beanballs and fights. But Power was a marvelous first baseman...Power signed with the Yankees in 1950, and hit .349 in Class AAA in 1953, but wasn't brought up to the majors despite the fact that two Yankees first baseman were sidelined in August...[the Yankees] didn't have a black player on its major league roster until Elston Howard (Kaplan 1989, 132)."

Bill Mazerowski and Roberto Clemente: "From 1956 to 1970 the two greatest glovemen in the history of their positions – second baseman Bill Mazerowski and right fielder Roberto Clemente – started together for the

Pirates...‘Clemente broke in a new glove every year,’ says Mazerowski.‘ It was a habit he got into. I used only three or four in my career...’ (Kaplan 1989, 73).”

Ozzie Smith: “St. Louis shortstop Ozzie Smith is not only the best gloveman in the game today [circa 1987] but, almost unique among modern ballplayers, Smith has a sense of history. In fact, the “Wiz” displays a collection of old gloves at his St. Louis restaurant. ‘You had to be talented to use these gloves,’ says Smith. ‘They make you appreciate the old ballplayers.’...[Smith] uses the Trapp-Eze so-called six-finger model that Rawlings introduced in 1959, temporarily discontinued...With its small, tight webbing and stubby fingers bent in like the hand of an arthritis victim, the glove is constructed to catch the ball in the palm, the way fielders use to (Kaplan 1989, 63-64).”

Johnny Bench: After Paul Richards introduced an oversized mitt to handle Hoyt Wilhelm’s dancing knuckler, “Hundley-Bench model [was introduced.] Popularized by Cubs’ Randy Hundley and Reds’ Johnny Bench, the trimmed-down glove has a long pocket and a central hinge that makes the glove close upon impact...Changing gloves, Bench further modernized the position by catching one-handed like a squatting first basemen.” (Manny Sanguillen and Tony Pena of the Pittsburgh Pirates took the one-hand, and added the leg-under the butt mode with one leg propped up in a seemingly causal style, creating a low target with a crab-like snap of the glove. Pittsburgh got to the 1971 and 1979 World Series under Manny.)

Willie Mays: “Willie Mays made a number of gloveless grabs, including one a Roberto Clemente line drive in Forbes Field’s deep center, which Pittsburgh executive Branch Rickey called the greatest play he’d ever seen (Kaplan 1989, 136-137).”



Roberto Clemente (1934-1972): Considered by writers as having the best right field arm. He was liable to throw out people from the warning track *backing up*. 1971 World Series: made a 300 foot throw under 3 seconds, 95MPH release. And singles turned into outs, if a runner was too lazy to first. He could do everything else on a baseball field too. Hit for average, power, and ran the bases well. He was proud, intelligent, and dominated the 1971 World Series, taking the Pirates to a title – and obtaining the WS MVP.

Clemente died tragically on New Year's Eve 1972, ending up with exactly 3,000 hits. A credit to baseball and humanity.



A Modern Ball and Glove, the Scott Rolin Model (Wikipedia Commons)



Ozzie Smith: *The Wizard of Oz* grew legendary for his stretch-parallel-to-the-ground maneuvers and back handsprings out to shortstop. Smith made weak-hitting shortstops everywhere work on every skill needed to prove superior worth as a defensive stopper. To date, no one has quite topped the Wizard's glove work during the past 30 years. (**Picture:** Courtesy of Jay Scott)

Typical Skills Needed by Fielding Legends (1980 – Present)

It is difficult to surmise the legacies of the glove men prior to 1950. Just about anything in that era comes through sports scribes that did not always report the total truth – if they wanted to remain 'best boy' in the ownership's stable of promoters of the team's exploits. So, this author is at loggerheads to the task of defining who was the best ever in the field – while acknowledging many pre-Ike era players employed skills worthy of noting. (And based on uniform reporting, one could determine better the impacts of their individual gloves.) Baseball Reference (WAR) and *Fangraphs* (Total Zone Rating) were queried to do some quick analysis, but neither is a perfect tool across eras in baseball. Highlight reels and fond remembrances from the 1970-80s certainly can help to narrow the field of the best leather men. But again, the author was but a

child, and those remembrances, while possible, were not made with any experiences to measure against, or any discerning on my part then.

So this fielding analysis reflects on afternoon TV games or a rare few 'live' at the ball yard. Lastly, each position on the field has its necessities and trademark touches to be analyzed and viewed through more lenses than one can fathom. Interview five guys in (or out of) the professional game, and you will get five opinions. Here is but one.

Glamour and Glove Masters

The best and most memorable plays usually take place at two positions: centerfield and shortstop. These men have the most athleticism generally on the field. They cover ground with ease; have unusual hand-eye-foot coordination, even for a sport that obviously demands it. People watch these positions because, simply, the deciding action takes place around their gloves – more often than other positions. (Not without exceptions.)

Centerfielders top talents are a reaction to the crack of the bat, ranging left, right, or straight back to a place inches from a home run. Awareness of the quirks of a field as they climb up 10 foot walls, dive for short liners or dying pop-ups, and the desire to cut down distances by knowing the batters and the pitcher's skill set. Good ones stand out. They are fearless; and trained to get anything in the zip code of the ballpark. Their ability to cut down runners (like all outfielders) lends more aura to their special skill sets.

Best Centerfielders of the modern ESPN era seen (in no particular order): Mike Cameron, Curtis Granderson, Eric Davis, Ken Griffey, Jr., Kirby Puckett, Brett Butler, Devon White, Andre Dawson, Dwayne Murphy, Andruw Jones, Jim Edmonds, and Kenny Lofton. If you name some modern game-saving catches, Devon White and Kirby Puckett go on that list with World Series-altering glove work. Dawson, when in Montreal, was as complete a defensive outfielder as desired.

While the centerfielders get the glory of over-the-shoulder catches, scaling walls, or diving in to convert a single to an out, the shortstops get their hands dirty on hot smatches, dribblers that are hits-in- process, and behind-the-base grounders that carry them to short centerfield. Shortstops are born – their gifts are so unique – to field balls in ways that conjure, "how the hell did he do that?" Shortstops rarely can bobble a ball – a runner beats a hesitation – so the ability to cleanly transfer a one-hop shot, or scoop a dying quail of a grounder is a matter of practice, and genetically soft hands (or countless repetitions). A slow-footed shortstop is not an option to a team's defense. Smart positioning and arm strength can get back what age takes, but it takes special skills to last long at the marquee position of fielding. (Shortest span of years played with 500 games amassed in an Era: 9.26 years compared to 10.65 for catchers.)

Best SS of the modern ESPN era observed (in no particular order): Ozzie Smith, Cal Ripken, Robin Yount, Omar Vizquel, Jack Wilson, Rafael Furcal,

Alan Trammell, and Alex Rodriguez. Growing up around Chicago, Smith was the pesky fire under all those hot-kettle St. Louis Cardinals teams. The Wizard (again) is in a class by himself of acrobatic maneuvers. Yount was a top-tier centerfielder. Furcal has a cannon arm – and never failed to use it. A-Rod was a better shortstop than Jeter, and yet, moved to 3rd base upon his arrival in New York. (Jeter should have moved, if any sabermetricians had their call on it. A-Rod turned into a pretty proficient hot corner man.) Trammell is underrated.

Lunch Pail Positions

Not to take away from their tasks, but the 2nd basemen, left fielder, and 1st basemen are the steady Eddies of the fielding group. They carry out the seemingly uneventful while avoiding the tragic.

Second base is an artful dance for the best. Athletic men can carve out a niche alongside a classic shortstop, giving a team a top keystone combo that shuts down rallies through double plays. The ability to avoid runners and spikes, range far behind second, or cover up for a statute-like first bagger, makes second baggers the shortstop-*lite* position. Agility and soft hands will give a two-bagger a long run at the position.

Best 2B in the modern ESPN era observed (in no particular order):

Frank White, Chase Utley, Orlando Hudson, Craig Biggio, Carlos Baerga, Roberto Alomar, Lou Whitaker, Jody Reed, and Ryne Sandberg. Sandberg in his early years was agile and completely confident in his throws – rarely ever making that error. Biggio will join Sandberg and Alomar in the Hall soon. Utley became the Reggie Jackson of the Philadelphia Phillies in 2009, slamming five home runs. His instincts and release as a 2nd sacker are highly regarded. White and Whitaker were key cogs on their teams in the Reagan Era.

Left field. Since Manny Ramirez stayed in the majors with left field play that can be describe with his name being his name, left fielders often get a bad rap. Yet, many have combined their prodigious power (and speed skills) with a competitive spirit with the glove.

Best LF: Barry Bonds, Rickey Henderson, Carl Crawford, Willie Wilson, and Tim Lincecum. Crawford generated an incredible year in 2009 under new fielding measures – generating over 100 plays out of his zone. (See next topic.)

First basemen should be integral pieces to a defense. Their range and responses to balls hit to their right, their ability to catch errand throws in the dirt, and make smart cut-offs and throw to bases on bunts can change the entire perspective of a close game. Any athletic guy “stuck” at the bag for long will give teams a decided edge on tasks a muscle man, that moves timber better than their feet, struggles to accomplish. So the guys with the best feet and arm make noticeable what is usually their task: to just catch the ball on the bag for outs.

Best 1st Basemen: Albert Pujols, Will Clark, Don Mattingly, J.T. Snow, Lyle Overbay, and Mark Grace. Bias may slip in here. Grace was a master at scooping up the rocket throws of Dunston – lasers that only a few MLB pitchers could

throw regularly. (Grace led *Clinton Era* in assists per game.) J.T. Snow made plays smoothly; never overly challenged. Pujols started out as a rotating corner man – 3rd and left field. Obviously, he can throw, ranged better than nearly anyone in the modern game – and did it as a righty at a lefty-dominant position. (At least this was true while he called St. Louis home.)

Guns, Guts, Grit and Gumption

Right Field. If one finds themselves watching more intently on flies to right field with runners on second or third, it is because the man in right throws tracers to the bases and men fall under their fire. Or they don't – to a fan's chagrin. Guys in right must launch a baseball 250-300 feet on a dime at 95 plus MPH. Stop runners from going first to third makes for happier managers that often see a big inning in the making with a merry-go-round hits to the outfield.

Best Right Fielders: Ellis Valentine, Ichiro Suzuki, Vladimir Guerrero, Jesse Barfield, Dave Winfield, Dwight Evans, Tony Gwynn, Dave Parker, J.D. Drew, Jeff Francoeur, and 2013 entry: Yasiel Puig. Ellis came into the league and wowed with his arm – you just didn't run on this guy (he ranked 5th overall in the ARM study in RF). Ichiro is the gold-yen standard of RF excellence. After the 2014 season, Ichiro's HOF credentials are complete. Vladimir was murder on runners while he played in Montreal. Dwight Evans mastered the weird right field area in Fenway. Francoeur made throws that scared off runners from any advancing to the next base. Dave Parker was another with a claim check on the best arm in the league for a spell as a 1978 pre-game All Star contest pitted him against Ellis Valentine. (*The Cobra* was a bit lackadaisical otherwise in other aspects of fielding from memory.)

In a 2000 sabermetric-styled paper on defensive work on singles to the outfield with runners on base, Clem Comly cleverly created an *average run equivalent method* (ARM) (Comly 2000). In his analysis of 1959-1987 players, the following guys were above par at holding or cutting down runners:

Table. ARM Rating (1959 – 1987, Clem Comly)

Left Field	Center Field	Right Field
1. Carl Yastremski (-56)	1. Dwayne Murphy (-38)	1. Johnny Callison (-39)
2. Jim Rice (-26)	2. Cesar Cedeno (-35)	2. Jesse Barfield (-38)
3. Willie Wilson (-24)	4. Andre Dawson (-29)	3. Roberto Clemente (-34)
7. Tim Lincecum (-19)	8. Willie Mays (-26)	6. Dwight Evans (-25)
8. Rickey Henderson (-18)	9. Dale Murphy (-25)	10. Dave Parker (-18)
10. George Bell (-15)	10. Willie Davis (-24)	11. Dave Winfield (-17)

Note: Yaz & Rice played home games in Fenway Park – with its short left field.

In 2014, the next generation of gunslingers took over this leaderboard, but with physics measurement tools to support their heroics. Eric Lang compiled a list of great throws. He captured data on time in the air, release speed, and distance of these missiles that made runners think again about choices. The data reflected that arms are still present on both corners as Yoenis Cespedes and Yasiel Puig's talents put them at the apex of "have gun, will shoot you down."

COMPARING THE GREAT THROWS (LANG, 2014)							
Player	Date	Ballpark	Distance (ft)	Time (sec)	Avg Horiz Speed (ft/s)	Release speed (mph)	Release angle (degrees)
Yoenis Cespedes	6/10/2014	Angels Stadium	300	2.8	107.1	101.5	10.5
Yasiel Puig	6/3/2013	Dodger Stadium	280	2.56	109.4	100.2	8.9
Rick Ankiel	4/16/2012	Nationals Park	285	2.72	104.8	97.2	10.4
Rick Ankiel	5/7/2008	Coors Field -1st	280	2.57	108.9	95.2	10.4
Rick Ankiel	5/7/2008	Coors Field-8th	325	3.1	104.8	97.4	14.3
Ichiro Suzuki	4/11/2001	Oakland Coliseum	215	1.93	111.4	94.2	5.9
Vladimir Guerrero	7/7/2001	SkyDome	295	2.73	108.1	100.6	9.1
Jose Guillen	4/27/1998	Coors Field	335	3.05	109.8	101.6	12.2

Lang concluded that, "there may be other better throws simply from a physics point of view, but that have been forgotten because they were unsuccessful. Yoenis Cespedes' throw may end up being one of the best of the year and one can see that it stacks up nicely against great throws from the past. However, I do not wish to declare a winner; I only hope that this analysis will introduce quantitative arguments into what are normally emotional debates and try to turn pathos into logos (A Physics Comparison of Great Throws From Years Past)."

3rd Base. Growing up, the author wanted to be Brooks Robinson. Problem was: left-handers don't play there. So, Mike Squires was the one-off model for attempting to play 3rd base. (Squires played 14 games at the hot corner for the Chicago White Sox. The author played about 30 games in Babe Ruth/high school at the position, brutally. But this added to athletic skills in other arenas.)

No position has a stranger mix of plays to manage than third. One play a player takes a bullet right at the face. Next, they will charge a dribbler throwing off balance. Then, a foul pop carries them into the stands. Finally, positioned off the line, a firm two-hopper goes past the bag, they corral it, then, have to throw a 150-foot strike to nip a speed merchant. High choppers that make it a do-or-die bare hander, or the short scoop, or bunts to the line where one must decide to let it go foul, or attempt a play on it. Positioning – changes with every batter, and nearly, every pitch. Now with shifting, shortstop throws. One must be hyper ready; or risk permanent bodily injury that only a hockey mom could love.

The best make this look effortless to dive to the front side or scoop up a bullet on a short hop, but likely, will never see a consistent .980 fielding average for a full season. Throws, and petty scorers, that have never played the position, will keep guys from getting to .985 in a complete season. (Even as fielding % is archaic way to measure success with modern statistical fielding analysis is taking hold. *Big Data* in a few years will redefine who is really good.)

Best 'modern' hot corner guys: Mike Schmidt, Terry Pendleton, George Brett, Buddy Bell, Gary Gaetti, Eric Chavez, Alex Rodriguez, Ryan Zimmerman, Adrian Beltre, and Scott Rolen. Pretty much any guy that stays there for most of their career should get a medal on guts alone. Honorable mention: Ken Caminiti

had some great plays while at the top of his game. Old school: Ron Santo, Clete Boyer, and Brooks Robinson.

Catchers. If third is brutal for the types of balls seen, then catchers have that setup with regularity, and do it on purpose (calling pitches in the dirt). They are the human target for all balls and runners alike. It takes a certain, identifiable grit to put on 'the tools of ignorance', and succeed. Also, smarts, aggressiveness, control of the game, and one's emotions, and communication to all players is just a short list of catcher's responsibilities and attributes. Knowledge of 100s of hitters, their weaknesses, possession of the pitching staff's confidence, and a rifle arm are handy for making a quality, defensive-minded backstop.

Here too is what scouts are drooling for in the makeup of a catcher (Herrmann Unknown):

- Stance – Athleticism
- Setting Up for Pitches
- Framing Pitches for strikes
- Blocking Skills
- Throw Mechanics (footwork)
- Fielding of Bunts
- Plays at the Plate
- Field Leadership
- Bullpen Session Work Ethic

To add to this dilemma, rating catchers defensively is hard, if not impossible. How responsible are they for a pitcher's ERA or strikeouts? How much are they responsible for stolen base when a pitcher is horrid at holding them on? (Greg Maddux.) Bunts? Framing pitches? Wild pitches? Calling the game? Tempo?

Many names can go into the hopper – just because the team they played on had success – and many defensive/game-calling experts are part-timers because a team carries them for the intent to supplement, or teach, the younger and more offensively-talented backstop how to become a superior catcher. These elder guys hang on because the position lacks abundance of complete guys to handle over 130 games. (Overwork and knee problems are the position's bane.)

The best backstops defensively: Ivan Rodriguez, Johnny Bench, Bob Boone, Gary Carter, Jim Sundberg, Yadier Molina, Tony Pena, Brad Ausmus, Rick Dempsey, Carlton Fisk, Lance Parrish, and Joe Mauer. Mauer signed an 8-year contract worth more than all these catchers combined earnings listed. Because: He is presumed better with a bat than all the others on this list. (Hitting .365/.444/1.031 gets players close to \$20 million plus per year in 2010.) **Note:** Bench, Fisk, Carter, and I-Rod have stats for a career to force an argument – but Mauer still has eight years to prove his worth even as he transitions to DH/1B.

Jim Weigand recently compiled an excellent and current analysis of catchers' arms in 2009 that covers over 50 years of base running negation. Weigand's list puts this facet of catching in a proper light. Johnny Bench and Ivan Rodriguez have long runs as the best throwers in the game, both taking that title seven times straight. Bob Boone had five top seasons; Jim Sundberg twice took the crown; and Yadier Molina was the top arm in 2007 and 2008 with Mauer taking a second in 2007 (Weigand, Rating the Catchers 2009).

The top 20 catchers' arms: Rodriguez, Bench, Howard, Battey, Munson, Karkovice, Boone, Crandell, Azcue, Macfarlane, Santiago, Martinez, Roseboro, Yeager, Matheny, Dempsey, Wilson, Valle, Sundberg and Ausmus (Weigand, Rating Catcher's Arm 2008). (**Note:** Mauer had not amassed enough outs in the box to get a lifetime rating. Matt Wieters is another on-the-cusp guy.)

Pitchers. Two names: Greg Maddux and Jim Kaat.

If a pitcher can make plays on bunts, cover the base on grounders on the right side, and keep from becoming a vegetable on hot smashes through the box, he is adequate. Maddux was the master at making his presence on the mound – fielding anything close. This made up for his notorious inability to stop base stealers, as mentioned above. Modern masters out in LA: Zack Grienke and Clayton Kershaw gobble up bunts and are agile and quickly pounce on balls. (Grienke was a power-hitting shortstop in high school.)

Sabermetric Fever, Catch It?

The future of baseball statistics lay in recording fielding exploits. This task was never a part of the old statisticians' job: that of just who made the outs and to whom on the field; and whether to hand out an assist, a putout, or an error. Now, these statisticians report how many balls did a centerfielder not reach that he should have; develop homegrown run stoppage metrics; or track how many balls sneaked by a shortstop at a certain distance from a labeled "zone."

With new insights, first compiled by *Retrosheet* in the late 1980s, new questions grew. Metrics like Revised Zone Rating (RZR), Spatial Aggregate Fielding Evaluation (SAFE), Ultimate Zone Rating (UZR), Plus/Minus factor, Defensive Efficiency Ratio (DER) attempted to answer fielding questions– if not were accepted as good answers. As *The Sabermetric Revolution* authors wrote, "We are not alone in remaining dissatisfied with these metrics, which have been likened to 'a flashlight in a dark room (Baumer and Zimbalist 2014, 64).'"

As technical and recording advancements for "mapping out" the actual field of play came about, player and team defense grew popular for next *Moneyball* exploitation. Teams who took to the sabermetric field, post-2002, hired math majors, employed stat-heads, who then gobbled up all the low-hanging fruit rather quickly. But defense (fielding) represented a last substantial territory to team effectiveness, once the data is harnessed right. Many of the above "tools" are proprietary calculations: in essence, a business model based on "a statistic" to sell to interested parties. These measures are not without critics and often they are beholden to quirks in recording based on ballpark factors (68).

Mitchel Lichtman, very closely tied to the fielding revolution from the 1980s forward, gave 10 lessons he learned about defensive statistics with both history and underling metric thoughts included. A few are excerpted here:

"Around 2000, I think, STATS came up with an Ultimate Zone Rating, whereby it assigned different values to catches or non-catches in various locations on the field for each fielder, rather than using one single zone for each fielder (and some shared zones). The assumption was that not every

ball in a fielder's zone was equally difficult to catch even though ZR treated them all the same. That might seem obvious today, but as with every new discovery or invention, it was apparently not so obvious at the time, and was considered somewhat of a breakthrough in defensive evaluation—at least by me.

For some reason, STATS abandoned this methodology after its initial presentation in the Scoreboard, and it was never heard from again, until John Dewan resurrected a modern, more advanced version, the plus-minus (PM), and eventually defensive runs saved (DRS), with BIS almost 10 years later. So the credit for the original Ultimate Zone Rating, goes to STATS and not to me. I loved the concept and enthusiastically ran with it. I also kept the name, which was eventually shortened to UZR...

...In order to understand UZR and defensive metrics in general, it is important to first ask the proper questions. In fact, the proper question is the most important thing when it comes to crafting any effective metric. One has to be perfectly clear what one is trying to capture in order for the metric to be any good, and the methodology has to do an adequate job in answering it...

Here is the key question when it comes to just about any good defensive metric, even the theoretical perfect one: Given the nature and location of each batted ball, how likely is it that an average fielder at each position would turn it into an out? If we knew the answer to that simple question, our job would be almost over and the results would be near-perfect. Let's say that for a certain batted ball, say a fly ball to a certain location in center field, the answer to that question was "zero" for all fielders other than the center fielder, and for him it was 80 percent. First of all, how do we know those numbers? That's simple too. We look at all such balls over some lengthy period of time, say five years, and we count how often each fielder catches each one of them and how often they don't. In our example, no one but the center fielder ever catches that type and location of fly ball, and the center fielder catches it 80 percent of the time—a pretty routine fly ball that presumably all the but the slowest or worst center fielders are able to catch (or those who are "out of position" for various reasons, which we shall discuss later)...

I don't know to what extent the other advanced defensive metrics handle park factors, but to me, they are quite important. Surely you can't use league average catch rates for left fielders at Fenway or the vast expanses of Coors Field or even the short porches in Yankee Stadium and Minute Made Field, among other quirky parks. As well, ground balls in Denver and Arizona scoot through the infield like a hockey puck on ice, whereas they get eaten up by the tall infield grass at Wrigley." (10 Lessons I Have Learned about Defensive Statistics 2014)

For their part, (Baumer and Zimbalist 2014, 68-72) offered up their numbered list on how to illuminate better defensive metrics, the newest field of inquiry:

1. UZR is a black box. Lichtman's system generated poor results in comparing 2009 Jason Bay versus 2009 Manny Ramirez; one that was rectified ad hoc. "There is no assurance that the computation is mathematically sound, does not contain bugs, or even that the numbers are picked out of a hat."

2. No confidence intervals or standard errors. "Even stalwart proponents of UZR, such as Fangraphs' Dave Cameron, suggest that the margin of error is +/- 5 runs per season. This means, among all players from 2002 to 2011, almost 92 percent had performance that was not distinguishable from zero at their position."

3. Separation of skills. The author would hone in on this factor. The positioning prior to the ball being hit, and the arrival of the ball at distinct place on the field, determines a player's range. But if through bench coaching, a player is in the right place to start (or on his own initiative) he garners less credit for range. Both are a skill – positioning and range – one is intellect and comprehension of the situations at hand; the other, more purely physical. Both are essential. If pitchers can toss into their defensive alignments, or catcher's call correctly the pitch, to induce a batter to hit into the alignment, what of their defensive contribution(s)? While a minute factor, it does factor – with fielding shifts the rage.

4. The capturing of model data, how one aggregates the measurements and defines bins. Here, the new *Field F/X* should improve the fielding models as they stated later.

5. Comparison to the SAFE method. SAFE is predictive; Lichtman's UZR is not.

6. Correlative factors not much higher than Batting Averages. Examples: Derek Jeter has either gained a step (in 2009 UZR), or the system needed tightening up.

7. 3 years of data to form accurate opinions. Here there is a "moving target" to hit based on values that were collected for a player at 28 years of age, pre-injury, and now the player is 30, post-injury, which do not reflect much a fielder's skill in the most recent now.

As the professors reflected, *Field F/X* could prove insightful: no longer needing bins, or hand evaluations of whether a player made use of positioning or just range to get the ball; or guessing the level of difficulty (slow, medium, fast) of a hit ball. The use of the system will generate large data packets for the analysts to model going forward. Though, they reference, Bill James does not see this area producing huge benefits, based on recent experiences with Pitch F/X (Baumer and Zimbalist 2014, 71).

In the 2014 season, *Field F/X* was introduced into 3 ballparks. Soon all ballparks will have the amazing tracking and recording tool operating as early

looks showed a host of real-time numbers tied to a player's raw abilities. As discussed, new experiments will evolve. Fielding, as it does interact with pitching, and scouting of players' abilities, will be quantified through finding patterns in the daily "data dumps."

Fangraphs Scouting

From 2009-2012, the list of best fielders is populated with well-known names for various attributes that go to make up of a star fielder. Here's the short list (top 4 – starters in 2013) for these attributes:

Instincts	Ryan Zimmerman	Evan Longoria	Adrian Beltre	Brendan Ryan
First Step	Peter Bourjos	Brett Gardner	Austin Jackson	Carlos Gomez
Speed	Peter Bourjos	Brett Gardner	Carlos Gomez	Jacoby Ellsbury
Hands	Ryan Zimmerman	Yadier Molina	Brandon Phillips	Troy Tulowitzki
Release	Yadier Molina	Troy Tulowitzki	Evan Longoria	Matt Wieters
Arm Strength	Yadier Molina	Troy Tulowitzki	Rick Ankiel	Jeff Francoeur
Arm Accuracy	Yadier Molina	Troy Tulowitzki	Nick Markakis	Jay Bruce
Overall	Troy Tulowitzki	Evan Longoria	Adrian Beltre	Jimmy Rollins

Instincts: Notice that 3rd baseman rule the instincts category. Spiderman lives down at the 3rd sack, having that Spidey sense, an awareness and anticipation of where the ball is going to be before the ball is even hit. 23-year old Nolan Arenado won the gold glove in 2013 and is up and coming Peter Parker.

First Step: Centerfielders, without that first step, makes difficult plays impossible. The quicker that first step to a gap ball, or a crushed liner, the more likely a batter walks to the dugout instead of to second or third. These guys make the right decisions on the best path to the ball.

Speed: Similarly, without that next gear on the field to track balls, centerfielders would be suspect and doomed in their abilities to make diving or leaping catches look (dare say), easy. Again, the difference at the top is pretty small as Andrew McCutcheon, Ben Revere, Mike Trout, and Bourn are identified on the list. Supreme athletes that can go get them and steal bases a bit too.

Hands: Here, we see a wider mix of positions represented in just the top four. Catcher Molina is consistently rated a best catcher defensively – 5-time gold glove winner – and his hands are equally adept with either a glove or a bat. Brandon Phillips hands gobble up grounders at the keystone, ever since he has been in Cincinnati. Shortstop Tulowitzki hands are not even his best tool: his arm is. A few 1st baseman are noted for their hands: Todd Helton ranked high on this list prior to retirement in 2013.

Release: Two catchers in Molina and Wieters to go with Tulowitzki and Longoria.

Catchers are timed constantly for their pop-to-pop time: From when the ball hits the backstop's mitt to 2nd base cover during a base stealing attempt. Under 2.0 seconds is the typical gold standard to be considered a top MLB backstop. In a video titled, "Molina throws out Gordon" from September 14, 2012 (MLB Advanced Media, L.P. 2012), Molina by various timings by the author threw pop to pop in the neighborhood 1.79 seconds, a release speed near 90MPH.

This is as good as one can do – an 83 MPH launch from a squatting position to 132 feet away (counting 5 feet behind the plate) to a knee-high strike. To be so talented to get that 1.79 seconds clocking takes: soft hands that makeup step one, release is step two, arm strength makes step three, and accuracy finishes at step four. Molina has all four working. Gold gloves please. (See below a rudimentary representation of catchers’ throws down to second base and the pop times plus pitcher’s movement to home.)

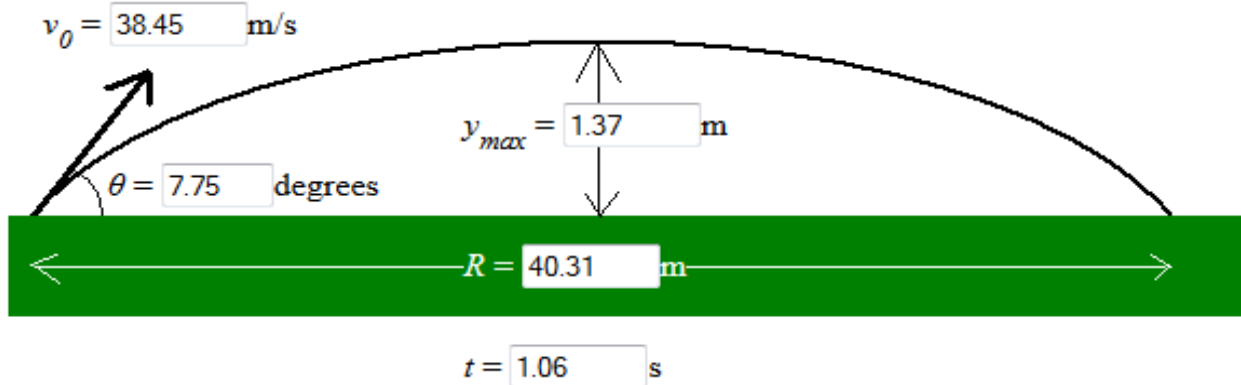
Arm Strength and Arm Accuracy: These too have to go hand in hand. It does little good to have a rocket arm if the aim is always way off target. Shortstops are often the ones that are noticed for their throws. Can they throw off their back foot, pop off the ground and fire, do it on the run, charging and bare-handing, or coming across the bag for a double play, or are they too hampered by either a weak arm, or failing accuracy in those crucial situations.

Table. The Catcher’s Pop Time Works in Concert with His Pitcher

<u>Constants</u>	<u>Factors</u>	<u>Convert</u>						
Mile feet	5280	M/Ft	3.280					
Sec/HR	3600							
Home to 2nd base	132	in M	40.23					
Catcher Throw M/s	34.87	35.76	36.66	37.55	38.45	39.34	40.23	
Catcher Throw (MPH)/Transfer to Release (Time)	78	80	82	84	86	88	90	
0.8	1.95	1.93	1.90	1.87	1.85	1.82	1.80	
0.84	1.99	1.97	1.94	1.91	1.89	1.86	1.84	
0.88	2.03	2.01	1.98	1.95	1.93	1.90	1.88	
0.92	2.07	2.05	2.02	1.99	1.97	1.94	1.92	
0.96	2.11	2.09	2.06	2.03	2.01	1.98	1.96	
1	2.15	2.13	2.10	2.07	2.05	2.02	2.00	
Above Release Times +(MPH)/Pitcher to Home (Times)	78	80	82	84	86	88	90	
1.2	3.15	3.13	3.10	3.07	3.05	3.02	3.00	
1.25	3.24	3.22	3.19	3.16	3.14	3.11	3.09	
1.3	3.33	3.31	3.28	3.25	3.23	3.20	3.18	
1.35	3.42	3.40	3.37	3.34	3.32	3.29	3.27	
1.4	3.51	3.49	3.46	3.43	3.41	3.38	3.36	
1.45	3.60	3.58	3.55	3.52	3.50	3.47	3.45	

Note: Catcher's arm is at 1.8M at release; Ymax=3-3.4M(10-11.5ft)

Diagram. A Throw at 86MPH Depends on Release Time of a Catcher



From Golden Arm Pitcher to a Rifle in the Outfield

For outfielders, Rick Ankiel's accurate arm was one of those great wonders in baseball. A guy with a golden arm that somehow was so blessed, yet so cursed. He started out a top flight pitching prospect – rated as MLB's #1 overall prospect by *Baseball America* in 2000 after two seasons of striking out minor league hitters at a 12K/9IP clip. He was named Minor League Player of the Year in 1999 by *USA Today* and the aforementioned *Baseball America*. The words "can't miss" was used often around the prospect world.

Called up at 21 years old, he went 11-7 for the Cardinals, striking out nearly 10 guys per every 9 innings, a rate comparable to Randy Johnson. Ankiel threw a mid-90s fastball, sinker, and a wicked curveball as his finisher of batters. So good was Ankiel that manager Tony LaRussa started him in game one of the Cardinals 2000 playoff run. After a clean start in the first two innings, the wheels came off, and Ankiel threw 5 wild pitches in just the 3rd inning alone. Ankiel's later appearances in the playoffs proved fortune telling as his pitching control abandoned him. In 2001, his accuracy to the plate completely escaped him, walking a batter an inning in 24 innings over six starts. At 22, the wild lefty was sent back down to the minors. "Can't miss", turned into a "bust pitcher."

Most guys that have a discovered key flaw fade into obscurity rather quickly. Ankiel faced one of the longest treks to get back to the majors with setbacks a plenty along the way. In 2001, he went from the MLB down to Rookie ball: proving he could swing a bat, throwing pretty well, garnering minor league all-star consideration at still just 22 years of age. Injury hit in 2002, his mighty left arm was sprained, costing an entire season. 2003, Tommy John surgery ended another comeback to the mound, so that by March 2005, Ankiel's days as a pitcher were completely done.

He switched to outfield, showing ample power in posting above a .500 slugging percentage. The Cardinals invited him to their 2006 spring training, hoping their investment, made in the 1990s, would somehow payoff going forward. Injury interfered in May, resulting in a knee surgery, and another year lost in the sands of athletic time.

By 2007, Ankiel's career from Clinton's last year, to Bush's second term was a series of setbacks and revamping his entire approach to baseball. He made that quantum leap to a position ballplayer, first destroying AAA with 32 home runs for a .568 slugging percentage, garnering a 2007 August call-up to the show and pounding 11 home runs with a .285/.328/.535 slash. He repeated this success in 2008 – showing he was no fluke – hitting another 25 home runs, and displaying a tremendous arm in the outfield, accurate and lethal from above analysis, deterring most runners from attempts to take that extra base.

Ankiel did what only Babe Ruth has accomplished in the majors: win 10 games as a pitcher; and hit over 50 home runs in a career. While Ankiel never amass Ruthian numbers, he showed dogged persistence to his craft in the wake of what usually ends most professional careers: arm trouble.

The golden arm first noticed as a pitcher, became a calling card as a position player. His seven years' trek through the minors, with reinvention, should garner praise. He defied labels; and a succeeded again.

Table. Revised Zone Rating Mid-2007 MLB Season (The Hardball Times)

Pos	Balls in Zone	Play Made	% Made	OOZ	% OOZ
1B	2779	2083	0.750	425	20.4%
2B	5113	4292	0.839	654	15.2%
3B	4518	3093	0.685	744	24.1%
SS	5281	4349	0.824	816	18.8%
LF	3825	3264	0.853	686	21.0%
CF	5100	4570	0.896	867	19.0%
RF	3941	3428	0.870	688	20.1%
	30557	25079	0.821	4880	19.5%

Dave Studeman reflected in the table above a new fielding measurement system (Revised Zone Rating) in mid-2007 season. As discussed before, third sackers seemed to have a greater amount of zones (and plays) to cover – where they are significantly less likely to get these plays completed, on average.

Meanwhile, the centerfielder accomplished his tasks about 90% of the time. Also, the hot corner man obtains about a quarter of his chances outside his zone of responsibility – significant – when compared to second or shortstop.

Zones? The field has been broken down into 78 fielding zones (Litchman, 2003) where some fielding methodologies use only a select group of zones, or types of hits, or fielders (pitcher and catchers are excluded) for analysis. From there, each method compiled various stats on players and position averages to decide who is sticking out – and outliers – and who is consistently at the top, or bottom, and hopefully, why that is. (As noted, much more is involved than can be dissected here. The analysis tool became UZR (Ultimate Zone Rating))

Team Example Put to Practice: The 2010 Seattle Mariners

Mariner GM Jack Zduriencik saw some use in these new statistics based on his trade acquisitions, and the path of the Mariners on the field, at first glance. In 2009, Seattle was #2 overall in team defensive efficiency at (.712) which is the ability to turn balls into outs for those "in play" – minus home runs, but adding in foul pops. Zduriencik's team improved by 24 wins from 2008 to 2009, and many GMs likely would go out and add pop to their lineups. Seattle did nearly the opposite, acquiring lefty Cliff Lee from Philadelphia to counterbalance Felix Hernandez into a dual-ace, combo package. Top pitching, check.

Once a super sub, Chone Figgins seemed more addicted to glove in the American League in 2009, with better speed and patience enough at the bat. Jack Wilson, for years, was Pittsburgh's best player, added to prove his worth to an AL team. In the mid-aughts, Wilson's glove was the best in the NL. Centerfielder Franklin Gutierrez proved talented alongside Suzuki in right. Both got to all the balls you expect an outfielder to catch; and many you don't. (Gutierrez's Ultimate Zone Rating (UZR) rated best in the majors (Athlon Sports, *2010 Preview*). Gutierrez consistently rated well with the fans; just no longer a starter by 2012.)

Milton Bradley. Once: a talented prospect. A 20-20 man. Now: a man without country. He roamed outfields in the hopes he can resurrect his once promising career. Yet, given his poor work ethic, can he still catch a baseball adequately in left field? (Seattle dumped RHP Carlos Silva on the Cubs for Bradley.)

The emphasis on defense plus players, power pitching, with potential offensive breakouts of Kotchman, Gutierrez, and Wilson was designed to put the Mariners in the playoffs. Tied to that, was a hope LHP Erik Bedard reverted back to his 2007 Baltimore form – so Seattle could then have 3 dangerous arms to rain on a New York juggernaut parade. The proofs-in-the-pudding with these ideas as Seattle fell handicapped to a low-scoring offense in 2009.

The 2010 results: Bedard hurt. Lee traded. Offense non-existent. Playoffs called due to always-raining-in-Seattle team.

(By 2014, only King Felix remains on the club. GM Jack Zduriencik added 32-year old Robinson Cano, former New York Yankee slugging, gold glove 2B for ten years, \$240 million in treasure. Jack faced criticisms for the way recent Mariner teams are cobbled together with backlash from a former employee.)

Table. 2009 Mariners Fielding Statistics Under RZR System

Position	RZR (Revised Zone)	OOZ	Notes
1B Casey Kotchman	–	–	27 yr. old – bounced around in 2009.
2B Jose Lopez	.793	36	Better in 2008 – consistent in four seasons.
3B Chone Figgins	.749	96	Played for Angels in 2009. Led AL in RZR.
SS Jack Wilson	.816	76	33 yr. old – statistics from 2007
LF Milton Bradley	.917	42	Amassed in Cubs' RF in 2009
CF Franklin Gutierrez	.965	113	1 st season in Seattle was 2009. Best in MLB.
RF Ichiro Suzuki	.951	83	Franchise player – perennial Gold Glove

The math/CS majors will determine if fielding excellence can be turned into winning ways. Fielding values are not included in everyday stat lines of the 21st century player, even as WAR gained its popularity. These baseball analytics experts will create their own measures, tweaked (and tweeted) out to the Internet (Cloud). And the best teams will incorporate new data to formulate their models for wins and profit alike. (**See:** FDR Era, Macrosabermetrics.)

Top 10 Defensive Teams by Def Stat (2002-2013) (Fangraphs, 2014)

Season	Team	Inn	BIZ	Plays	RZR	OOZ	UZR	UZR/150	Def
2009	Mariners	13074	2297	1945	0.847	526	86	11.8	96.9
2013	Royals	13035	2144	1805	0.842	548	79.9	14.3	87.6
2003	Mariners	12969	2669	2053	0.769	330	76.1	10.8	83.1
2007	Royals	12936	2495	2105	0.844	385	72.3	11.4	75.3
2011	Diamondbacks	12990	2160	1812	0.839	554	60.6	7.2	73.6
2012	Braves	13008	2178	1821	0.836	531	62.5	10.3	71.8
2008	Rays	13119	2267	1897	0.837	450	72.6	11.4	71.1
2008	Phillies	13047	2237	1839	0.822	477	66.5	13.6	65
2004	Devil Rays	12753	2665	1996	0.749	361	57.1	9.5	63.1
2012	Angels	12900	2242	1883	0.84	471	60.2	8.7	62.5

2.4. Equality: The Negro Leagues

In the aftermath of the most destructive era in United States history, the development of the game of baseball was separated by race very early on. The infant professional leagues throughout the country soon employed stringent rules as to who could play on a baseball field, starting in late 1860s, and climaxing in 1887. In the days shortly after the Civil War, racial issues in the Deep South (and beyond) engendered the type of bitterness and hatred that the game of baseball brought into a harsh light and continued to shine negatively well into the 20th century. The bias exists on to this very day in hiring policies and practices surrounding many management positions in all professional sports. (The LA Clippers' owner provided a most recent example.)

As such, the development of a 'separate' league became a motivator and constant struggle for Negro ballplayers knowing their abilities were the equal of anyone playing. As a story told in *My Turn at Bat* by Ted Williams reflected, the Negro Leaguers had talent:

"...He [a friend of Williams] told about seeing Walter Johnson pitch an exhibition game against an all-Negro All-Star team at a little park in New Haven where you were so close you could hear the players talking. He said in the first inning one of the Negro players got up and called out to Johnson, 'Mr. Johnson, I sure heard plenty about that fastball. You throw it, Mr. Johnson, and I'm gonna hit it right out of this park.' And he did, and the game ended 1-0...Six or seven years later I finally met Walter Johnson in Washington. What an impressive man. Big, lean, strong-looking, soft-spoken... 'I've got a friend in San Diego who says he saw you pitch against this Negro team in New Haven...' and Johnson began nodding his head. 'That's right,' he said. 'That sure is right. He hit that ball a mile.'" (Williams and Underwood 1969, 18-19)

The prowess of the players, and sometimes, the nerve, made for both likeable memories along with harsher dislikes by lesser men. Though they could not play in the Majors, they did challenge and beat Hall of Fame talent such as the 'Big Train' in exhibitions. More importantly, it showed talent and courage to stand up to a legend, knowing Johnson was partly the reason (if by complacency alone) a black ballplayer was not in the Majors.

Equally trying for black ballplayers was the search for stalwart men for league administration, financial backing, organizing teams, leasing fields, attracting crowds, and worthy teams to play for profit (or to break even on the venture). At the least, these necessities posed as enormous difficulties, and sometimes, ultimate barriers to constructing a consistently playable schedule between teams. Adding to those tasks, traveling to and from cities, staying overnight in segregated circumstances, and one images the frustrations a black man endured from the late 1800s to the mid-20th century.

The Developers of the Negro Leagues

The pioneers in baseball did not just come through the chaotic path of the Majors. Black baseball contributed its share to the sport's design of ideas, promotions, and history with men like **Andrew 'Rube' Foster (1879-1930)** leading the way. Considered the founding father of the Negro National League, Foster's nickname came from the pitching defeat of Rube Waddell and the Philadelphia A's in a 1902 exhibition game. But his true on-the-field greatness was earned from his consistent southfork pitching for more than twenty seasons, his managerial virtuosity, and origination of the first professional Negro League in 1920.



Foster (pictured left) started out life in Calvert, Texas, the son of a minister and studied in that calling, before garnering attention in baseball with the Fort Worth Yellow Jackets. At 22, he joined up with Frank Leland's Chicago Giants where he came to the awareness of the burgeoning black sports press, throwing submarine fastballs and screwballs that mystified black and white hitters alike (Black Baseball: A History of African-Americans & the National Game 2003, 137). His early success as a player was rewarded with a managerial stake. This led to more prominence in the semi-pro leagues and barnstorming tours that black teams engaged in.

Foster's Leland Giants racked up top records of (134-21-3), (110-10), and (123-6) in 1905, 1907 and 1910, respectively. Cap Anson, the *pro tempore* progenitor of the color line, was an opposing operator in the Chicago semipro baseball league Foster dominated (McNary 2003, 137).

During the first decade of 20th century, Foster's name garnered enough respect to get a date with the only Chicago Cubs dynasty in 1909. The 3-game series saw exciting play and controversy. With Foster pitching game two, the Leland Giants had the 1908 World Champs down 5-2 going into the ninth. But the Cubs rallied to a 5-5 tie as 3B Frank 'Wildfire' Shulte managed to get third with two outs. Foster, clever, but tiring, apparently called time to discuss options for himself pitching, or subbing in game three starter Pat Dougherty. But with several non-players and Cubs close to the field riding the umpire, Shulte took advantage of Foster's distraction, stole home, and won the game. Bets on the series when south – cancelled due to protests – and the last game went 1-0 to the Cubs. Though each game was won by the champs, they refused to face again against the Leland Giants (The Negro Leagues, 27-29).

Amongst Foster's other contributions to the game, he is known for:

1. The irascible, but ever-compelling, John McGraw (Negro League Baseball: The Rise and Ruin of a Black Institution 2004, 204) sought out his pitching and managing techniques

2. Foster wrote about "how to pitch" in Sol White's *History of Colored Baseball* and allegedly tutored greats such as Christy Mathewson and 'Iron Joe' McGinnity in the art of the *fadeaway* (screwball) by several accounts (later debunked)
3. He was an entrepreneur in a time when blacks were held back socially and financially
4. And he held together this league through a stern business sense (The Encyclopedia of Negro League Baseball, 98-99)

(Note: Neil Lanctot's *Negro League Baseball* tells of a change of heart by John McGraw in the 1930s regarding blacks integration into baseball. McGraw's death in 1934 is attributed to *Uremia* which leads to clinical onset of nausea, vomiting, fatigue, anorexia, weight loss, muscle cramps, pruritus, visual disturbances, increased thirst and *mental status changes*. These mental status changes came before his passing; and would partly explain vacillation on the race issue.)

As Jerry Malloy points out in his introduction to Sol White's *History* about Foster's contributions to the game: "...Foster had a career that would rival in variety and magnitude the achievements of white baseball's Al Spalding and Charles Comiskey combined, even serving as commissioner, unlike Spalding and Comiskey (White and Malloy 1995, xlii)." An example of his keen management ability took place on August 22, 1923, when he implored his Chicago American Giants players to bunt over and over again to 3rd base in forcing Bob Miller to field the baseball unsuccessfully. This tactic won the game (11-5) after trailing going into the 7th inning by three runs (The Negro Leagues Chronology: Events in Organized Baseball 1920 -1948 2006, 18).

Foster's founding of the Negro National League in February 1920 at the Paseo YMCA in Kansas City (O'Neil, et al. 1996, 76), with the first season starting in May 1920, came about during the reviving climate for all of professional baseball. (The emergence of 'The Bambino' after the Black Sox Scandal helped.) Foster's ability brought together those eight teams led to many firsts: playing games in Ebbets Field, a Negro World Series, and the quick formation of a rival league.

Within that first month, the Bacharach Giants were using Ebbets Field to showcase their talents versus a white semi-pro team in sweeping a doubleheader. By July, two black teams, the Bacharach and Lincoln Giants, played again at Ebbets before 15,000 fans with ace pitchers Smokey Joe Williams and Dick Redding putting on a show (Hauser 2006, 7). The first season ended with the Chicago American Giants, Foster's team, winning the league, and the replacement of the Dayton Marcos by a Columbus, Ohio team. (To reflect the difficulty of starting a professional league: Foster moved HOF Oscar Charleston from the Chicago Americans to the Indianapolis ABCs for competitive balance reasons, and lent money to troubled franchises (McNary 2003, 139). Charleston was a hometown hero in Indianapolis - so, a logical move.)

By the mid-1920s the league attendance for eight teams, who owned or rented their own fields (aside from the Cuban All Stars who had no home games), totaled more than 4 million (Loverro 2003, 99). This rivals both the National and American Leagues in attendance during that period. With that kind of fan support, in late October 1923, the American Giants played the MLB Detroit Tigers in a three-game series, splitting two and calling one because of darkness. Both sides were missing key players – Ty Cobb, Cristobal Torriente and Oscar Charleston – but played on at Chicago’s Schorling’s Park (Hauser 2006, 19). This clearly enforces that good teams always played regardless of color.

As Bill Hageman wrote in *Baseball Between the Wars*, “...Giants manager John McGraw reportedly told Foster, ‘If I had a bucket of whitewash that wouldn’t wash off, you wouldn’t have five players left tomorrow (Hageman 2001, 54).” An average squad of Negro Leaguers had between fourteen and sixteen players – and under McGraw’s hatched plan – nine players were of major league-caliber in the early 1920s when McGraw’s New York Giants were four-time World Series participants.

But it was Rube Foster that held together these teams with an energy that was beyond what many other men (black or white) ever amassed. Sadly, Foster succumbed to the pressures of holding the league together in 1926, with a ‘mental incapacitation’ from which he never recovered. (It is not a certainty why his ‘alleged violent episode’ would solely do this. But psychology was a different field in the 1920s). Foster died on December 9, 1930 while still in a Kankakee, Illinois mental institution. His recognition as the ‘Father of the Negro Leagues’ is undoubtedly well-earned; and his legacy extended to the pinnacles of baseball immortality with admittance to Cooperstown in 1981.

Table. Rube Foster’s 1920 Negro National League

Kansas City Monarchs	St. Louis Giants
Indianapolis ABCs	Chicago American Giants
Chicago Giants	Cuban All Stars
Detroit Stars	Dayton Marcos

Edward W. Bolden (1881–1950) became a rival of Rube Foster’s National League, forming the Eastern Colored League in mid-December 1922. Foster attempted initially to recruit Bolden’s Hilldale team – a powerful, independent Negro team existing since in the mid-1910s – but neither Bolden or Foster felt compel to compromise. Thereafter, Foster and the other franchises in the Negro National League employed an attorney to stop players from jumping contracts, a usual problem of any rival league formation (Hauser 2006, 20).

After reaching a truce, Bolden’s Hilldale team, winner of the Eastern Colored League, played the Negro National League Kansas City Monarchs in October 1924 to a ten-game World Series losing to the Monarchs 5 to 4, with a tie (Loverro 2003, 136). This ‘traveling World Series’ reported various attendance

levels of 8,800 to 5,366 to only 584 fans, but it was partly successful in maintaining the peace between the two men.

Like Foster, Bolden too suffered under the pressures of operating the league and went through a breakdown (Loverro 2003, 26). As the Great Depression approached, so did the collapse of the Eastern League in 1928; only to be reformed into the American Negro League in 1929, but failed just one season in. Bolden's major contribution to the Negro Leagues was as a consistent supporter through ownership, manager, financier, and former of leagues until his death in 1950. He experienced periods of hesitation due to the fragility of league finances tied to his own. Bolden did this while starting out as a U.S. Post Office worker (Lanctot 2004, 5).



From 1904 to 1946, Ed Bolden (pictured left) was a postal worker. His hobby was baseball. As many others, splitting his current profession from his hobby and desires was not easy. (Picture taken at the 1923 Negro League World Series. Source: Wikipedia - Public Domain.)

William "Gus" Greenlee, owner of the Pittsburgh Crawfords, former of the 2nd Negro National League (NNL) after the institutionalization of Rube Foster, was a savvy entrepreneur, first and foremost, but gave his vast energies to promoting baseball too. Born in Marion, North Carolina, Gus had two brothers that were trained as medical doctors, whereas, the always-close-to-trouble Gus, applied his intellect to wheeling and dealing on the streets. (An innate skill paired with his superior intellect in a much different trade.)

In *Negro League Baseball: The Rise and Ruin of a Black Institution*, Neil Lanctot tells of Greenlee's rise in prominence from North Carolina; the move to Pittsburgh before WWI, where he worked as a taxi driver; then joined the war efforts in an infantry regiment. He was wounded at St. Mihiel, France as part of the 367th Regiment (92nd Division) (Black's Baseball National Showcase: The East-West All-Star Game 1933-1953 2001, 9).

Table. Ed Bolden's 1923 Eastern Colored League

Atlantic City Bacharach Giants	New York Lincoln Giants
Brooklyn Royal Giants	Baltimore Black Sox
Philadelphia Stars	Cuban Stars
Hilldale Daisies (Giants)	Washington Potomacs



After that, Gus (pictured left) became, like many others of that time, a dealer in illegal spirits. His cohort, a Latrobe Brewery owner, Joe Tito, assisted him into the "numbers racket." His involvement with the boxing world, nightclubs, top black entertainers, and the hotel industry made him one of the most successful figures in the Negro Leagues during the 1930s. Gus wielded power (and made enemies, Cumberland Posey, for one) in keeping the National Negro League afloat in the 1930s. As Neil Lanctot noted, "Greenlee coped with a number of difficulties during the 1930s, including weak administration, individualistic owners, inadequate financing, and uneven support." And yet, he succeeded.

Greenlee mirrored and improved upon the Major League All-Star game in promoting the East-West Game at Comiskey Park in 1933 that let the fans decide on the players involved for more than twenty East-West tilts. This fan voting still exists to present day for the MLB All-Star game. Attendance at these mid-season classics exceeded more than 50,000 fans on a few occasions, outdoing the MLB all-star in attendance over that period.

Gus built Greenlee Field in 1932, a 7,500-seat, lighted stadium in Pittsburgh. With the independent ownership of the field, Greenlee imported the best players and cull together a HOF-led dynasty. Catcher Josh Gibson, centerfielder Cool Papa Bell, 3rd baseman Judy Johnson, outfielder Oscar Charleston and pitcher Satchel Paige played on the 1934-1936 Pittsburgh Crawfords. (Many players came from the 1930-1932 Posey-owned Homestead Grays. The independent powerhouse dominated throughout the Negro League era and thus, reason for their feud.)

With Greenlee's outside interest in professional boxing, considered a far more lucrative venture in the 1930s economy than baseball (black or white due to gambling gains), Greenlee ultimately sold his field in Pittsburgh in December 1938 for \$38,000 with the site eventually made into a housing project (Lanctot 2004, 78). He dedicated more time to developing prizefighters for bouts, including one match with heavyweight champion Joe Louis.

Greenlee fell on hard times personally; left the Pittsburgh Crawfords in disarray; and failed to make payroll payments to his players during that 1938 season. From there on, his influence in black baseball lessened. Greenlee did remain involved in the formation of a new Pittsburgh Crawford team (Loverro 2003, 121), but was no longer in charge.

Various owners forestalled his numerous rejoinders to the Negro Leagues, due to Greenlee's pushy and overbearing nature. Even as Greenlee assisted significantly the development the NNL, he made open enemies. Greenlee launched the United States Baseball League (USL) in 1945. With reported, if uncertain financial backing by Branch Rickey, Greenlee's new league failed to materialize into equally competitive league, and lasted only two seasons.

Soon after, Gus Greenlee developed health problems, including a heart attack, and died in 1952 at the age of fifty-six from a stroke, as "The Guiding Light of Modern Negro Baseball (Lester 2001, 9)."



Sol White (1868-1955) was the first historian of black baseball. In publishing a small volume about the background of black baseball players on the professional circuit in 1907, White left behind an original viewpoint on the teams that existed in various leagues over a twenty-year span. Born in 1868, Sol had the fortune (or misfortune) to see firsthand the development of the 'color line' in baseball while playing for Pittsburgh Keystones in the original Colored League. For years the line had existed; but a few, namely Bud Fowler, Fleet and Weldy Walker, and George Stovey played well for various teams in the American Association, International League and Eastern League. But that workable truce ended.

White's volume on baseball described the feats of many players; addressed the pay disparities in light of equal talent; the difficulties faced by managers of teams; the growth of Jim Crow laws and the effects on traveling as a Negro baseball team; and how blacks should approach the game. As one passage offered this, "Base ball is a legitimate profession. As much so as any other vocation, and should be fostered by owners and players alike...It should be taken seriously by the colored player, as honest efforts with great ability will open an avenue in the near future wherein he may walk hand-in-hand with the opposite race in the greatest of all American games – base ball (White and Malloy 1995, 67)." As it turned out, another forty years passed before this reality appeared.

White detailed the successes of various teams in the late 1890s and early 1900s. Specifically, the Gorhams of New York City, who were owned by Ambrose Davis, the first African American to own a baseball team in 1889. This team later was known as the Big Gorhams (1891) and dominated all comers to the extent that Sol White considered it the best team of the 19th century. (Two players of note were George Stovey and George Williams (White and Malloy 1995, xxx-xxx).)

His interest in baseball grew from player to player/manager to manager, then owner. He played for the Cuban-X Giants, Page Fence Giants, and Chicago Columbia Giants in the 1890s. At 34, he co-founded the Philadelphia Giants in 1902 with H. Walter Schlichter, a sportswriter. For the remainder of the decade, he played for and managed his Philadelphia team to success. In the 1920s, White managed the Cleveland Browns and Newark Stars.

Sol White died on August 26, 1955 in New York City (White and Malloy 1995, xlvi) at 87, having seen Jackie Robinson, Don Newcombe, Willie Mays, and Henry Aaron rise to stardom in the sport he loved so much. White- with time – once more could have commented uniquely on their adventures and necessities.

The Ownership Woes of the Negro Leagues

Many other men (and women) of differing backgrounds (and races) contributed to the formation and continuation of Negro League Baseball. Effa Manley, Charles Isham Taylor, Dr. W. Rollo Wilson, Cumberland 'Cum' Posey, Alex (Alejandro) Pompez, James Leslie Wilkinson, Abe Saperstein (Harlem Globetrotters founder), and Tom Baird provided the necessary perseverance in keeping these leagues alive. The onerous task of building schedules, planning out travel, and obtaining players made for weary nights in the entire enterprise. The baseball business idea persisted through numerous incarnations; healthy revisions of team placements; and often, with profit marginal, if seen at all.

Starting off, in the late 19th century, baseball franchises served decidedly different purposes than as a purely profit-making venture on its own merit. As Malloy wrote, three main reasons usually existed:

- Corporate advertising (Page Fence Giants were an ad arm for the Page Fence Co.)
- Prestige of a Social Club (Columbia Social Club)
- Promote another business venture (John W. Conner Royal Café & Palm) (White and Malloy 1995, xxxix)

This last particular trend continued in Gus Greenlee's mixture of sports, live entertainment, and society types seen at the Crawford Grill of the 1930s. This comprised several distinct, yet integral, parts to a Negro business model and was instrumental to the survival of many black enterprises, especially in Depression-era economies. Versatile, paradigm-breaking, and innovative ideas were employed to make it work – and often stretched legality in the process.

But lack of profit (as a baseball operation alone) was largely due to the small number of cities that contained significant black populations, financial backing, and preferences of ownerships that confined teams to very limited areas. As Neil Lanctot tabulated in *Negro League Baseball*, only New York, Chicago, Philadelphia, Baltimore, Detroit, and Birmingham had populations over 100,000 African Americans in 1930 (Lanctot 2004, 14). By 1940, this listed included Memphis and Washington D.C., but Detroit then did not have a Negro League presence. This shifting landscape was not very different from the early National League changes due to ownership's whims. But, the added constraint was that Southern and Western teams faced hardships in distances travelled, and discord, and playing interracial barnstorming games in inhospitable climates with uncertain payments for the games played. Winning could also mean, losing.

Many times to gain profit meant playing semi-pro/pro white teams (MLB greats like Ruth, Gehrig, Foxx and countless others) that overrode the prospect of playing "scheduled" league games. Barnstorming meant a seasonal financial boost: often to the disgust of fans and black media reporters alike. As one passage in Neil Lanctot's analysis of the Negro Leagues notes frustrations, "Fast losing support from sportswriters and fans, black professional baseball appeared largely incapable of growth and an increasingly questionable investment as the Depression continued (Lanctot 2004, 55)."

Lanctot further added this summary of the barnstorming profit game:

"Black and white professional baseball, however, had never remained completely separate. As early as the 1900s, black teams had leased major league parks for occasional appearances and increasingly rented other Organized Baseball facilities. Moreover, since the 1880s, white major and minor league players had supplemented their income...against black clubs. By the early 1920s, several black teams had defeated largely intact white professional teams in postseason series, generating positive publicity and respect from white participants and fans...major league baseball eventually restricted postseason participation...and limiting barnstorming squads to no more than three players from a single team. While opportunities for interracial professional competition continued...[they] generally involved white 'all-star' teams varying widely in quality." (Lanctot 2004, 208)

Meanwhile, ownership squabbles over booking of teams in parks, the cut of the gate, and administration of the league by less-than-likeable men, in the opinion of (sometimes) envious owners ensued. Racial conflicts also arose due to white owners and promoters (Nat Strong) leveraging black teams for greater profits than from similarly-situated semi-pro white teams. A lack of patience too was evident with nearly all owners, black or white, whenever finances soured. (**See:** Volume II, *Dynasties – The Real Philadelphia Story*)



Promoter/owner **Alex (Alejandro) Pompez** (left) improved the climate of Negro League baseball with the death of Nat Strong in January 1935. Nate's stronghold on promotions of nearly all semi-pro/pro baseball in New York is evidenced in Neil Lanctot's *Negro League Baseball*:

"...the involvement of Nat Strong in black baseball had particularly frustrated sportswriters and owners...he had been involved in booking and promoting since the 1890s and eventually controlled a number of white semipro parks in the metropolitan New York area. Black clubs looking for profitable games...had little choice but to deal with Strong...Strong's openly exploitive tactics and seemingly mercenary attitude toward black baseball drew steady criticism...Strong was primarily driven by profit and had little interest in developing the industry into a stable institution...By the 1930s, Strong was openly hostile to any organization that might potentially cut his bookings by weaning black teams away from their reliance on independent games with white semi-pros (Lanctot 2004, 24-25)."

Pompez though was connected to the departed Strong as SABR's Brian McKenna asserts, "The Pompez-Strong relationship was a mutually beneficial one. Strong gained access into the Latin American market and community through

Pompez and in return Pompez gained Strong's experience and contacts and thus increased his opportunities exponentially (Alex Pompez 2013)." Among Strong's experiences and tactics: he drove the Brooklyn Royal Giants into bankruptcy (McKenna 2013); and then bought them on a song, owning them in the Eastern Colored League that formed in December 1922 (Hauser 2006, 15.)

As a quick response to Strong's death, Alex Pompez, born in (Key West, Florida (Baseball-Reference.com) or Havana, Cuba (Lanctot, 42)) in 1890, enabled the New York Cubans to use a refurbished field, with lights, and integrating players of various backgrounds in Harlem during the 1935 season. (Dyckman Oval: 204th and Nagle Avenue was the field location (Lanctot, 43).)

Pompez's fledgling adventures into baseball immortality started out in the mid-1910s as just a promoter of the Cuban Stars, made up of nearly all Cuban islanders. With the constant travel of the Cuban Stars in the initial Eastern Colored League, profitability of the baseball franchise became too difficult.

Pompez went back to work in the cigar business, owning a shop until his death. Pompez, more substantially, controlled a "numbers route" that generated on average of \$8,000 per day (Lanctot, 43) even in the Depression Era. These outside baseball successes left him flush – McKenna wrote, "At various times the Cuban Stars were subsidized by Pompez's lottery money, of which there was plenty. Pompez was a big spender who lived in the top neighborhood in Harlem, drove the best cars and wore the finest clothes and of course smoked the best cigars. He resided in an exclusive community at the top of Sugar Hill."

Pompez's big money and baseball ownership though were immediately hampered by his numbers involvement (and forced ties to Dutch Schultz). This raised the eyebrows of prosecutor Thomas Dewey, future governor of New York, and near president according to the famous and erroneous headline, *Dewey Wins!!!* Soon after Schultz's death, and resumption of a numbers route in the millions per year, Pompez's received a formal indictment in May 1936. He fled the jurisdiction, first to Canada, then France, and finally Mexico, before coming back to the United States. With guarantees of a light sentence, and full cooperation with the law (Lanctot, 59-60), after just a hiatus of two years, he fielded the New York Cubans in 1939 (McKenna 2013). Such financing, from illegal means, with Gus Greenlee and Alex Pompez being the leading figures in that particular tactic, hampered "the optics" of the business of black baseball.

Pompez meanwhile "cleaned up" his act, or at least, was able to state that as his goal in the wake of his testimony at a Tammany Hall trial of James Hines (McKenna, Alex Pompez 2013). His required testimony gave him the ability to return to baseball – though losing his stadium to demolition – and reestablishment of the New York Cubans. Other owners, especially Effa Manley of the Newark Eagles, resisted any open-armed approach, but lost the battle. Alex was put back in charge, attaining a vice-president of the league title.

By the late 1940s, with the Negro Leagues disintegrating, Pompez was asked by the New York Giants owner Horace Stoneham to farm out his advice to the Giants organization. As an astute bilingual man and crack talent evaluator, with Caribbean ties, Pompez assisted in the transplanting of Latin American stars Juan Marichal and Orlando Cepeda to the Giants (Lanctot, 62), Tony Oliva to the Twins, and Saturnino Orestes Arrieta Armas 'Minnie' Minoso to the White Sox (Negro Leagues Baseball Museum; Kansas State University, College of Education 2006). (A few others: Jose Cardenal, Tito Fuentes, Jose Pagan, and the Alous: Matty, Felipe, and Jesus.)

Pomez continued and expanded this vital position well into the 1960s as the San Francisco Giants head of international scouting, bringing over the 1st Japanese pitcher, Masanori Murakami, who finished 5-1 with 3.43 ERA in his brief U.S. career. But it was a glimpse of things to come.

In the early 1970s, Pompez was on the committee to elect Negro Leaguers to the Hall of Fame, serving until his death in 1974. He was inducted into the Major League Baseball Hall of Fame in February 2006. Versatility and vitality kept Pompez scouting for lucky opportunities while avoiding a personal downfall all his life.

Money, Fields and Musical Atmosphere

Bill Veeck tells in the *Hustler's Handbook* of how Clark Griffith, owner of the Washington Senators, wanted him to start Satchel Paige (while in Cleveland) to draw a larger gate to the park. This viewpoint is further supported in Buck O'Neil's *I Was Right on Time*:

"The Washington Senators' Clark Griffith was making a killing, because the Homestead Grays played in Griffith Stadium when the Senators were out of town. We [O'Neil's team] would go in there and play the Grays and fill up the place; the Senators would come home and play any club other than the Yankees and they'd have twelve thousand people in there. We had'em hanging from the rafters. So he was probably making \$100,000 off the rent and concessions with the Grays (O'Neil, et al. 1996, 167)."

This is but one example of a white owner knowing that Negro League players and the immortal Satchel Paige were a huge drawing card that could pad the bottom line of the ne'er-do-well Senators. Clark 'The Old Fox' Griffith was a turn-of-the-century right hand pitcher of significant talent too (240-141, 3.31 ERA, 23 Shutouts), and undoubtedly understood what brought fans to the park: talent. Griffith though never saw fit to fix the lowly Senators. (See: FDR.)

Before integration in 1947, nevertheless, a few ownerships made profits for several seasons. According to Neil Lanctot, the Kansas City Monarchs were modestly profitable during the early 1940s. Over a five-year stretch, the Monarchs reported a \$260,000 total profit according to the ownership records of Thomas Baird, their white co-owner (Lanctot, 293). *In Beyond the Shadow of the*

Senators, Brad Snyder noted the Homestead Grays made a profit every year from 1912 to 1929 (2003, 40).

Attempts too by the Negro League ownerships to purchase home grounds were fairly consistent, going back to 1922 in St. Louis with \$27,000 spent on a park at Compton and Market Street (Hauser, 12). Pompez owned Dyckman Oval. This points to feeling confident in profitable outcomes: investing in ballparks is no small matter.

Yet, the ability to maintain or keep them independently owned was often unsuccessful as can be seen in Greenlee Field lasting less than a decade (1932-1938) even with a highly successful team and potentially the best assemblage of talent in the 1930s, white or black, in the Pittsburgh Crawfords. And so, most owners of teams were renters of home grounds whether of major league caliber, minor league affiliates, or semi-pro fields or worse.

The Negro Leagues were not just about money, ballparks, or ballgames. As noted, the convergence of black enterprises just 'came around' the game of baseball. Black entertainers in music and poetry, championship boxers, influential writers, and fledging politicians all took great interest and supported the National Pastime. People like Louis Armstrong, Count Basie, Cab Calloway, W.E.B. Dubois, Langston Hughes, Lionel Hampton, Billie Holiday, Lena Horne, Joe Louis, and many others were tied, if only through similar travel and lodging circumstances, to the experiences of professional baseball players who shared the same skin color, as Halberstam wrote:

"There was a black world in Kansas City that white people knew almost nothing about. It was centered at Eighteenth and Vine, where the famed Streets Hotel, a grand hotel where all the best people stayed, was located. It was a beacon...of black America...There would be Duke Ellington or Count Basie [joining Buck O'Neil] for breakfast...[But] it was a curious bittersweet life, he thought, to be denied so much and yet have so much." (Halberstam, October 1964, 148)

Such associations grew stronger because of the superior abilities that inhabited this facet of the racial divide. While facing many, if not all, the same struggles for equality in their chosen professions as the ballplayers, who traveled on Pullmans or second-hand buses from New York to Austin; from San Francisco to Chicago. A nomadic and noble existence made tolerable by tales and shared nights in dusty towns. Their freedom had in travel – vagabonding it so to speak – appealed in a time when staying with one job, or in one place, for an African-American was not a pleasant existence. It may have reminded them of ancestors who were never free to roam and find their best paths. They could, and did otherwise.



1932 Crawfords: Oscar Charleston, Satchel Page, Josh Gibson, Judy Johnson, and Jud Wilson

Table. Members of the greatest team ever assembled?

1935 Pittsburgh Crawfords	Position Played
James Cool Papa Bell (HOF)	Center field
Jimmy Crutchfield	Right field
Sam Bankhead	Left field
Josh Gibson (HOF)	Catcher
Judy Johnson (HOF)	3 rd Baseman
Oscar Charleston (HOF)	1 st Baseman/Manager
Satchel Paige (HOF)	Right hand Pitcher
Leroy Matlock	Left hand Pitcher

As poet Langston Hughes wrote in *A Dream Deferred*, an applicable bittersweet poem of what a black ballplayers' experiences and hopes could be defined as during the first half of the 20th century:

What happens to a dream deferred?

Does it dry up
Like a raisin in the sun?

Or fester like a sore-
And then run?

Does it stink like rotten meat?
Or crust and sugar over –
like a syrupy sweet?

Maybe it just sags
like a heavy load.

Or does it explode?

The Negro Leagues exploded into the conscience of white baseball, and forever affected the record books, after the initial heavy load was lifted by Jackie Robinson's back and gritty play.

The Black Media and Sportswriters

Influential to the times were the black print media. Media outlets like the *Chicago Defender*, *Pittsburgh Courier*, *Amsterdam News*, *Baltimore Afro American*, *Kansas City Call*, and others, were the only voices of statistics and players of the Negro Leagues. They shared a bond too with the Negro Leagues. In many cases, their writings are all we have left of what was the on-the-field statistical story of the black baseball and snippets from the men who played.

Among the short list of great African American sportswriters stand several key figures to the growth, history, and legacy of the league.

Dr. W. Rollo Wilson (1891? -1956) is often compared to Red Smith, an influential plain-speaking HOF baseball writer. Dr. Wilson's life was filled with a wide array of occupations – chemist, Pennsylvania boxing commissioner, fight promoter, Negro National League commissioner, and corpsman in the U.S. Navy in WW I – but sports writing became his ultimate passion carried out over thirty years (Reisler, *Black Writers/ Black Baseball: An Anthology of Articles from Black Sportswriters Who Covered the Negro Leagues*, 114).

From Jim Riesler's *Black Writers/Black Baseball*, a few gems of Dr. Wilson: "Oscar [Charleston] can make a baseball do everything but talk (Reisler, 116)."

"Some folks say that umpires are not of the same species as you and me (Reisler, 118)."

"Some of these days, I'll see a greater and more versatile ballplayer than the Cuban Stars' Martin Dihigo, and when I do, I'll write, wire or phone the details to each reader of this Column, collect (Reisler, 119)."

And of Oscar Charleston again: "...openly declared that he [Charleston] was a greater star than Max Carey, then at the height of his days. They said he batted like a Cobb and fielded like a Speaker, and there could be no greater praise in that era (Reisler, 120)."

Rollo Wilson's poetic words on the entrance of Joshua Gibson into Negro League baseball due to Buck Ewing's finger injury: "The manager was at wit's end and for someone to send in a sub. Up in the grandstand was a young husky on his way home from work in the Edgar Thomson US Steel Mills. He was attired in the garments of his calling, the hallmark of a horny-handed son of toil...He lumbered down on the field, hobnailed shoes and all, and offered himself a living sacrifice to old Cum Posey. Since nothing better could be done, Posey accepted his services (Reisler, 121-122)."

Wilson was among the voices that pushed for integration of the baseball through columns written in 1934 during the East-West All Star Classic. He envisioned a possible minor league affiliation with the Majors and pushed Commissioner Landis to make a priority of these changes. (Landis Hears Baseball Talk 1934, Sec 2, pg 5.)

Dr. W. Rollo Wilson died outside of Connie Mack stadium after watching the Philadelphia Eagles play the Pittsburgh Steelers (Reisler, 113).



Sam Lacy (1903-2003) started like many fans, playing baseball and hoping for a career as a ballplayer. He spent his formative years moving from Mystic, Connecticut to Washington, D.C., and shagged flies as a teenager in the outfield of Griffith Stadium while the likes of Goose Goslin and Walter Johnson warmed up in the late 1910s and early 1920s (Reisler, 111). As a ballplayer he competed early on against top black players Oscar Charleston and Biz Mackey, but found his calling in the world of reporting after graduating from Howard University in 1923. Sam Lacy (left): Spent nine decades of writing for the love of the game.

Being born to the 1st black police detective in the D.C. area, Henry Erskine, whose love for Senators saw plenty of disappointment, Lacy's sports reporting career endured the Great Depression, WWII, Korea, Vietnam, Civil Rights, Space Exploration, The Internet, Globalization, and both Iraqi campaigns. As a writer and managing editor for the *Washington Tribune*, *Chicago Defender*, and *Baltimore Afro-American* he utilized his long relationship to the Washington

Senators, leading him to promote integration in the late 1930s in his columns, on radio broadcasts, and meetings had with Clark Griffith.

Griffith reflected the times, unable to change 'what was' and using sadly prescient excuses of the destruction of the Negro Leagues, if integration was sought. In an interview with James Floto of *TheDiamondDangle.com*, Lacy said, "I felt that not only were blacks being deprived of the opportunity to make some money, but that whites were being deprived of the opportunity to see these fellows perform. I could see that both of them were being cheated (Floto, Sam Lacy 2004)."

In August 1939, Lacy wrote: "Since man first endowed with conscience and a sense of appreciation he has felt keenly elated at the prospect of getting something. Why then, shouldn't the colored player be interrogated on the proposal to open the big league ball to him, something we *think* he wants, but never bothered to *ask him* whether he does?" (Reisler, *Black Writers/ Black Baseball: An Anthology of Articles from Black Sportswriters Who Covered the Negro Leagues*, 15)

In a prior conversation with Clark Griffith, Griffith made the comment that integration would cause confrontation and possibly cost the Negro Leagues 400 jobs. Lacy retorted: "When Abraham Lincoln signed the Emancipation Proclamation, he put 400,000 of my people out of jobs, and life went on (The Encyclopedia of Negro League Baseball 2003, 171)." Frank Litsky, writer of over 3,700 articles for *The New York Times*, quoted Lacy regarding black baseball, "The Negro Leagues were an institution, but they were the very thing we wanted to get rid of because they were a symbol of segregation (Sam Lacy, 99; *Fought Racism as Sportswriter* 2003)."

Such was the man Sam Lacy was.

Lacy found baseball immortality in closely covering Jackie Robinson during his first three seasons (Litsky 2003), enduring the same indignities as Robinson suffered as both traveled across the South. Lacy once had to type out his report on top of a dugout in New Orleans because he was not allowed in the press box. His cohorts soon joined Sam as a protest to this demeaning policy (Floto, Sam Lacy 2004).

Sam Lacy was the first black member of the Baseball Writers Association of America in 1948 (Litsky 2003). Just a year after Jackie cut his teeth in the majors. Lacy's amazingly long career spanned the breath of nine decades, and saw his induction into the writers' wing of the Baseball Hall of Fame in 1998, fifty years after 'acceptance' into the BWAA. On May 8, 2003, shortly after submitting his handwritten column to the *Afro-American*, the 99-year old Lacy passed away.

Frank Young was likely the most retentive and biting columnist of this group. His career started in 1907, before Sol White's landmark publication and the 'Birth of a Nation' stereotyping propaganda movie that depicted blacks as inferiors and savages. Therefore, Young's gruff behavior was due to setting forth a superb societal example and never letting his guard down while providing commentary on all black sports for fifty years. He came to the burgeoning

business of *Chicago Defender*, a shoestring operation at the start that grew in less than a decade to nearly 250,000 in circulation (Reisler 1994, 58-59).

Young utilized his columns to spell out in clear language what he believed, without over glorifying any particular moment or achievement. The *Fay Says* byline got to the point, told of various situations in one shot, and rarely pulled any punches as this sample suggests:

“Mrs. Abe Manley, who owns the Newark Eagles with her husband, usually does a lot of talking. While in Chicago, she opposed and argued against every move that put 32,000 paid admissions in Chicago...the fortunate part of Mrs. Manley’s arguments was that the other club owners ignored her.

Some of Mrs. Manley objections...are, as Shakespeare said in *The Merchant of Venice*, ‘like two grains of wheat lost in two bushels of chaff, you may seek all day ere you find them – and when you have found them they are not worth their search.’”(Reisler 1994, 59)

Even for all his bites and sarcasm, Young was a caring individual, donating monies to students at the Tuskegee Institute in Alabama, where George Washington Carver was making his place in history. Young was more than just the sum of his words.

Many others, such as Wendell Smith, Chester Washington, and Randy Dixon, were instrumental in reporting both positive and negative viewpoints of the Negro Leagues. In reporting on league members’ shortsightedness, internal disputes, and open confrontations while the owners were closing their ranks against ‘the bad press’, these reporters may have undermined their own goals in struggle for racial equality. (By giving indifferent people and racists the foothold argument often made: that African-Americans cannot operate leagues or squabble too much in business. But they did run the baseball business, struggling too, much like the National League (and other leagues) did in their early years. That fact was left out of the argument by the outside critics.)

Quotes like, “the Negro National League is a pitiful organization (W. Smith 1940, 17),” and “The Negro National League is much ado about nothing (Dixon 1940, 16),” inflamed the growing tensions in this love-hate relationship black writers had with their black brethren in baseball. As a result, even if in well-meaning critiques, the best sportswriters sometimes undercut the very progress (such as it was) to getting an equal footing for the players of the game.

Biographies of Famous Players



Buck O'Neil (1911–2006): Humble, entertaining and quotable, John Jordan 'Buck' O'Neil was born in Carrabelle, Florida in early November 1911. He played first base for and managed the Kansas City Monarchs, but he is more visibly known for contributions after his meritorious service to the Negro Leagues. Ken Burns reflected this drive timelessly in the video documentary, *Baseball*.

He scouted for the Chicago Cubs, signing Mr. Cub, Ernie Banks, and scouted out the 2nd all-time leading theft master on the base paths: Lou Brock. O'Neil has the important distinction as the 1st black coach in the major leagues in June 1962, fifteen years after Jackie Robinson broke into the majors as a ballplayer. Unfortunately, he was held back significantly by the backward-looking Chicago Cubs franchise that was atrocious in 1950s and early 1960s.

Buck O'Neil was more than an able player in his youth, once leading the Negro Leagues in batting average in the mid-1940s while playing against Hall of Fame catchers, Josh Gibson and Roy Campanella. He managed Hall of Fame pitchers Satchel Paige and Hilton Smith, and in doing so, won two Negro League World Series titles (Historic Baseball.com, 2011). Much later, he was chairman of the Negro Leagues Museum in Kansas City; a driving force behind the induction of great black ballplayers unable to play in the Majors; and, the officials and owners key to its survival for a quarter century.

Buck's opinion of his play was always one of humility while uplifting others that made the game great. He was no less a great of the game because he firmly understood the gift of playing the game, managing players, scouting out the gems, and passing on the love of the sport, even after being too old to be invited to play in the Majors. But as he titled his book, *I was Right on Time*, speaking again to his enjoyment of his experiences in baseball – black, white, or the shades of gloriously colorful moments. He gave it his all.

Buck O'Neil passed away on October 6, 2006, in Kansas City, home to the Monarchs he managed, and the museum he helped to build to honor all Negro Leaguers.

He did it all, on time.



Josh Gibson (1911–1947): Quite likely the greatest power hitting catcher (possibly, any position) of all time, Gibson departed too soon, leaving behind a mythical story, more so than any other player, aside from Babe Ruth. (He's estimated to have hit 800 home runs.)

His journey to immortality started in Buena Vista, Georgia in 1911 within the harsh reality of the antebellum South undoubtedly a compelling force for his family's move north to Pittsburgh (and Carnegie Steel) in the early 1920s. As one quote from Gibson has it, "The greatest gift Dad gave me was to get me out of the South." As Gibson grew into his strong and flexible body, he found his life love right at the epicenter for black baseball:

Pennsylvania.

By 1930, Gibson at 19 was already displaying his rare talents; and soon achieved the moniker of 'The Black Babe Ruth' that speaks volumes about his hitting prowess. With little wasted motion, Gibson stood flatfooted in the batter's box, and generated enormous torque without striding out to the pitcher (Negro Leagues Museum; Kansas State University 2006, Josh Gibson Bio). To go along with his batting, his arm deterred likely base stealers, aside from his Pittsburgh teammate James 'Cool Papa' Bell, the high priest of base stealing.

In the early 1930s, he topped the Babe's totals by hitting 69, 75, and 84 home runs in barnstorming tours with the Pittsburgh Crawfords from various sources. Fans and players who saw his monster home runs gave various accounts of the distances – some in excess of 550 feet (Schwartz, No joshing about Gibson's talents 2006) – with the one most talked about happening in Yankee Stadium. As James Colzie, a 265-game winner in 21 years in the Negro Leagues, reflects in *I Will Never Forget* by Brent Kelley, "...He hit the longest ball in Yankee Stadium. They say Babe Ruth and Mickey Mantle hit the longest balls, but Josh Gibson hit the longest one. That's before they brought it in around 15 or 20 feet. He hit it like two tiers up in straightaway center field (I Will Never Forget: Interviews with 39 Former Negro League Players 2003, 25)."

It was said that Gibson left the 'House That Ruth Built' (from the right side of the plate no less.) Stories surrounding Gibson's long taters are now only limited by survivors of that bygone era, but all projected them at over 500 feet.

Gibson started off as a semi-pro, playing for the Crawford Colored Giants in 1929 at 18. As a paying fan, Gibson filled in for Buck Ewing of the Negro League Crawfords in July 1930. He was raw as catcher; but gifted with enormous athletic ability that sharpened those dull initial skills very quickly. By the late 1930s, Josh's defensive improved in most respects, as Robert Peterson's *Only the Ball Was White* pointed out the opinions of Walter Johnson, Roy Campanella, and Jimmy Crutchfield varied, but always suggested Josh had an outstanding arm. Likely, the biggest flaw in Josh's game was trouble with foul pop ups.

But Gibson's main attraction was the monster shots hit in games and batting practice that left many in awe of his power.

As Clark Griffith soon figured out, having the Homestead Grays (Gibson's usual team in the late 1930s and 1940s) play games regularly made up for the abysmal Washington Senators' attendance. Gibson provided the show: hitting balls out of the stadium boosted Griffith's pockets. As Kyle McNary reflects in *Black Baseball*, "Gibson hit more balls into the left field bleachers in Griffith Stadium (410 feet down the line) than the entire American League." Along with his teammate, 1B Buck Leonard, they were dubbed 'Murderer's Row' mirroring (and surpassing) the Yankees in winning 9 straight Negro National League titles.

In 1936, Gibson dominated the Denver Post tournament, a nationwide gathering of top talent aside from the Majors, hitting 5 home runs at over a .500 (McNary 2003, 142) clip in 7 games (which his team won all seven.)

As with many heroes, their light goes out too quickly. Gibson is thought to have survived his last few years with a brain tumor, refusing any operation, while playing through headaches, hypertension, and dizziness. In January 1943, he suffered from nervous breakdown (Negro Leagues Museum; Kansas State University, Josh Gibson Bio). His defensive skills eroded, but Gibson still hit home runs at a considerable rate and led the Negro National League in that category in his final two seasons. Shortly after turning 36, Gibson died at home with his family in 1947. Joshua Gibson is enshrined in three HOFs: American, Mexican and Puerto Rican Halls of Fame.



Satchel Paige (1906–1982): A man who started his MLB career in his 40s, Satchel Paige was known for his fastball, illegal hesitation pitch, and coming and going as it suited him. Being a man without country, since he rarely stayed put in one place, Paige fitted well onto the Cleveland club, led by the free-spirited and transitional management style of Bill Veeck Jr. which won the World Series in 1948. In Satchel's first three games started in the majors, the attendance was a staggering 201,829 (Peterson 1970, 140). (Paige, left, did play 1st base on occasion – rare – likely when he *wanted* to.)

Growing up in Mobile, Alabama, destined to be recognized for his antics, 'Satchel' likely earned that moniker via the five-finger discount road that led to five years (Peterson 1970, 140) in a Mount Meigs reform school (Negro Leagues Museum; Kansas State University 2006, Satchel Piage Bio). Historian Robert Peterson states Paige was nicknamed after carrying mailbags used by the railroads. In any case, Leroy Paige, like George Herman Ruth did in his stint at a Baltimore reformatory, developed into a renowned ballplayer out of delinquency. Both had fathers that were strictly blue-collar: Paige's was a gardener; Ruth's ran a bar.

Paige's legend extended back into 1920s as a fastball pitcher, with little control, that got by on overpowering talent. His first seasons were spent deep in the Jim Crow South playing in Mobile, then for the Chattanooga Black Lookouts, and another short hop to the Birmingham Black Barons (Negro Leagues Museum; Kansas State University, Satchel Piage Bio).

As he reached his prime, Satchel's name came up in the Negro Leagues (or baseball in general) when asking about who was the best pitcher. His won-loss records in the early 1930s for Pittsburgh Crawfords (32-7 and 31-4); his North Dakota barnstorming team tour of 134 wins in 150 contests; or, his out dueling Schoolboy Rowe and a team of major leaguers reflects just how well he pitched. But beyond the won-loss records, his showmanship and supreme confidence was both exciting and abrasive to his opponents and supporters alike.

Paige squabbled with a wide variety of owners over contracts, took personal stances based on his upbringing, and came and went as he desired. Due to his gate attraction, Paige was in constant demand. The Newark Eagles owner Effa Manley once obtained a restraining order in 1938 against Paige leaving the country for an opportunity to pitch in Venezuela (Lanctot 2004, 74). Soon after, he went to Mexico instead. He showed up batters by removing his fielders, leaving only him, and usually, Biz Mackey as his battery mate. Those man-to-boy encounters with his 'bee ball' or 'jump ball' were lopsided in favor of Paige. Paige led players in contract jumping – with money (or a car) as the primary motivator.

This was after getting the low salaries in the Negro Leagues thus providing the impetus to jump to the Dominican Republic: "if we got the dough that we deserve, we wouldn't want to run out on anybody (Lanctot, 73)." Money and material things usually did make the decision for the HOF pitcher as he was later utilized by ever-the-shill owner Charlie O. Finley in the mid-1960s at a record age of 59 years. (Paige got through those 3 innings with little damage.) Finally, Satchel Paige also refused to pitch in towns where he could not lodge or get a meal in a restaurant (Peterson 1970, 10).

While on his Mexican excursion, a sore arm jeopardized his career where Paige struggled through a couple seasons before coming back to nearly full strength. He added polish – throwing a curve ball more, and employing the hesitation pitch – but his prima donna act was ever intact, but tempered by a subtle maturity. He made his way to Kansas City (where he resided at his death in June 1982) and pitched for the Monarchs for much of the 1940s, when not in the American League, or under Veeck's management.

Robert Leroy Satchel Paige pitched in five decades from 1926 to 1965, likely amassing over 10,000 innings pitched, potentially more wins than Cy Young, and the admiration from competitors and fans alike. Joe DiMaggio, a lifetime .325 hitter, surmised he was the toughest pitcher he ever faced in West Coast exhibitions (Negro Leagues Museum; Kansas State University, Satchel Piage Bio). Ultimately, Paige's free spirit, his fastball and wit made his way; and he never looked back.

Satchel Paige's Famous Words to Live By

Avoid fried meats which angry up the blood.

If your stomach disputes you, lie down and pacify it with cool thoughts.

Keep the juices flowing by jangling around gently as you move.

Go very light on the vices, such as carrying on in society. The social ramble ain't restful.

Avoid running at all times.

Don't look back. Something might be gaining on you. (O'Neil, et al. 1996, 220)



Willie Foster (1904–1978): Born in Calvert, Texas, the half-brother of the Rube Foster was the premier lefty pitcher throughout much of the 1920s and early 1930s. He first pitched for the Chicago American Giants that Rube managed adroitly in the early days of the Negro Leagues. Cumberland Posey thought he was the best lefty Negro League pitcher. During Foster's Hall-of-Fame career (1923-1938), he utilized good heat, a fast curve, a superb change of pace, and excellent control for the American Giants, Kansas City Monarchs, Homestead Grays, Pittsburgh Crawfords, and the Birmingham Black Barons.

Some comparisons are drawn to MLB HOF Warren Spahn.

Just four days after his brother's permanent institutionalization in September 1926, Willie threw a one-hitter against the Indianapolis ABCs (Hauser 2006, 40). Later that month, Foster carried his American Giants into the 1926 Negro League World Series by outpitching Wilbur 'Bullet' Joe Rogan in a two shutout performances (5-0, 1-0) against the Kansas City Monarchs. Willie's iron man performance, in pitching both sides of a doubleheader, was duplicated by the losing pitcher, Bullet Joe Rogan (Hauser 2006, 43).

In 1927, Foster went 18-3 over the course of the season, again leading his team to the top of the Negro Leagues.

In the inaugural East-West All-Star game in 1933, Foster amassed the most votes from the fans and dominated on the mound for the West squad with a complete game victory. Again, representing the West squad in 1934, Foster now of the American Giants, duelled with Satchel Paige, but lost. Like many others, Foster played in winter leagues in various locales with his Negro League counterparts, racking up a solid winning percentage against Major League-caliber players.

After his playing days were over, Foster went into coaching, and eventually going back to his alma mater as the baseball coach and Dean of Men at Alcorn College in Mississippi. He died in Lorman, Mississippi in September 1978.

Eighteen years later, he received the nod into the Major League Baseball Hall of Fame. Foster, along with Paige, John Donaldson, "Bullet" Joe Rogan, and "Smokey" Joe Williams were honored as the 1st team pitchers on the all-Negro League team in a 1952 *Pittsburgh Courier* poll (McNary 2003, 145).



Martin Dihigo (1905–1971): A man in 4 Baseball Hall of Fames (Cuban, US, Mexican, Venezuela), Dihigo makes the positional accomplishments of Pete Rose look run-of-the-mill. Born in Matanzas, Cuba, the 6'3" sleek-and-long ballplayer started off as a middle infielder, but soon found plenty of work as a power-hitting speedster with a cannon arm everywhere duty called. There was little, if anything, this man could not do on a baseball field. He pitched near the level of Satchel Paige, while hitting at a pace that only Josh Gibson could destroy. His versatility was exceptional and carried over to every league this man played in, which was in short, everywhere in the Western

Hemisphere that baseball called a home. (He played all nine positions and managed.)

His first season was 1923 playing for the Cuban Stars of Ed Bolden's Eastern Colored League. Before Dihigo reached his 21st birthday, he blossomed into the superstar of the league, leading or tying in home runs and hitting a robust .421 and .370 in 1926 and 1927 (Negro Leagues Museum; Kansas State University, Martin Dihigo Bio). As usual for these leagues, he was traded from the Cuban Stars to Homestead Grays in the 1928 season. Getting only a season with the Grays, he was traded again to Hilldale Daisies where he racked up a high .300 batting average.

When his seasons in the United States were over, he went back to native Cuba, terrorizing pitchers in the 1920s with a .400+ batting average. Dihigo assaulted Cuban pitching over the course of 10 league seasons, going nine times above a .300 BA.

As he 'aged' to thirty, it appears pitching became a more fruitful hobby to take up consistently. According to Negro League historian James Riley and the *Negro League E-Museum* website:

"He remained primarily an everyday player until 1935-1936 with Santa Clara in the Cuban League. But once he made the transition to pitching, he had four consecutive seasons (1935-1939) of 11-2, 14-10, 11-5, and 14-2. In the 1943-1944 winter season he was 8-1 with a 2.23 ERA. His control was good but not exceptional, nor was his strikeout ratio. His move to the mound was made when he was managing himself, winning consecutive Cuban championships in 1935-1936 with Santa Clara and with Marianao in 1936-1937. During the former season he had five base hits in the final game to overtake teammate Willie Wells for the batting title with a .358 average...

In 1937 he played in Santo Domingo with the Aquilas Cibaenas ballclub, where he was their leading hitter and ace pitcher. In a demonstration of both his versatility and ability, he finished near the top in both hitting and pitching, losing out to Satchel Paige in victories and to Josh Gibson in batting average. At the plate he tied for the league lead in home runs while finishing with a .351 batting average, third best in the

league. On the mound his 6-4 record represented the second highest win total in the league and accounted for almost half of his team's victories in the 28-game season."

Dihigo was no stranger to major league ballplayers either. His talent was so well known that HOF power hitter Johnny Mize stated other teams walked Dihigo intentionally to get to him (Negro Leagues Museum; Kansas State University, Martin Dihigo Bio). Martin passport stamps showed him playing in Mexico, Puerto Rico, Venezuela, the Dominican Republic, and throughout Latin America. Undoubtedly, his play influenced fans in these locales to get their sons into the game at an early age as his post-baseball career appointment as the Minister of Sports by Fidel Castro strongly suggested.

Dihigo died three days short of his 66th birthday in Cienfuegos, Cuba (Negro Leagues Museum; Kansas State University, Martin Dihigo Bio).



James 'Cool Papa' Bell (1903–1991): Is likely the fastest centerfielder in baseball history with an incredulous clocking of 12 seconds around the bases. Numerous sources report this as a legitimate time. By comparison, Royals legend Willie Wilson was clocked at 13.3 seconds in modern times (Wilson walk-off inside the parker versus the Yankees, titled: [1979 on Youtube](#) confirmed that clocking.). Bell was once scheduled to race 1936 Olympic 100 and 200 meter champion Jesse Owens in a match race. Cool Papa Bell is likely among the first players to switch hit *solely* to take greater advantage of his world-class speed from the left side, after starting out as

solely right-hand hitter.

Bell's ancestry was born out of the *Trail of Tears* Cherokee Indian saga in the 1830s. This 'forced evacuation' was ordered by President Andrew Jackson, as Bell ancestors took root in Starkville, Mississippi on a family farm (Negro Leagues Museum; Kansas State University, James Bell Bio).

Bell started out as ballplayers do: on the sandlots and in the pickup games of youth. His teenage years saw him work in St. Louis while improving his game to professional levels. Not surprisingly, his then strong lefty arm, and wide array of pitches and releases led him first to duty off the mound.

As the Negro Leagues took off in the early 1920s, a 19-year old Bell gained a reputation as unflappable on the mound, winning games and striking out legends such as five-tool star Oscar Charleston (Negro Leagues Museum; Kansas State University, James Bell Bio). Before he could make his *name* as a dominant pitcher (though he did, thanks to his St. Louis Star manager Bill Gatewood), Cool Papa Bell was injured, converted to centerfield, and gained a truer legacy of the speedy, daring jitterbug of a leadoff man.

He and others created but one style of play: that of daring play and speed to upset the other teams. Bell was known to turn bunt singles into doubles; long

singles into erred triples; and madden catchers with his threats and feints to steal, only to easily swipe bases despite a backstop's best efforts.

Cool Papa's services were well-used and well-traveled throughout his career. Bell was the table setter for three Negro League dynasties: the St. Louis Stars who won championships in the depression-era of 1928, 1930, and 1931; the Hall of Fame laden Pittsburgh Crawfords teams, of 1932-1936, often called the best team ever in black baseball; and lastly, the Homestead Grays of 1943-1945 for the backend of their nine consecutive championships (Negro Leagues Museum; Kansas State University, James Bell Bio). (**See:** Appendix D.)

In the late 1930s, Bell took his bat and speed south to Santo Domingo with Satchel Paige, hitting .318 and winning at-the-end-of-a-gun championship for dictator Trujillo's team. Thereafter, he moved to mainland Mexico and competed in the Mexican Leagues for Tampico, Veracruz and Torreon. At 37, Bell won the Mexican League Triple Crown: .437, 12HR, 79RBI, 119 Runs, and 28 SBs (Negro Leagues Museum; Kansas State University, James Bell Bio).

Without a doubt, Bell's peskiness was evident in his consistently high batting and the stolen bases racked up against foes. For over twenty years (1922-1946), Bell's batting averages were well above .300 plateau and his voting to every East-West All Star showcase he was eligible for, confirms the one-of-a-kind talent and fan admiration that Bell enjoyed.

After the end of his baseball career he worked as a custodian and night security officer at the St. Louis City Hall, retiring in 1970. Bell was honored for his long and distinguished baseball career by being inducted into the National Baseball Hall of Fame in 1974. He passed away one month after his wife, Clara, died in 1991, due to heart attack (Loverro 2003, 20).



Ray 'Hooks' Dandridge (1913– 1994):

Inducted into the MLB Hall of fame in 1987, third baseman-manager Ray Dandridge of 1948 New York Cubans put on masterful displays of fielding to go along with a solid contact bat. Ray perfected the sidearm throw from his knees on reaction plays that the hot corner all too often provided.

He started out with the Detroit Stars in 1933; recruited by Candy Jim Taylor out of Piedmont, Virginia (Malloy 2013). Ray though was on the move to the Newark Eagles where he stayed for much of his career in the United States as part of the "Million Dollar infield" of Mule Suttles, Willie Wells, and Dick Seay. (Dandridge played SS and 2B earlier on.)

He, like many of his contemporaries, went to Latin America for acceptance and money as he spent nearly all of WWII playing in the Latin/Mexican Leagues as the top shortstop. Because of that penchant for leaving the United States, Effa Manley, owner of the Newark Eagles, threaten unsuccessfully to get his draft

status upgraded in 1945, but he nevertheless he returned to play (Loverro 2003, 69). By the end of the war, he was scouted for breaking the color line.

From *BaseballLibrary.com*:

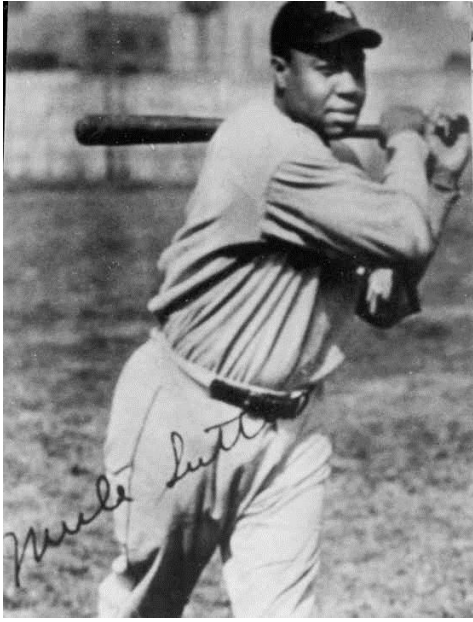
“Soon after Jackie Robinson signed with the Brooklyn Dodgers, Bill Veeck contacted Dandridge about playing with the Cleveland Indians, but Dandridge refused to leave Mexico without a bonus. Later, in 1949, at age thirty-five, he was signed by the New York Giants, and assigned to their Triple-A farm club at Minneapolis. He batted .363 his first year there, and won the league's MVP award in 1950, when he led Minneapolis [Millers] to the league championship. Despite his achievements, the Giants did not immediately promote him to the parent club.”

New York's one opportunity: Hank Thompson was injured in a spiking incident, but Dandridge was recovering from an appendectomy. Additionally, there were instances of perceived quotas to the number of African-Americans allowed up to the majors. Dandridge was extremely popular in the Land of 10,000 Lakes. This is something unlikely to immediately happen if he had gone to New York. And lastly, he was nearing the end of great career. Age waits for no one.

While at Minneapolis, Dandridge provided advice and assistance to a young Willie Mays, who never forgot the help, or the man. “Son, I played three games in one day. We made \$35 a week and ate hamburger. You're gonna eat steak and you're going to make a lot of money. You just keep it clean and be a good boy (Hirsch 2010, 72).” Returning to Cooperstown for Dandridge's induction into the Hall of Fame (Ray was elected by the Committee on Baseball Veterans in 1987), Mays stated, “Ray Dandridge helped me tremendously when I came through Minneapolis. Sometimes you just can't overlook those things. Ray was a part of me when I was coming along (Negro Leagues Museum; Kansas State University, Ray Dandridge Bio).”

When Dandridge was forty, he still hit .311. He was a smooth fielder, despite a pronounced bow-legged stance, with a least one wise crack being that a train could go between his legs, but a ground ball couldn't, earning the nickname “Squatty.” Tim Wiles, Director of Research at the Baseball Hall of Fame, noted that Cumberland Posey said about Dandridge, “There never was a smoother functioning master at 3rd base than Dandridge. And he could hit that apple too (Ray Dandridge - Behind The Plaques 2012).” Dandridge was primarily a contact man, with a great knack for hitting balls back through the box at pitchers who tried knocking him down (Malloy 2013).

Due to his age and trepidations, and by extension, his race, Dandridge was kept from the Majors during the twilight of his career. But Ray brought his experiences to bear on the greatest centerfielder in the last 70 years in Mays. And the connection was rewarded. Dandridge passed away in Palm Bay, Florida in 1994.



George 'Mule' Suttles (1901–1968): George Suttles may have been the second greatest power hitter in the Negro Leagues while playing an average 1st sack. As historian James A. Riley tells us:

“The prodigious home runs hit by the big Louisiana native were powered by muscles developed in the coal mines of Birmingham, where Suttles played semi-pro ball on the mining teams of the area. These teams formed the nucleus for the Birmingham Black Barons in later years, and Suttles’ older brother Charles was also a good player but broke his leg in the mines the same year that he was supposed to report to the Negro National League.”

Suttles was more fortunate, beginning his professional career at age 17. He played twenty-six years before bowing out as an active player, leaving behind a .338 lifetime average in league play. His longevity may be attributed to his outlook on life, which he expressed, “Don't worry about the Mule going blind, just load the wagon and give me the lines.” (Negro Leagues Museum; Kansas State University, George Suttles Bio)

Even though he was a swing-at-everything and strike-out-a-lot hitter (James, *The New Bill James Historical Baseball Abstract: The Classic – Completely Revised 2001*, 188), Suttles too was a patient hitting instructor, and frequently kept the mood light in onerous positions as were the times he played through. In the East-West All Star games, Mule hit home runs off Martin Dihigo (among others) to secure victories for the West. As a quote from the *Pittsburgh Courier's* William Nunn included in Thom Loverro's *The Encyclopedia of Negro League Baseball* vividly described:

“Suttles threw his mighty body in motion. His foot moved forward. His huge shoulder muscles bunched. Came a switch through the air, a crack as of a rifle, and a projectile hurled from a cannon, the ball started its meteoric flight. On a line it went. It was headed towards right center. [Cool Papa] Bell and [Josh] Gibson were away at the crack of the bat...That ball ticketed by Mule Suttles, CLEARED the distant fence in far away right center, landing 475 feet from home plate... (Loverro 2003, 283)”

In his barnstorming tours against MLB players saw him brutalize pitchers with hits and home runs just the same, hitting 11 round trippers in 79 at-bats against those stars. In Havana, Cuba, Mule hit with his estimated 40+ ounce bat a majestic home run that traveled nearly 200 yards (600 feet) to a where a plaque resides to honor the feat (Loverro 2003, 283).

George 'Mule' Suttles died of cancer in Newark, New Jersey in 1968 and was inducted into the HOF in 2006.



Wilbur 'Bullet Joe' Rogan (1889–1967): Considered the most versatile (Metropolitan Library System: Oklahoma Moments - Bullet Joe Rogan) aside from Martin Dihigo, Bullet Joe could bring five distinguishable pitches at a batter from a sidearm/three-quarters arm slot: fastball, curve, forkball, palmball, and spitter. Born in Oklahoma, his playing career started in the pre-Negro League era (1908), but deterred him very little as he played on to nearly 50. Wilbur joined the Army during WWI, serving his country for eight years while traveling to the Philippines, Hawaii, and Arizona, and playing baseball heavily during his armed forces hitch (Negro Leagues Museum; Kansas State University, Wilbur Rogan Bio). (Rogan, pictured left, also played all positions, hit cleanup, and managed.)

Soon after his military service was completed, Rogan became a star pitcher for the Kansas City Monarchs from 1920-1938. (A young Casey Stengel, who recommended him to J.L Wilkinson, owner of the Monarchs, scouted him out.) As an excellent fielding pitcher, true army veteran, and middle-of-the-lineup hitter, Rogan managed the Monarchs by 1926 and much of their success happened under his watch. (In 1926, he hit .583 in the playoffs while pitching both halves of the doubleheader against Willie Foster. Unfortunately, Foster got the better of his Kansas City team as noted before.)

James A. Riley reflected that various opinions existed on Bullet Joe, the manager: "A knowledgeable manager, he provided capable leadership and continued as manager of the Monarchs during his twilight years, until his retirement in 1938. During this time he was variously described as easygoing, jolly, quiet, and gentlemanly by some observers, but characterized by others as arrogant, uncooperative, and demanding of his players."

From Baseball-reference.com: "His 52 complete games is the CWL record and he ranks second in innings (516, trailing Satchel Paige and strikeouts (351, trailing Paige). He is 5th with 5 shutouts and third with 42 wins (behind Paige and Chet Brewer). A Satchel Paige quote in the book, *Blackball Stars*: "Joe Rogan was one of the world's greatest pitchers...He was a chunky little guy, but he could throw hard. He could throw as hard as Smokey Joe Williams-yeah (Bullet Rogan - BR Bullpen 2013)."

Rogan played alongside Adolfo Luque, a Cuban pitcher that passed for white in the Braves and Reds organization for a period of twenty years, and Rogan was considered far superior in pitching and hitting. Luque finished his big league career with 193 wins versus 179 losses with 3.24 ERA. Rogan amassed Negro League record of 116-50 record with a 2.60 ERA with a lifetime .338 batting average from research done by Lawrence Hogan and Jules Tygiel (Bullet Rogan - BR Bullpen 2013, *Shades of Glory*, 409).

Joe Rogan died in Kansas City in 1967 and inducted into the HOF in 1998.



John Henry 'Pop' Lloyd (1884–1965): Often called the 'Black Honus Wagner', Lloyd was alternately termed the best all-around ballplayer in the first thirty years in the 20th century, white, or otherwise. Discovered playing on the sandlots in Jacksonville, Florida in 1905 by Rube Foster and Sol White (where Lloyd had grown up), Lloyd made a long career playing on the pre-Negro League teams of the Cuban-X Giants, Philadelphia Giants, the Leland Giants, and New York Lincoln Giants (Negro Leagues Museum; Kansas State University, John Lloyd Bio). Batting left and throwing right, he dominated the field in ways rarely seen.

(Pictured left: HOF Shortstop John Henry Lloyd with HOF Jimmie Foxx: The best of their respective generations at their positions.)

As James A. Riley wrote, "He was a complete ballplayer who could hit, run, field, throw, and hit with power, especially in the clutch. A superior hitter and a dangerous base runner, his knowledge and application of inside baseball as defined in the era allowed him to generate runs with a variety of skills. In the field he was a superlative fielder who studied batters and positioned himself wisely, got a good jump on the ball, and possessed exceptional range and sure hands with which he dug balls out of the dirt like a shovel. Lloyd's play in the field earned him the nickname in Cuba of 'El Cuchara,' Spanish for 'The Tablespoon' (Negro Leagues Museum; Kansas State University, John Lloyd Bio)."

For the next fifteen years, John Lloyd played for many teams (eight at least), the best managers (Rube Foster) and compile a reputation of a winner, before the Negro Leagues were to arrive. He played well past forty, hitting .368 in Negro Leagues after age 36 (James 2001, 186).

Off the field, Lloyd was a true cut-up with a clean living personality, who did not take to vices (drink, smoke, or swearing) as many players did. He spent time in the Quartermaster office in Chicago during WWI, and after baseball, worked in the post office as a custodian. 'Pop' Lloyd managed and coached various levels of baseball and served as Little League commissioner in Atlantic City, becoming a favorite to many children and adults alike. Babe Ruth considered Lloyd the best player he had ever known (Negro Leagues Museum; Kansas State University, John Lloyd Bio).

John Henry Lloyd was inducted into the HOF in 1977.



Raleigh 'Biz' Mackey (1897–1965): Known for his rocket arm, throwing sometimes ala Benito Santiago/Tony Pena from a seated position (likely better), and with deadly accuracy, Mackey tutored four HOF players in Larry Doby, Monte Irvin, Roy Campanella, and Don Newcombe while catching and managing the Newark Eagles at his twilight.

Mackey, born in Eagle Pass, Texas, was as raw educationally as he was wise on the ball field. He relied on jokes, shooting the breeze with hitters, to throw them off

their games, while influencing the umpires to call close pitchers his way. He and his two brothers honed their ball craft while playing in the competitive locale of Texas, then churning out quality white and black ballplayers by the bushel.

Thereafter, with a league collapse, Mackey was sold to the Indianapolis ABCs, and into Foster's league. Biz showed good promise by 1922 in hitting .418 with a robust .722 slugging percentage with 28 extra base hits in 158 at-bats (BR Bullpen 2013, Raleigh Mackey Bio). Then, the league wars began; raids of talent ensued; and Mackey, left for the Eastern Color League.

The switch-hitting Mackey came up as an elite hitter, with power from both sides of the plate, as evidenced by a league-leading .413 batting average, 4 home runs, and a .533 slugging percentage for Hilldale Daisies in the Eastern Colored League's inaugural season, 1923 (BR Bullpen 2013, Raleigh Mackey Bio), as a 25-year old shortstop. In his first eleven seasons, Biz never dipped below .300.

These talents with the bat were all the more useful behind the plate, as he converted permanently, garnering the most acclaim in his career. As with others of the time, he never permanently stayed put in one locale. As one to can surmise, the better you were, the more likely you were in high demand – in essence – black ballplayers tasted liberally free agency about 50 years prior to the MLB fight in the 1970s. Mackey wanderlust came in tours of Japan three times during the Hoover and FDR days, setting up the Japanese addiction to the American pastime just prior to the biggest conflict in world history.

Back in the U.S., it was Mackey who first taught Roy Campanella (age 15–16) about catching as a member of the Baltimore Elite Giants in 1937. Raleigh, in total, played twenty-four seasons, becoming more defense, less offense as time wore on. He took to managing the Newark Eagles in 1942, while at odds with his owner, namely, Effa Manley, as he was let go due to "ethics."

He did not play again until 1945. In 1946, he managed a double play combo of Larry Doby and Monte Irvin to Newark's only World Series title. Newark, that year, was led on the bump by legends HOF Leon Day, Max Manning, and Rufus Lewis (McNary 2003, 121-122). Mackey extraordinary gifts, are evidenced by this quote:

"Although he was barely literate, Mackey was intelligent, had a good baseball mind, and employed a studious approach to the game. The ballpark was his classroom, and inside baseball was his subject of expertise. He relied on meticulous observation and a retentive memory to match weaknesses of opposing hitters with the strengths of his pitching staff. An expert handler of pitchers, he also studied people and could direct the temperaments of his hurlers as well as he did their repertoires.

He was also a jokester, and utilized good-natured banter and irrelevant conversation to try to distract a hitter and break his concentration at the plate, and was a master at 'stealing' strikes from umpires by framing and funneling pitches. Pitchers recognized his generalship and liked to pitch to the big, husky receiver who, for his size, was surprisingly agile behind the plate. This unexpected quickness, coupled

with soft hands, enabled the versatile athlete to play often at shortstop, third base, or in the outfield, and although lacking noteworthy range, he proved adept at any position. He was also a smart base runner and, although not fast, pilfered his share of bases." (Negro Leagues Museum; Kansas State University, Raleigh Mackey Bio)

After a long career, spanning nearly the entire Negro League era, Biz Mackey worked as a forklift operator. Mackey was lifted up to the Hall in 2006.



Hilton Smith (1912–1983): Another Texan, Hilton Lee Smith was as quiet as Satchel Paige was boastful. Because of that, his accomplishments were always contrasted with his later teammate, though by comparison Smith was as well-rounded, and polished, as Paige was rough-and-ready. Discovered as a Prairie View A&M prodigy at nineteen after a couple years of college ball, Smith was signed by the Austin Senators, an independent semi-pro team, to match the usually powerful Chicago American Giants. (Smith subbed as a first sacker and outfielder.)

Before long Hilton was traveling south of the border to face Mexican league competition while showing off his dominate, unusual stuff, and hitting rather well. Smith had a very special fast curve to go with sinker, slider, screwball, change and excellent gas, all commanded and thrown from different arm slots. As a 6'2" lanky pitcher, he intimidated through his ability to get any pitch over the plate. All the while, Hilton was quiet but confident as he went from pro team to pro team, like others of his day were prone (and nearly required) to do. He carried a solid bat, able to provide offense (batting cleanup in a Wichita, Kansas semi-pro tournament) when other teammates were too hung over (McNary 2003, 162). (His North Dakota-based teammates: Ted "Double Duty" Radcliffe, Chet Brewer, and Satchel Paige.)

Smart is but one adjective used to describe Hilton Smith as he went on to various teams, winning consistently and always performing in the shadows of other greats. He was known for picking off runners by upsetting runner's timing through prolonged waits to home. Smith's Negro League record of (161-32, .834) from 1937-1948 is among the best recorded in the era, black or white.

He was inducted into Cooperstown in 2001, 18 years after his death in Kansas City.



Oscar Charleston (1896–1954): Born in Indianapolis, Charleston was Ty Cobb, Tris Speaker, and Babe Ruth rolled into one. As a left-handed power hitter, with speed aplenty, an accurate arm, and smarts in the OF, he oozed great ability along with volatile emotions. (Three Cobb-like incidents: beating up an umpire, removing the hood of a KKK member, and total disregard on the base paths, spikes elevated on every slide (McNary 2003, 133).) He served in the U.S. Army (24th infantry team) and was stationed in Manila, Philippines during the war's beginning.

As the best center fielder before (or after) Cool Papa Bell, Oscar ran track, clocking a 23-second timing in the 220-yard dash. In 1921, as a member of the St. Louis Giants, he led the NNL in hitting (.446), 1st in triples (10), 1st in total bases (137), 1st in slugging (.774) and 1st in steals (28) (McNary 2003, 133). For the Roaring Twenties, he hit over .400 in league play, labeled the leagues' premier clutch hitter, and often was referred to in the black sports press as "The Hoosier Comet."



As a manager, Charleston was as unstable as when he was the best player, never really retiring from the game. He took over as player-manager of the Crawfords in 1931, staying with the Greenlee's powerhouse until they folded in 1938. Later, Oscar managed the Indianapolis Clowns, utilizing *King Tut* as his pitcher. Oscar Charleston is considered by many experts to be in the same class as Willie Mays as an all-around player, and possibly, better for his era.

Charleston passed away in 1954 in Philadelphia (heart attack) and enshrined in the MLB HOF in 1976.

(Pictured above: King Tut, manager Oscar Charleston, and Connie Morgan of the Indianapolis Clowns.)



Buck Leonard (1907 –1997): Growing up in North Carolina, Walter Fenner “Buck” Leonard barely knew a childhood before being required to work for his family’s survival, after his father’s death from influenza. With his 8th grade graduation at thirteen, Buck Leonard quit school and started sewing hosiery, shining shoes before advancing through various jobs as a porter, messenger, and railroad mechanic at Atlantic Coast Line Railroad over the next decade (Snyder, *Beyond the Shadow of the Senators: The Untold Story of the Homestead Grays and the Integration of Baseball* 2003, 16). Leonard took charge of his family’s finances and fortunes and enjoyed baseball as a diversion throughout the 1920s, but little desire to expand his exploits beyond the sandlots. (Leonard played first base, outfield, and managed.)

Quiet, thoughtful, but firm, “Bucky” (Snyder 2003, 17) was a role model for his five siblings, wanted college for his younger brother, Charlie, even though they soon went to professional baseball by 1933. After a decade as a railroad mechanic, Buck was laid off by Depression forces. Buck’s exploits in baseball were widely known in the area, leading to an offer to play for money. After various stints on semi-pro teams in 1933, Leonard was sent to retired pitching legend-turned-bartender Smokey Joe Williams who suggested the Homestead Grays as a solution to bouncing around from team to team (Snyder 2003, 28).

Soon after, into the 1934 season, and an initial rebuff by Cum Posey, Leonard achieved praise for his left-hand power and solid fielding. The moniker the ‘Lou Gehrig of the Negro leagues’, grew as Leonard played alongside Josh Gibson for 9 seasons, batting 3rd or 4th in the lethal lineup of the Grays. As a highly paid player, just behind Satchel Paige or Gibson (which was only around \$300/month in these leagues), Buck Leonard traveled coast to coast, but kept his brother Charlie, who he felt had other skills, from playing professional baseball. This after Charlie made it to the Newark Eagles in 1936. Yet, in retrospect, Charlie Leonard was not done a disservice as he landed well: becoming a teacher, employment specialist, and community leader (Snyder 2003, 47-48).

Buck was class personified; he brought an eager, respectable and business-like approach to the 1st sack position. He had no equal during the late 1930s and early 1940s as he played in more All-Star games and racked up records for homers, RBIs, and total bases in the East-West all-star classics. Leonard hit well over .300 for his career, consistently hit home runs into his late 40s, as his 13 home runs in 62 games in a Central Mexican League in 1955 confirms (McNary 2003, 150).

In 1994, Buck was named honorary captain for the MLB All-Star game. In 1999, he was one of five Negro Leagues players named to *The Sporting News* All-Century team. (Rocky Mount Government Offices 2010)



Roy Campanella (1921-1993): As the 1st Negro catcher in MLB, he redefined this position immediately with a powerful bat and a steadying influence on the perennially powerful Dodger pitching staff. "Campy" was almost the polar opposite of Jackie Robinson: a friendly, non-confrontational man even during the toughest of situations; whereas, Jackie was hardened to win at all costs on the field. Roy "Poochinella" Campanella honed his catching skills from Biz Mackey, and his immediate stardom in the National League reflected the lack of skill that was available at that crucial position in all of baseball. (Negro Leagues Museum; Kansas State University, Roy Campanella Bio)

He began his playing career as a 15-year pupil for the Baltimore Elite Giants in 1937. He would, like so many others, go to Mexico, Cuba, and Puerto Rico to play baseball in the 1940s, reflecting well on his abilities. While growing into an immensely talented hitter in the Negro Leagues, it was his destiny to become a Brooklyn Dodger. He joined Jackie Robinson and pitching ace Don Newcombe in remaking the Dodgers into the yearly contenders for the NL pennant and opponents of the Yankees. But as early as 1938, Roy was slated for a different team, for a moment, as James Riley penned for the *Negro Leagues Baseball Museum*: "As a high-school student he was invited by the Philadelphia Phillies to work out at Shibe Park, but when he arrived and they discovered he was black, the offer was rescinded (Negro Leagues Museum; Kansas State University, Roy Campanella Bio)."

At 27, Campanella reached the majors and hit a modest .258 in his first season, after winning the MVP of the Eastern League (with the Montreal Royals, Jackie's first team) in 1946 and 1947. During the next 9 seasons, Roy slugged .513 with a .359 OBP for the Dodgers, averaging 26 home runs in 453 at bats.

During the early fifties, Campanella toured after the season with the *Jackie Robinson All-Stars*, playing against Syd Pollock's Indianapolis Clowns. The great all-black touring team fielded a young Hank Aaron, as a filler, after *The Hammer* played in Eau Claire for the Braves. In the same instant of time, Campanella won 3 NL MVPs, taking the Brooklyn team to their only World Series title. He pounded 32 home runs, batted .318, and drove in 107 runs in 1955. As Brooklyn crowds stagnated, even with the title drought gone, one quote reflected Campy's crowd counting ability: "Campy could walk into a field and take one look and tell you within 50 how many people were there (Pollock and Riley 2006, 267-268)."

Greatness can have tragedies interfere with envisioned continuance of success. Campanella was cut down in a freak car accident on a snowy night; left paralyzed from the waist down. By then, Campanella had achieved accolades comparable to his crosstown catcher adversary: Yogi Berra. Both catchers, Yogi Berra (HOF 1972) and Campanella (HOF 1969), left their indelible marks.

Campanella died in Woodland Hills, California on June 26, 1993 at age 71.



John Welsey Donaldson (1892–1970): From every account, Donaldson was a total class act as a player no matter where he took the mound. A lean 5'11" lefty, with a powerful arm and a snapdragon curve, Donaldson was born in Glasgow, Missouri on February 20, 1892. His barnstorming career started in 1911 and lasted well into middle of the Great Depression. Most of his best work was accomplished prior to the formation of Foster's Negro National League, but he did play center field for the original Kansas City Monarchs, formed by J.L. Wilkinson in 1920 through 1922 (Gorton and Sinke, *Monarchs Will Play*

K of C This Afternoon 1920).

Donaldson came onto the scene as a well-known commodity from barnstorming tours, there pitching against all comers, including disgraced 1919 Chicago White Sox shortstop Charles Risberg in 1925 (*Swinging For The Fences: A History of Black Baseball in Minnesota* 2005). As with all Negro League and pre-Negro League stars, Donaldson packed his suitcase frequently: Los Angeles; North Dakota; Kansas City; Chicago; Detroit; Brooklyn; Canada; and Palm Beach, Florida, hitting 23 states in all, but primarily stationing around Minnesota (Twin Cities Public Television, Inc. 2011). Donaldson starred on the *All Nations* squad during the 1910s. And from researcher's accounts, namely Pete Gorton, Donaldson amassed the following impressive statistics (from *Wikipedia*):

378-135 W-L, (.737) Winning %	13 no-hitters, 22 one-hitters and a perfect game
4,409 strikeouts	334 BA in over 1,800 at bats
1.37 ERA and 86 shutouts	
Completed 296 of 322 starts (92%)	

Donaldson's skills caught the eye of John McGraw (once again) who made these two statements: "I think he is the greatest I ever have seen, and I would give \$50,000 for him if it weren't for the color line in baseball," and "If I could dunk him in calamine lotion, I'd sign him." McGraw's penchant for seeking talent – going back to Cherokee Charlie Grant – was truly unabashed, but unfortunately, it did not lead him to act too strongly on his evaluations.

After his playing days were over, Donaldson worked at the U.S. postal service in the early 1940s and coached and mentored Satchel Paige for a while. After Jackie Robinson broke into the bigs, Donaldson became the first African American scout for the Chicago White Sox in 1949. He attempted to nab Ernie Banks for the White Sox, but came up empty. His scouting ability did put Sam Hairston in the majors, the grandfather of Jerry Hairston, Jr., thus spanning a century of baseball from Donaldson to the Hairstons.

John Donaldson's playing ability was uniquely honored by a 1952 *Pittsburgh Courier* poll, voting on by former Negro leagues players putting him as first-team left-handed pitcher. Donaldson passed away, residing near Chicago, and was buried in Burr Oak Cemetery in Alsip, Illinois in an unmarked grave (*Wikipedia*.)

Donaldson finally received a marker in 2004. With the assistance of Jeremy Krock and SABR Negro League committee head Larry Lester, the *Negro Leagues Grave Marker Project* formed in 2004 to honor a host of players that were not blessed with the resources to provide a lasting tribute to a life played out on the baseball stage. Baseball men Fay Vincent, Jerry Reinsdorf, and Don Zimmer have contributed to the project along with countless others.



William 'Judy' Johnson (1899-1989): Considered among the smartest and clutch players of his day, Judy Johnson's wiry build, weighing in at under 150 pounds at 5'11" tall, made him less visible until a ball was hit. His value as a ballplayer was measured by his slick fielding (akin to Brooks Robinson (McNary 2003, 147)) and great arm at 3B. As a teenager, he grew up in Wilmington, Delaware, playing baseball for his dad's local team before taking a job at the New Jersey docks during the later phases of WWI. Even as a line drive hitter, it was his game-winning home run in the 1st Negro League World Series in 1924 that kept the Hilldale Daisies close, eventually losing the nine-game set to the Monarchs.

As another famous teammate on the Pittsburgh Crawfords, outfielder Ted Page, crowed about Johnson's third sack skills: "Judy Johnson was the smartest third baseman I ever came across. A scientific ball player, he did everything with grace and poise. You talk about playing third base? Heck, he was better than anybody I saw. And I saw Brooks Robinson, Mike Schmidt, and even Pie Traynor. He had a powerful, accurate arm. He could do anything, come in for a ball, cut it off at the line, or range way over toward the shortstop hole. He was really something (Negro Leagues Museum; Kansas State University, William Johnson Bio)."

As sure-handed as he was, Johnson's quiet nature defined him as the consummate professional. He knew his job and did it well. In 1952, the *Pittsburgh Courier* named him the 2nd best 3rd basemen behind Oliver Marcell, who played a similarly stingy 3rd base in that 1st Negro League World Series.

After his playing career, Johnson worked for the Milwaukee Braves as a scout in the vein of Buck O'Neil, bringing speedster Bill Bruton to the big leagues and into his own family as son-in-law.

He was inducted into Baseball's HOF in 1975 and lived to be 89 years old, passing away in Wilmington, Delaware.



Joseph 'Smokey Joe' Williams (1885-1946): Considered by many Negro League players and historians the fastest pitcher of all-time, this rangy righty (6'4"+, 190-200 lbs.) cut his teeth in Texas, in the pre-Negro Leagues. His speed, longevity, and origins were most similar to Nolan Ryan's. He was born in Seguin, Texas, and first made his presence felt in Texas as a star hurler, pitching for the San Antonio Black Broncos from 1907-1909.

Before long, he was testing out his overpowering stuff against the best Negro teams (led by Rube Foster) and defeating them in overwhelming fashion. As a result of his mastery, Williams was signed to pitch for Frank Leland's Chicago Giants in 1910, Rube's team. After only a season, he moved over to the New York Lincoln Giants where he stayed for the next decade. In his head-to-head match ups against premier MLB pitchers such as Grover Cleveland Alexander, Waite Hoyt, Chief Bender and Walter Johnson, he won 20 out of 27 games (McNary 2003, 166). (Williams was another

pitcher/1B/manager type.)

Baseballlibrary.com asserts this record as 22-7-1 and adds more to the story:

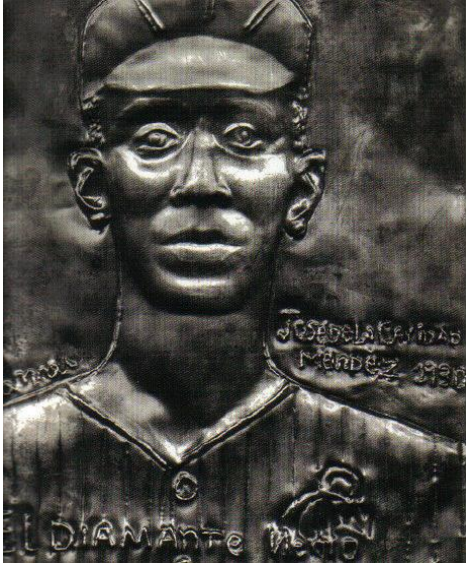
"In exhibition games against major leaguers, Williams compiled a 22-7-1 record with 12 shutouts. Two of the losses came when he was 45 years old; two others were in 1-0 games. In 1912 he shut out the National League champion New York Giants 6-0. In 1915 he struck out 10 while hurling a 1-0 three-hit shutout over Hall of Famer Grover Cleveland Alexander and the Phillies. In a 1917 exhibition, he no-hit the Giants and struck out 20, but lost 1-0 on an error. Though no box score has been found to confirm this game, it is firmly rooted in oral history. Legend has it that it was after this game that Giants Hall of Famer Ross Youngs tagged Williams with the name 'Smokey Joe.' Ty Cobb, never a trusted friend to any player, black or white, said Williams was a 'sure 30-game winner' if he had played in the majors. Williams threw approximately 40 no-hitters, some against semi-pro competition, recording his last gem in 1928 at forty-two."

As he aged, and lost the overpowering stuff, Williams substituted power with impeccable control and guile on the mound, pitching into his late 40s with above .500 success rate.

Some confusion exists over Williams's death as this quote reflects, "The Clowns opened their 1950 season May 7 with a doubleheader against the New York Cubans at the Polo Grounds attended by all-time great pitcher Smokey Joe Williams, then 64 years old. The games were played in his honor...Smokey Joe spent a good part of May 7, 1950, in the Clowns dugout, and Dad [Syd Pollock] introduced us, but then, as close to him as I wanted to get, I could get no nearer than the far side of five or six players...soaking up his thoughts and black baseball

lore (Pollock and Riley 2006, 178-179).” According to various sources, Smokey Joe Williams passed away on March 12, 1946 in New York City, some four years before this event occurred.

But Joseph ‘Smokey Joe’ Williams exploits over a quarter-century of pitching are established as are those of legend too. In 1952, the *Pittsburgh Courier* poll named him the best pitcher of all-time, one vote ahead of Satchel Paige. He received induction in the HOF in 1999.



José Mendez Baez (1887-1928): Of Cuban nationality and descent, Mendez was another extremely hard thrower that brought a Doc Gooden-like curve ball to bear on his opponents.

After growing up in Cuba, he played first in Havana for the top Cuban national team in 1903. His first U.S. experience came five years later, playing for Brooklyn Royal Giants in 1908 (Negro Leagues Museum; Kansas State University, Jose Mendez Baez Bio). For 1909 Cuban Stars, he went 44-2 (some games were played against semi-pro teams). He spent all of 1910 in Cuba, playing both summer and winter, going 18-2. By 1914, at 31, he had compiled a 62-17 record in Cuba, but he developed arm trouble and never again pitched there regularly (from *Baseballlibrary.com*). (Baez, in the engraving left, was the manager for the Kansas City Monarchs in their 1st World Series.)

During this time frame, 1908-1915, pitching against John McGraw's New York Giants, and fortified with some Dodgers added to the roster, Mendez defeated both Christy Mathewson (4-3 in 10 innings) and Nap Rucker (2-1) over a three-day span, with only a day of rest between games. McGraw proclaimed Mendez to be, "sort of Walter Johnson and Grover Alexander rolled into one" and appraising his value to a club to be worth \$30,000 a year if he were white, and would have welcomed his presence on the Giants' pitching staff alongside Mathewson (Negro Leagues Museum; Kansas State University, Jose Mendez Baez Bio). Mendez played for the *All-Nations* squad of Kansas City, a group that provided musical entertainment along with exciting baseball. Mendez played the cornet in the band (Loverro 2003, 203).

Mendez was the series-deciding pitcher/manager of the Monarchs in the 1st modern Negro League World Series. Pitching the 9th game, he won against Script Lee of the Hilldale Daises, going the distance with the final out made by then SS Raleigh ‘Biz’ Mackey. At this point in his pitching career, Mendez rarely took the mound, and was in fact, recovering from a recent surgery (McNary 2003, 107-110). In the following season, the Monarchs were back, but lost the 1925 Series against those same Hilldale Daises.

Mendez died from bronchopneumonia on Halloween 1928, in Havana, Cuba, at forty-one, barely two years after his last game with the Monarchs. In 1939, he was in the first group of players elected to the Cuban Hall of Fame. In 2006,

Mendez was inducted into the National Baseball Hall of Fame (Negro Leagues Museum; Kansas State University, Jose Mendez Baez Bio).

Other Players & Owners of Noteworthiness



Frank Leland (far left) – As owner and manager of the Chicago’s Leland Giants of the turn of the 20th century, Leland maintained membership on the Cook County Board of Commissioners (Loverro 2003, 175).

Abe & Effa Manley – Owners of the Newark Eagles during the heyday of the Negro Leagues in the early 1940s. They suffered financially after the 1946 Negro League World Series and sold their team after 1948 (McNary 2003, 124).



Before he was the All-time Home Run king, **Henry Louis "Hammerin' Hank" Aaron** played for the Birmingham Black Bears and Indianapolis Clowns for \$200 per month, batting cross-handed. He drove the record breaker off Al Downing, fellow African-American, while HOF announcer Vin Scully watched Henry circling the bases in glory. After 33 years, Barry Bonds broke his record of 755 Home Runs, but not with the same feelings surrounding the accomplishment. Now: Works in the commissioner’s office of MLB to promote the welfare of the game. (Picture: Public Domain)



Ernie Banks, HOF SS: Before he was “Mr. Cub” he was a Sheepherder from San Antonio in 1949. A year later, he was Kansas City Monarch, making an impression on Buck O’Neil that brought him to Chicago with fellow Negro Leaguer George Altman. Banks set the new standard as a power-hitting shortstop, amassing 277 before moving to 1st base. Now: A mainstay at Wrigley Field events. (Courtesy of Scott R. Anselmo)

Table. Defining Players MLB Statistics & Notes

Name	AB	Hits	Runs	HR	RBI	BA	GS	Wins	IP	Notes
Hank Aaron	12,364	3,771	2,174	755	2,297	0.305				Buddy Downs & Indianapolis Clowns
Ernie Banks	9,421	2,583	1,305	512	1,636	0.274				A-Rod type power in the 1950s
Roy Campanella	4,205	1,161	627	242	856	0.276				Biz Mackey, 3-time MVP
Larry Doby	5,348	1,515	960	253	970	0.283				1948 WS Home Run
Mike Gonzalez	2,829	717	283	13	263	0.253				Cuban Catcher 1910-1920s
Elston Howard	5,363	1,471	619	167	762	0.274				Yankees 1st African American
Monte Irvin	2,499	731	366	99	443	0.293				With Willie Mays in 1954
Dolf Luque	1,043	237	96	5	90	0.227	365	194	3220.3	Pride of Havana Pitcher in the 1920s
Willie Mays	10,881	3,283	2,062	660	1,903	0.302				Leo Durocher’s patience helped
Minnie Minoso	6,579	1,963	1,136	186	1,023	0.298				Could not retire
Don Newcombe	1,006	275	106	16	119	0.273	337	162	2459.0	In Japan in 1962
Satchel Paige	124	12	2	0	4	0.097	26	28	476.0	Minnie as a pitcher
Jackie Robinson	4,877	1,518	947	137	734	0.311				Originator of it all

Negro Leagues Versus Their Players

The best players could always jump ship, if league financials went south, as was often the case led and made by Satchel Paige. (Famous for a 1937 departure with eight other Pittsburgh Crawfords, including center field great James ‘Cool Papa’ Bell, to participate in the Dominican Republic for President/Dictator Rafael Leonidas Trujillo Molina tournament where winning was required.) In his defense, Paige’s ability to pitch was in high demand in the United States and on foreign soils. Other players routinely went where the money was, because contracts were very rarely written, and often, less enforceable, while living conditions too were considerably better outside the United States.

Again, Satchel Paige proffered much of his own discontent was due to financial shortfalls and second-rate treatment while many white ballplayers he played against (and saw too often) were given excellent accommodations.

Outside the United States, black ballplayers received first-class digs and respectability not seen anywhere stateside. (Another minor reason: Josh Gibson was sued by his owner, Effa Manley, for skipping out on a season. Owners wanted loyalty even when disloyal dealings did occur, usually non-payment.)

A 1937 Summer Vacation? : Satchel meets his *Matchel* in Trujillo

In *Shades of Glory* by Professor Lawrence Hogan, the 1937 Dominican Republic tour becomes a vivid picture. The Dominican Republic was under the jackboot of Trujillo for seven years. He renamed most of the island in his honor and persuasively urged people to place plaques in their homes that read in Spanish: "In this house, Trujillo is the chief." So it was of little surprise that when a San Pedro de Macoris team won the island championship, upstaging Trujillo's monopoly of what was considered "best", that the narcissistic Rafael Trujillo went to work.

He captured the best of the Negro League stars to integrate with a local team put together in the banana dictatorship. Satchel Paige flew in on a Pan American biplane, chasing more pesos and good times, thanks to the megalomaniac's soothing emissaries in New Orleans. Others, from the states and beyond, made their way to island: Josh Gibson, Luis Tiant, Sr., Martin Dihigo, Sam Bankhead, Chet Brewer, Perucho Cepeda (father of Orlando Cepeda), and Tetalo Vergas all played in this multi-team tournament with only one acceptable winner.

Los Dragones de Ciudad Trujillo had Paige, Bankhead, and Gibson to obtain wins. But the dictator employed ways to assure Paige remained compliant, as fellow Negro Leaguer pitcher Chet Brewer reminiscences: "I went looking around for Paige one early evening for a beer, and couldn't find him anywhere. A young boy I came across told me he was 'en la cárcel' (in jail). Trujillo had put them in the night before they were going to play us so they wouldn't rouse around." Paige closed out the tournament against Brewer's team, the *Aguilas*, in stopping a comeback in its tracks at 8-6 in the ninth (Hogan 2006, 297-301).

Lucky for Paige, the armed guards, a night in jail, and softly whispered threats encouraged him to bee ball his way out of this Dominican island jam.

Negro League East-West All-Stars

When people think of the greatest Negro League stars, most envisioned them playing at their best in a mid-summer classic called the East-West All Star game. Started by owner/promoter Gus Greenlee (and Roy Sparrow) in the Depression as a way to showcase the best players via the popular votes cast in newspapers such as the *Chicago Defender*, *Kansas City Call*, *Pittsburgh Courier* and *Philadelphia Tribune*, this game was among the most attended in all of professional baseball history.

In such an era, promoting the game, arranging for a playing field, and advancing money for travel for players and umpires, was difficult for all but the richest magnates of the major leagues. But the Negro Leagues found the

resources for a \$5,000 plus, one-game park fee and made minimal profits (less than \$400 per owner) for abridging their 'normal schedule (Lester 2001, 50).' (\$5,000 is likely a \$75,000 investment in 2014 dollars.)

The marketing key for this event was the inclusion of fans voting on whom they wanted to see most. Also, the usage of Comiskey Park, long-time haven for the best of the best the Negro Leagues had, going back Rube Foster's influence, enhanced marketing through locating well. The newspapers influenced the promotion as they were under the economic constraints of circumstances beyond their control. John L. Clark of the *Pittsburgh Courier* though noted that critics from "the fourth estate" existed, no matter how well or well-designed the East-West classic was in its intent: to provide entertainment, remove some of the sting of hard times, and make a profit for all parties involved.

After immediate success, the heyday of this classic was in the mid-1940s when more than 50,000 came out to Comiskey Park to view the very best players a nation at war had left playing. It was a competitive showcase: the best way white America would ever hear of, or see such talent first hand as the game was not just an exhibition, but a real game amongst the very best. (A guy like Pete Rose would fit well in this mix, given his all-star game take out of Cleveland catcher Ray Fosse.)

While such famous moments in the MLB all-star games history are not unusual - such as when Carl Hubbell struck out Ruth, Gehrig, Foxx, Simmons, and Cronin; Ted Williams hitting the 'efus' pitch deep; Reggie Jackson going completely out of Tiger Stadium; or John Kruk losing his composure and will to tackle a purposefully wild Randy Johnson 99-MPH fastball - the Negro League games were filled with exciting action and exploits, now all but forgotten. (Note: Larry Lester's *Black's Baseball National Showcase: The East-West All-Star Game, 1933-1953* provides excellent access to game recounts and fourth estate quips and quibbles.)

One East-West example: In the 1935 East-West classic, after a 4-4 tie headed into the 10th, both sides scored four times to send it into the 11th inning. In the bottom of the 11th, Josh Gibson stood ready to untie the game with a runner on second, having already pounded out 4 hits. But he was walked by Martin Dihigo to face Mule Suttles. Suttles promptly made Dihigo pay, as the Mule kicked, and the East won 11-8 (Riley 1997, 62).

Table. All Star Game Results & Attendance (*Black Baseball's National Showcase, Lester, 401*)

Year	Location	West	East	W. Pitcher	L. Pitcher	Attendance
1933	Comiskey	11	7	Willie Foster	Sam Streeter	19,568
1934	Comiskey	0	1	Satchel Paige	Willie Foster	30,000
1935	Comiskey	11	8	Sug Cornelius	Martin Dihigo	25,000
1936	Comiskey	2	10	Leroy Matlock	Sug Cornelius	26,400
1937	Comiskey	2	7	Barney Morris	Hilton Smith	25,000
1938	Comiskey	5	4	Hilton Smith	Edsall Walker	30,000
1939	Comiskey	4	2	Ted Radcliffe	Roy Bartlow	40,000
1939	Yankee	2	10	Bill Byrd	Smoky Owens	20,000
1940	Comiskey	0	11	Henry McHenry	Gene Bremer	25,000
1941	Comiskey	3	8	Terris McDuffie	Hilton Smith	50,256
1942	Comiskey	2	5	Leon Day	Satchel Paige	45,179
1942	Cleveland	2	9	Gene Smith	Gene Bremer	10,791
1943	Comiskey	2	1	Satchel Paige	Dave Barnhill	51,723
1944	Comiskey	7	4	Gentry Jessup	Carrenza Howard	46,247
1945	Comiskey	9	6	Verdell Mathis	Tom Glover	33,088
1946	Griffith	4	1	Bill Byrd	Vibert Clarke	16,268
1946	Comiskey	3	5	Dan Bankhead	Bill Byrd	45,474
1947	Comiskey	5	2	Dan Bankhead	Max Manning	48,112
1947	Yankee	8	2	Ford Smith	Rufus Lewis	38,402
1948	Comiskey	3	0	Bill Powell	Rufus Lewis	42,099
1948	Yankee	1	6	Max Manning	Vibert Clarke	17,928
1949	Comiskey	0	4	Bob Griffith	Gene Richardson	31,097
1950	Comiskey	5	3	Connie Johnson	Raul Galata	24,614
1951	Comiskey	1	3	Kelly Searcy	Vibert Clarke	21,312
1952	Comiskey	7	3	Dick Phillips	Groundhog Thompson	18,279
1953	Comiskey	5	1	Buddy Woods	Willy Gaines	10,000
	Avg. Runs	4.00	4.73		Average Attendance	30,455

Barnstorming with The Dean of Pitching

Supplementing baseball income by either race was a constant necessity. Very few professionals made enough; required to find other avenues of income in order to be an upper-tier wage earner. Even at that, the highest paid athletes were never known for financial management strategies, or understanding their nova-like rise was to be soon followed by a steep decline to a common-man's functionality. As a product of that, most players did rely on their skills as ballplayers year round, and joined up their economic plights to put a few dollars in the pocket, and enjoyed the aspects of road together. (And sins thereof.)

Coast to coast these men plied a living via exhibitions, taking on semi-pro teams, doing tourneys in North Dakota, Kansas and Colorado, and anywhere else it was hospitable enough to perform. (And avoiding league constraints; and scheduled championships; causing turmoil operations above and beyond what

was allowed in Major Leagues. Commissioners in the Negro Leagues were short-lived, weak, and nearly always at the mercy of whatever the owners did, and did not agree on, especially the disciplining players.)

As wild and wily as Satchel Paige was, Jay Hanna "Dizzy" Dean became fortuitously connected to the man of the bee ball. Both were fun-loving; materially-minded; and had out-of-sight dynamic stuff on the mound in their prime years. Dean, for his part, is the second to last pitcher to win 30 MLB games. But very early on, Dizzy was just another cocky hayseed from Hicksville, who was prone to acquire that which did not belong to him (Golenbock, *The Spirit of St. Louis: A History of The St. Louis Cardinals and Browns* 2000, 135).



Dizzy: "I don't think there's a sum bitch that can hit us today."

Satchel: "Why do we need fielders? I need to skate this party early – got me a gig in the Dominican..."

Dizzy: "I might be in Chicago soon, if Rickey don't pay me better."

(A fake conversation between the legends pictured above.)

Paige and Dean paired off in various contests of pitching in the mid-1930s, with Paige in one instance beating Dean 1-0 in a 13-inning duel. In putting nearly 30,000 in the seats during a May 1942 Wrigley Field contest, as Dean was retired *for the moment* from the majors, Paige's pre-majors stardom outdrew all but one big league contest that day (Lanctot 2004, 126-127).

Their unique pairing even went as far as injuries – with Paige developing a dead arm in 1938 in Mexico while Dean had a freak foot injury take away *that special something* you just don't gain *by accident*. A change in Dean's mechanics ended one career – and yet, gave him another as the ultimate cutup announcer. Paige's comeback landed in the show in 1948, becoming the oldest rookie in the majors, just a year after Dean hung his last curve in the bigs. And each garnered

admission to the Hall of Fame six years after their last game – Dizzy in 1953; and Satchel in 1971.

A Few, Negro League Best Players by *Primary* Position

Managers

Andrew Rube Foster
C.I. Taylor
Frank Leland

Catchers

Raleigh “Biz” Mackey
Joshua Gibson
Roy Campanella
Ted Radcliffe
Louis Santop
Buck Ewing

Pitchers

Smokey Joe Williams
Satchel Paige
Willie Foster
Hilton Smith
Jose Mendez
Leroy Matlock
John Donaldson
Leon Day
Martin Dihigo – all round best

1st Baseman

Buck Leonard
Mule Suttles
Luke Easter
Goose Tatum
Buck O’Neil

3rd Baseman

Judy Johnson
Oliver Marcelle
Wilmer Fields
Dave Malarcher
Minnie Minoso

Shortstop

John Henry Lloyd
Willie Wells
Thomas “Pee Wee” Butts
Dick Lundy
Monte Irvin
John Beckwith
Willard Brown
Ernie Banks

2nd Baseman

Bingo DeMoss
Larry Doby
Charles Grant
Piper Davis
Newt Allen
Jackie Robinson
James Gilliam

Left Field

Cristobal Torriente
Wilbur “Bullet Joe” Rogan
Sam Bankhead
Herbert “Rap” Dixon

Center Field

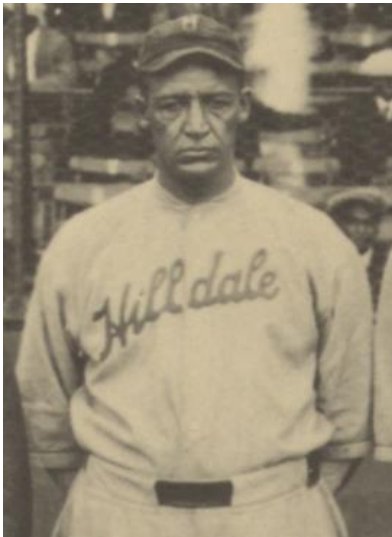
Oscar Charleston
Norman Turkey Stearnes
James “Cool Papa” Bell
Floyd “Jelly” Gardner
Willie Mays
Sam Jethroe

Right Field

Jimmy Crutchfield
Ted Page
Henry Aaron

Note: **Bold** denotes best, **blue** MLB player, **Yellow** Top Pitcher

Negro League Hotbeds



Hilldale Daisies. Hilldale grew as a black "satellite community", a 45-minute trolley ride just southwest of Philadelphia. The Daisies formed in 1910, with the originator, A.D. Thompson, departing after only a season, leaving Ed Bolden to take the reins. Not a savvy ballplayer, but a postal worker, Bolden took the local team to a respectable 23-6 record in 1911. With differentiation being a key to black baseball success, Bolden utilized local press to sell his team exploits throughout a season, primarily in the Philadelphia Tribune (Hogan 2006, 139-141).

With an eye to searching out talent and demands for clean baseball, Bolden positioned himself well in Philly, staying out of the clutches of Nat Strong's orbit in New York, and letting success speak for itself in the community. He signed top men coming north during the Great Migration, including professionals Spotswood Poles, Bill Petus, Otto Briggs, and Louis Santop.

Tyler, Texas born catcher Louis Santop (pictured above), nicknamed the "Clan Darbie Siege Gun" or "Top", buttressed Bolden's growing dynasty as the premier power-hitting backstop in 1917, joining up with Bolden's Daisies before heading to the U.S. Navy for WWI. Santop was a moonshot hitter, sending balls Ruthian distances, thus earning the moniker, Seige Gun. He was also volatile; as an Oscar Charleston scuffle led to the breaking of three of Charleston's ribs. At 6'4"-240 pounds, Santop was brash, confident, and hit from most reports near .400 against all comers.

Santop stayed a part of Bolden's team in the 1920s (Hogan 2006, 142-43) as the Hilldale 'Giants' won the first three Eastern Colored League titles, 1923 - 25, and the Negro League World Series of 1925. Judy Johnson, Biz Mackey, and Pop Lloyd played on those championship teams.

Homestead Grays. Homestead, Pennsylvania was a steel town decidedly predisposed to the whims and wants of Andrew Carnegie. But in the migration north by African-Americans, being a steel worker with a stable income meant the world was getting better, if only one dollar at a time. Cumberland "Cum" Willis Posey, Jr. came from basketball stardom turned baseball player that found his greatest talent in ownership. The Grays went from a semi-pro, often integrated, steelworker-laden group to all-black powerhouses over the course of two decades from 1911-1930.

Posey took the reins for good in 1916 as the captain of the club, and by 1918, booked all their games. For nearly the next thirty years, between the Eastern ball clubs and Western mainstays, there were the Grays, lying in wait. Posey took on all comers, and raided his fair share talent away, but was most appreciated for paying *consistently* - in a time when ownerships were always in a

constant struggle for meeting payroll and attracting fans. Posey, acquired so much talent, that at one time or another, he had over half of the Hall of Fame players inducted from the time on his various squads (Hogan, 209).

Like Bolden, Posey used the press well. He should have; as Posey inherited *Pittsburgh Courier* newspaper stock and wrote for the paper over the course of the years. His viewpoints were often biting – usually toward the slipshod nature of various owners that argued over minor points, and avoided major problems or dismissed innovative ideas (Hogan, 212) – meanwhile, he remained independent through servicing the void between the established leagues and adroitly booking his teams for up to 150 games a year. (Most “league teams” managed, at best, 45-60 games.)

Posey’s Grays took on the members of the Philadelphia A’s in the late 1920s – with Rube Walberg and Jack Quinn amongst others – splitting the series that ran up to nine games (Hogan, 210). His outfit played at Forbes Field in the late 1920s – when even the Pirates played in October – and usually scored big profits. So much so, that independent Posey offered no-raiding propositions to the Eastern Colored League and Negro National League, only to be rejected. (He only wanted Oscar Charleston back from Harrisburg in the ECL for the deal.)

The Homestead Grays survived through the Great Depression; and Josh Gibson put on their legendary uniform – to great effect – as they jumped into league play, made for championships, and lasting memories. From 1937 to 1948 they won all but three Negro National League titles.

Pittsburgh Crawfords. The local rivalry with the Homestead Grays exploded when “Gasoline” Gus Greenlee brought his different personality and financial resources in direct conflict with Posey. While Posey was a slight man, college-educated, essentially upper-class in family and comportment, Greenlee was a hulky, street-schooled, savvy in illegal-means-to-money man, who jumpstarted a community with his brash, if-bedeveling-to-Posey, nature.

Greenlee remade black entrepreneurship into his lasting contribution – aside from bringing together all-time great teams, the 1932 and 1935 Crawfords – by putting up pool halls, a “community bank”, the Sunset Café, and the Crawford Grill, a NYC-styled *Cotton Club*. But the master of the merger & acquisitions market might be a better describer; as Greenlee merged legal (baseball) and illegal (numbers), and first acquired Satchel Paige, ex-Gray Sam Streeter, Jimmy Crutchfield, and Cy Perkins, Paige’s personal backstop, all during the 1930-31 time frame.

Posey attempted a counter, putting Ted “Double Duty” Radcliffe on post, and adding the gifted pitcher Willie Foster. In August 1931, a battle for Pittsburgh took place between these titans of the independents. After splitting the first two games, the series decider featured slugging, until Satchel Paige came in to silence a Gibson-led Gray team, while the Craws took control, and came out victorious. It was to be a short-term reversal of fortunes for Posey.

Posey felt the Great Depression; becoming a seller; while new moneyman Greenlee was to be a ferocious buyer. Cool Papa Bell, Judy Johnson, Oscar

Charleston, Josh Gibson and Double Duty were stripped away from the usually financially sound Posey. And the *Crawford Grille* opened to rave reviews as the Craws are considered *dynastic* by 1935.

Kansas City Monarchs. The following descriptions are from Larry Tye's *Satchel: The Life and Times of an American Legend*.

J. Leslie Wilkinson, a white owner, dominated the true middle frontier (and early West MLB expansion) that was embodied in the Monarchs. Born in Des Moines, "Wilkie" grew into a star pitcher throughout his formative years. He fell victim to an arm injury in 1900, and evolved his personal love, baseball, turning it into a series of successful business ideas and operations.

His first major success came in the form of the *All Nations* club – a truly cosmopolitan baseball team, of men, and a woman – that put on marching bands, dance troupes, and wrestling matches as well as mean baseball games. Their record in 1913: 119 wins and 17 losses.

When Rube Foster came to town to build the new Negro Leagues, Wilkinson was the only logical man to put in charge of the "outskirts" of the league. With his acumen proven, in an era wrought with failures, Wilkinson brought John Donaldson and Wilbur "Bullet Joe" Rogan immediately to his Monarch team. They racked up several league titles while Foster ran his league, winning the 1924 Negro League World Series. Wilkinson provided the only rebuttal to Posey's emerging Grays dynasty in the east; supplanting Foster's Chicago American Giants as the better team.

As for the locale, Kansas City by the 1930s had attractive features for both baseball and culture. A significant black population (40,000), growth in manufacturing, lax Jim Crow, great food joints, and jazz musicians of renown, all made it a place to know – and to go. Jazz was the blood flowing at night – Charlie Bird Parker, Duke Ellington and the Count (Basie) – kept alive the dreams of those who felt sucked dry by the powers that be. Baseball provided the daytime energies.

(Side Note: The Yankees put their 'minor' roots in Kansas City with Yogi Berra and Mickey Mantle doing a stint for the Kansas City Blues. And later, still thinking they owned the town, vamped off the just moved west Kansas City A's their talents – specifically, Roger Maris, and nearly every pitcher aside from Whitey Ford in the late 1950s. See: Volume II, Dynasty Section.)

Wilkinson was so successful that local black kids wanted to grow up to be Monarchs – like New York boys coveted the Yankee pinstripes – assuring that talent would always be in abundance. His success led to reintroducing Ed Barrow's failed night baseball experiment. Only with Wilkie, and better technology and maintenance, did night baseball worked during the Great Depression. He kept a "B" team – the Baby Monarchs – on board. He hired (and kept) a real trainer in Frank "Jewbaby" Floyd. Maybe most of all, the Monarchs traveled in Pullman "class", so they functioned like real men, in a time, where in

the most inhospitable environs, the best treatment was derogatory and threatening: “we don’t serve coons here.”

Wilkinson was truly self-made and singular. He did not own other businesses. He inherited no fortune. He leveraged his own assets many times to make a go of season, and came back with enough to pay off the debt. And many players, such as Newt Allen, felt he did everything an owner should, both in season and out. Making loans and arrangements for players – and getting loyalty in return was likely Wilkie’s greatest strength.

However, Wilkinson’s long-time partner, Thomas Y. Baird, the moneyman, may not have been as worthy of esteem. As Larry Tye notes, “Convincing evidence of Baird’s ties of the KKK was published in 2007 by Tim Rives, a baseball historian is the supervisory archivist at the Eisenhower Presidential Library.” How much Wilkinson suspected Baird, or consciously focused on this issue, remains unclear. It seems though that Wilkinson’s heart may have blinded him – in a not so color-blind society.

Wilkinson though was also savvy (sly enough) to capture Satchel Paige after his arm troubles began. Violating a \$5,000 deal with the Manleys, Paige gave the Baby Monarchs a boost, and took kindly to the trainer that through a rest regiment and hot-cold treatments got Satchel back to adequate, if not quite 100% of his once stellar form.

Meanwhile, Effa Manley, a firestorm if ever there was one, wrote, argued, and berated whoever listened to get her player back. Manley, like Paige, was a rare oddity herself: as she later admitted, she was not at all African-American, though she never tried to make it as “white.” Thus, making her way against racial bias because of the family she grew up in and thrived (Tye 2009, 144). As it was, Effa Manley never got Paige back to the Newark Eagles – likely one of the few teams Paige resisted everlastingly in his 40 seasons throwing gas.

The Monarchs by the early 1940s were as dominant and financially successful as any Negro League teams earning over \$200,000 in a 3-year span, and winning the Negro American League in 1937, 1939, 1940, 1942 and 1946. They defeated the Homestead Grays for 1942 World Series, their second and last Negro World Series title.

Wilkinson turned over ownership to Baird in 1948 as the Negro Leagues dismantled and black baseball ceased to be what Wilkie had spent 40 years putting on the field. His town, Kansas City, is a lasting monument to these leagues as the Negro League Hall of Fame Museum is located where Foster started it and Wilkinson drove it to success and sustainability in the first half of the 20th century.

The Changing of the Guard: Integration

In these many ways the Negro Leagues reflected the infancy of Major League Baseball – without the onerous task of building a league up under the weight of racial bias and national economic fragility. By comparison, the numerous leagues made (Player’s League, Union, American Association, and the Federal League), the fight to keep players tied to one team by owners, the

shifting franchises due to (a lack of) money, support and grounds, and the in-fighting for league supremacy by a handful of power-hungry, if well-intentioned, business owners and players alike, all are mirrored in the Negro Leagues years of professional formation and operations.

Table. Home Parks, 1944¹

Teams (NNL)	Park	Other Organized Baseball Tenant
Philadelphia Stars	Parkside Field, Shibe Park	Philadelphia Athletics, Phillies
Baltimore Elite Giants	Bugle Field	-
Homestead Grays	Forbes Field, Griffith Stadium	Pittsburgh Pirates, Washington Senators
New York Cubans	Polo Grounds	New York Giants
New York Black Yankees	Yankee Stadium	New York Yankees
Newark Eagles	Ruppert Stadium	Newark Bears (IL)

Teams (NAL)	Park	Other Organized Baseball Tenant
Chicago American Giants	Comiskey Park	Chicago White Sox
Kansas City Monarchs	Ruppert Stadium	Kansas City Blues (AA)
Birmingham Black Barons	Rickwood Field	Birmingham Barons (SA)
Memphis Red Sox	Martin Stadium	-
Cleveland Buckeyes	League Park, Municipal Stadium	Cleveland Indians
Cincinnati-Indianapolis Clowns	Victory Field, Crosley Field	Indianapolis (AA), Cincinnati Reds

1. Tables are from *Negro League Baseball (2004)* by Neil Lanctot, page 150

Later, the integration of baseball introduced a whole new, unsolvable problem from the Negro Leagues' standpoint: obsolescence. The incorporation of blacks meant doors opened in one league, that had always been closed (at least since the 1880s) and the slow closure of a 'League of Their Own.' Players of great caliber immediately sought the rewards, and reaped the benefits they so longed for in playing in front of tens of thousands consistently, even if the transition was far from smooth, and filled with dislike and hatred both on and off-the-field by whites resistant to any changes.

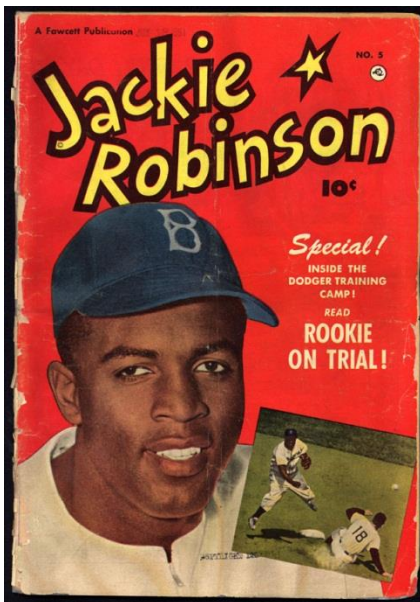
Side Note: Even the inclusion of a white ballplayer on a Negro League team (Edward Joseph Klep, left hand pitcher, Cleveland Buckeyes, 1946) drew its fair share of hostility. Baseball historian and SABR member Larry Gerlach quoted a May 1946 NAACP's *Crisis* article, "a white person who ignores the color line and joins with Negroes in their ordinary activities of daily living will also encounter Jim Crow.' But he likely did not realize that such a person would encounter racism, prejudice, and exclusion from blacks as well as whites." (L. Gerlach 1998, 459)

From Klep's first game in March 1946, he encountered severe harassment from white law officials and fans, being forced to change out of his uniform, while also getting ostracized from traditional Negro lodging places in the Birmingham area (L. Gerlach 1998, 460). These events point to the great divide firmly entrenched in the antebellum South that were glossed over for many years by the mainstream white press. Klep's career was limited to northern games and

ended abruptly mid-season. Unfortunately, Klep was no do-gooder or white knight; as he spent his life in and out of prison and without a job most times (L. Gerlach 1998, 469).

Writing in 1950, famous baseball historian Lee Allen, though well-meaning, writes this two-part passage about the more important side of this same coin, Jackie Robinson's plight in the majors: "When the Dodgers then lost a seven-game world series to the Yankees, Robinson, the first of his race to appear in the fall festival, held up his end for the losing cause (Allen 1950, 288)." Though an even compliment, Allen goes further by adding this assessment:

"It should not be thought at all who opposed his entrance into major league baseball were motivated by bigotry. Many sincere players and fans took the position that baseball had such a unique code of ethics that it did not furnish the proper laboratory for a sociological experiment. Players representing other minorities had to bear up under the most outrageous slurs. But their followers never attended games in a bloc; Jackie's did. The dynamite inherent in the situation was not on the playing field but in the stands. The Negro press urged its readers to welcome Robinson calmly...And for a year Negroes kept their enthusiasm for the trail-blazer within bounds. But after he attained stardom, they found it difficult to restrain their exuberance..." (Allen 1950, 288-289)



In the pre-Civil Rights era, Allen mentioning of what fans of Jackie Robinson were supposed to do and the proper environ of a sociological experiment only reinforced the difficulties of the abhorrent policy of 'Separate and Equal' as it stood in 1950. Add to that, the motivations of people not being about bigotry, this comes out as a very blind statement.

Allen was neither strong nor weak (in this statement) in assessing the backdrop on which this drama was unfolding. By couching his statements in what the African-Americans should be expected to accomplish as fans (and players), Allen ignored that Caucasians' actions were far from where they needed to be.

Yet to be fair, his was not the only voice speaking in such couched terms. Many white sportswriters and broadcasters, such as Grantland Rice and Red Barber, were not keen, or outspoken in support of Jackie. (Barber did evolve; Rice died in the early 1950s, and did not seem to voice any better opinions before his death. Rice is discussed in further detail in Volume II: Sportswriters.)

Jackie Robinson seen on a cover (*Courtesy of the Library of Congress*).

The minor league system too was wrought with problems during integration as James Edward Miller wrote:

"After 1947 a number of very talented but older players from the Negro Leagues joined minor league clubs – Luke Easter, Piper Davis, Ray Dandridge, Dan Bankhead and Sam Jethroe, among them. From the viewpoint of the major league clubs, farm teams that utilized a large number of veterans players, particularly aging Negro league stars or former major leaguers, were frustrating the objective of a minor league system: developing new talent...the majors imposed rules that severely limited the number of veteran players at all levels of the minor leagues." (The Baseball Business: Pursuing Pennants & Profits in Baltimore 1990, 10)

The firmly segregated South was even more limited as these players sought places to eat, stay, or gather. No African-American player in the locales of Mississippi, Alabama, Florida, or the Carolinas was particularly safe from ridicules, intolerance, and often, criminal deeds.

But for these baseball pioneers these social hardships were balanced against the fading ball-playing reality of the Negro Leagues: permanently smaller crowds, continued helter-skelter travel, cancellations of games, and assured financial uncertainty while knowing the barrier to a truer recognition was simply just a matter of their race. The selling of their skills to a newly opened market was the much better option.

Baseball historian and statistical expert Bill James summed up the Negro Leagues operating dynamics and overall impact this way:

"...it is remarkable that they were able to accomplish what they did. They developed outstanding players; they set up a league which was immensely successful at identifying the best black athletes in the country. They organized All-Star games that drew large crowds [50,000 or more], and were major league operations in every sense of the word. They sustained themselves economically by traveling from Puerto Rico to Canada, promoting relentlessly an endless series of games in an endless series of small towns. They set the stage for Jackie Robinson. By the time integration arrived, baseball was more ready for it than almost any other segment of American society." (The New Bill James Historical Baseball Abstract: The Classic – Completely Revised, 170)

As one immortal opined: "...My grandfather wasn't a bitter man. He was an optimist. He thought black people could achieve any dream if they worked hard enough for it. He also thought there was enough good in any white man to overcome racism. I found out later on he was right about that, although I guess you'd have to say that as a society we've still got a ways to go. (O'Neil, et al. 1996, 18)." Buck O'Neil spoke volumes about the reality of life in just that one

passage. His ambassadorship to the game is more important than all the balls he hit, fielded and threw during a HOF-like career.

Within twenty-seven years of Jackie Robinson's first season, the most treasured record of all-time, Babe Ruth's home run mark, fell to Henry Aaron off Al Downing. Both were black ballplayers – and lived through the worst of what was America's unfortunate struggle to change from a simple-minded and flawed 'Separate but Equal' doctrine to what is the 'Equality for All' ideal, yet to be fully realized.

The fact, that in a mere thirty years, the once "not hued correctly" African-American players, were now rewriting the record books across the board shows how much we, as lovers of the game, lost. Not due to any faults in the players, owners, developers, or media men of the Negro Leagues, but to the many failures of many, many Caucasian men. Some esteemed enough to know it was utterly wrong, and others, too racist, stubborn (and powerful) to change such policies born solely out of contemptuous feelings left over from the Civil War, and passed down for generations.

That said, baseball moved ahead on many fronts during the Civil Rights Era that swept the land in the 1950s and 1960s. And for that, it reflected an awareness instilled by the game; impacted the growth of America's conflicted conscience from the Civil War through, and past, the Vietnam War.

The Negro Leagues existence and dissolution did provide the appropriate social framework, the platform, the energy, and the motivation to move towards equality for all ballplayers. Without the early, sustained efforts of White or Foster, or later, Posse and Pompey, Jackie Robinson, Larry Doby, Willie Mays and countless others would have lost opportunities. Moreover, America's social and political course post-WWII goes on a much different path.

And that would have been a tragedy. Not right on time.

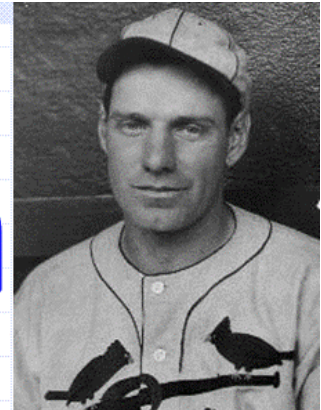


Ted "Double Duty" Radcliffe so named for his superior ability to pitch in a pinch, and catch on the same day. (From *Wikipedia.com*)

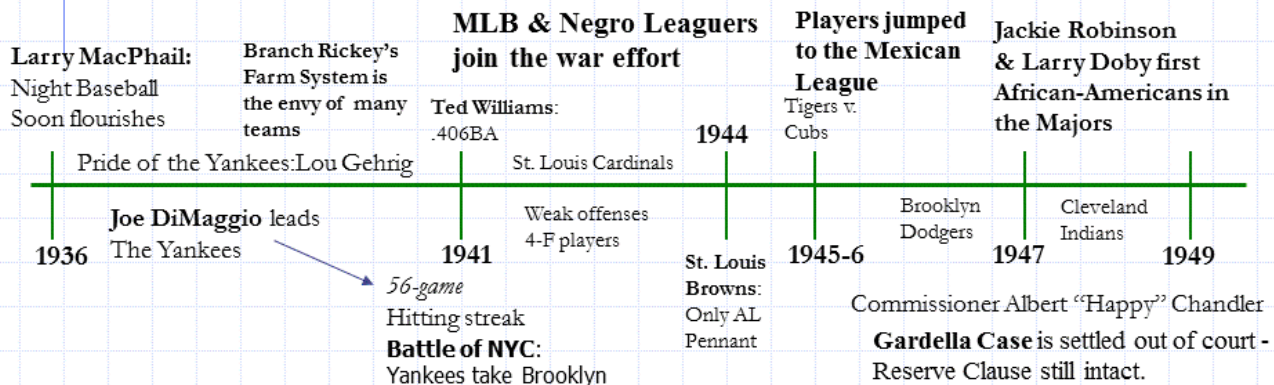
Chapter 3: FDR ERA (1936-1949)

- ◆ Integration of Baseball
- ◆ Explosive growth attendance post-war
- ◆ Gardella case
- ◆ Old stadiums
- ◆ Rickey Veeck & Yankees most influential
- ◆ Television: the new medium

FDR ERA: Integration & War



Leo Durocher



Best MLB Players: Joe DiMaggio, Ted Williams, Jimmy Foxx, Johnny Mize, Arky Vaughan, Lou Boudreau, Luke Appling, Stan Musial, Mel Ott, Bobby Doerr, Bob Feller, Hal Newhouser, Bob Newsom, Virgil Trucks, Dutch Leonard, Dizzy Trout

Terrance Mann: The one constant through all the years Ray has been baseball... Oh, people will come, Ray. People will most definitely come.

- Actor James Earl Jones from the movie *Field of Dreams*



When one thinks of Franklin Delano Roosevelt, the Great Depression, social programs, fireside chats, and WW II ultimately come to mind. A night in 1936 could be filled with an address by the president, a Reds ballgame, and a host of variety shows and commercials; simplicity had via the radio dial. Baseball underwent significant changes in its dissemination (radio broadcasts, the medium

adeptly used by FDR) during the 1930s, both becoming essential parts of the coping mechanism of many Americans dealing with the ravages of Depression-era poverty, and then later, the boots and bombs of World War II. (Pictured: *The Golden Gate Bridge in San Francisco*. When constructed, it was the largest suspension bridge in the world. The project began at the height of the Depression and was finished by the start of FDR's 2nd administration. Photographed by Rich Niewiroski, Jr.)

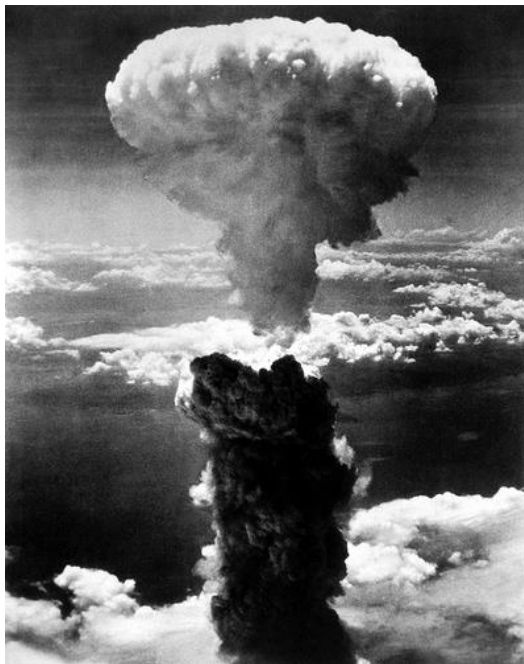
Essentially, 1936 represented a landmark in MLB History: Babe Ruth retired from baseball in 1935 and Joe DiMaggio began a career in 1936 for the now, ever-dominant Yankees. On May 24, 1935 (Erardi and Rhodes, *Cincinnati's Crosley Field: The Illustrated History of a Classic Ballpark*, 78), big league night baseball was introduced to fans in Cincinnati under the leadership of Larry MacPhail. He later was a key promoter of the first televised major league game in 1939 displayed at the new Rockefeller Center (Lanctot 2004, 261). (As noted, night games were played in the minors and Negro Leagues through portable lighting systems dating back to the turn of the century. Most experiments were marginally successful, but turned also into a logistical nightmare.)

The *New Deal* programs kept stirring the U.S. economy, as many men went west to find work, and completed projects, like the *Hoover Dam* in 1936. (Temporarily named the *Boulder Canyon Dam* until 1947.) Some of these public works/public funding projects started out under Hoover's administration like the *RFC* (Reconstruction Finance Corporation). Under Roosevelt's watch, these programs gained greater traction, and through his stirring voice, appealed to a nation. It won him four elections; built the modern industrial juggernaut with war.

Hollywood “spoke” in the late 1920s and grew as an entertainment escape from the harsh economic times. Throughout this generation, filming increased in size and scope while telling the story of America in movies, and played a visible part in the war efforts. Many great movies, such as *Gone with the Wind* (1939) and *Casablanca* (1942) are legendary for their backdrops of war versus humanity’s fundamental desires for love and support during nation-altering tragedies. Clark Gable, who played Rhett Butler, did his aptly titled career-ending film, *The Misfits* (1961), with Marilyn Monroe, who was appearing in her last film. (**Vol II:** Joe DiMaggio Bio.) *Casablanca* was written by Philip and Julius Epstein (Shaughnessy 2005, 51) – the grandfather (and great uncle) of Theo Epstein, the successful GM of the Boston Red Sox, and now, president of the Chicago Cubs.

Music had William “Count” Basie, Duke Ellington, Glenn Miller, Benny Goodman, and Tommy Dorsey to swing the mood to. Again, the sounds of music reflected a telling slice of Americana to which soldiers and civilians alike defined this period by in their reflections backward. It was a *Sentimental Journey* that our nation listened to in their prolonged trek to seek a war’s end.

Science was on display as television crackled to life at the 1939 New York World’s Fair. *NBC* announced a broadcast schedule of 2 hours per week; by 1940, 23 stations existed around the country (*The Encyclopædia Britannica*, 2005).



More importantly, to freedom efforts, through the exalted minds of Julius Robert Oppenheimer, Albert Einstein, and Leo Szilard, the United States harnessed the power of the atom, and, eventually used that power to cease hostilities in the Pacific Theatre of WWII.

Within that scientific breakthrough, the Nuclear Age fell upon humanity via the bomb bay doors of the *Enola Gay*. The mutually assured destruction of opposing nations deterred future usage, while keeping nukes stored in silos. Meanwhile, the promoting of peaceful (if toxic and catastrophically unstable) usage of nuclear power spanned the globe.

The A-bomb led to a defining term in sports: ‘the nuclear option’ is used to discuss the destruction of a roster in sports franchise. (Left: The mushroom cloud that changed the world, as the Cold War began shortly, thereafter. *National Archives*)

The nation turned slowly away from extremist policies and groups, only to create other entities and fears to replace them. The *KKK*, born out of the Civil war, grew into a powerful political group in numerous states until the 1920s, then, it too, undermined itself. But their overt racism survived. The Mob (Al Capone, among others) continued to exist, but power waned and the free passes given during Prohibition’s height disappeared. The Communist Party existence

created a politically exploitable source of fear, enforced by post-WWII dealings, and world divisions that formed out of the U.S. versus U.S.S.R proxy wars. With the dawn of a nuclear age, science fiction (and fact) enliven into conspiracy theories about global plots and external enemies as far off as other planets. The American people had their boogey men, real or concocted, around every corner as FBI director J. Edgar Hoover created dense files to support his own obsessive, secrets, and often, contradictory conclusions.

But the most vivid and telling daily was racism. So strongly entrenched "the peculiar institution" was that the country accepted separation as being equal. With effects on all corners of life, the reexaminations stirred overt and snide efforts alike. Black *Gone with the Wind* stars, Hattie McDaniel among them, were barred from the premiere of the film in Atlanta, Georgia. Contralto Marion Anderson felt the same discrimination from the Daughters of the American Revolution who refused her the stage at Constitution Hall. Later, Anderson performed at the Lincoln Memorial with FDR's invitation; 75,000 attended.

While accustomed to rejection on various levels and in various disguises – especially in the Deep South – nothing might have raised the question of the discriminatory practices more than comments made by Jake Powell in a 1938 WGN interview before a Yankee-White Sox game. When interviewer Bob Elson asked Powell innocuously about his off-season workout sessions, Powell responded with: "Oh, that's easy. I'm a policeman and I beat niggers over the head with my blackjack while on my beat (Levitt 2008, 312)." Powell found karma has its own way of handling things: Less than a year after Jackie broke into the majors, Powell committed suicide while under arrest for kiting checks.

Yet against those prevalent actions and circumstances, Joe Louis was the undisputed heavyweight champion, dismantling German Max Schmeling in a one-round rematch, and remained undefeated in title defenses until retiring 1949. Jesse Owens undid Hitler's Aryan supremacy doctrine right before his mustachioed face during the 1936 Berlin Olympics. Bandleader Benny Goodman refused to play in a New York club without his entire band with Teddy Wilson and Lionel Hampton being the 'offending' minstrels (Lester, 498: Var. Chapters.). FDR appointed several black leaders in education, economics, political science, and legal issues as his cabinet-level advisors (Lester 2001, 21).

In similar vein, white sportswriter Jimmy Powers (Lester 2001, 110) of the *New York Daily News* took an unpopular stance on this issue of racial prejudice. Commissioner Landis was compared to Hitler by black sportswriter Wendell Smith of the *Pittsburgh Courier* in December 1938. Smith was the most outspoken sportswriter in his biting critiques; and yet, Smith was tapping (pounding) into the realistic and understandable reasons to integrate all sports and society fully. Removing Jim Crow was fully another generation off; and those that tested 'norms' came through passive resistance movements and epic speeches. But, in 1940, such change was glacial.

War ended, after many African-Americans served honorably in the armed forces, but still, without equality. This gave new President Truman, a border state native, the opportunity to acknowledge how wrong any discriminatory practices

were in a February 1948 message before Congress. He ordered thereafter the full integration of the U.S. military. The glacier slowly began to melt.

As one backlash result, the *Dixiecrat Party* formed, led by Strom Thurmond in 1948. By most accounts, Truman held on luckily against a strong Republican challenge in Thomas Dewey. And programs to assist African-Americans were not turned aside going into the 1950s in Truman's second term.

African-Americans were not the only ones facing stigmas. Prevalent stereotypes of the day hung around: Italian-Americans as lazy thugs and mobsters; German-Americans as stubborn, nationalistic, but hardworking; French as snooty and suave; Polish as dumb and dimwitted workhorses; Irish as drunks and pugilists at the drop of a hat; and, Jews as thrifty nickel-chasers, and far, far worse. If one was differentiated by a particular locale, it was noted and labeled.

In *Yogi Berra: Eternal Yankee*, Allen Barra shows how esteemed NYC writers looked at a twenty-year old rookie, fresh from D-Day and Omaha Beach. They caricatured the man as an unsophisticated, uncoordinated, ugly, dim, and dizzy, clownish man. Lawrence "Yogi" Berra was not dumb; he was undereducated, finishing only the 8th grade, but street-smart, and a survivor of whatever people threw his way, which was every "Dago" or "WOP" slur that was uttered in the era. Yet he showed in the batter's box, "who's smart now." But even Yogi's own ethnic enclaves engrained these stereotypes in their speech.

As an Italian neighbor remarked to Joe Garagiola, Yogi's hometown friend and fellow ballplayer, enforced: "you the firsta boy what comes from the Hill with a name [that] ends a, e, i, o getta name in the paper and no killa somebody (Barra, *Yogi Berra: The Eternal Yankee* 2009, 7)." For Yogi, killing was done with 'bat on ball' ballpark violence, minus the 'wife beater.' (Undershirt worn by many that was often symbolic in various period films.) But no one ever mistakes *Yogiisms* for a Phi Beta Kappa musings – or maybe, they are, you can never really know. ("When you come to a fork in the road, take it (Barra 2009, 397).")

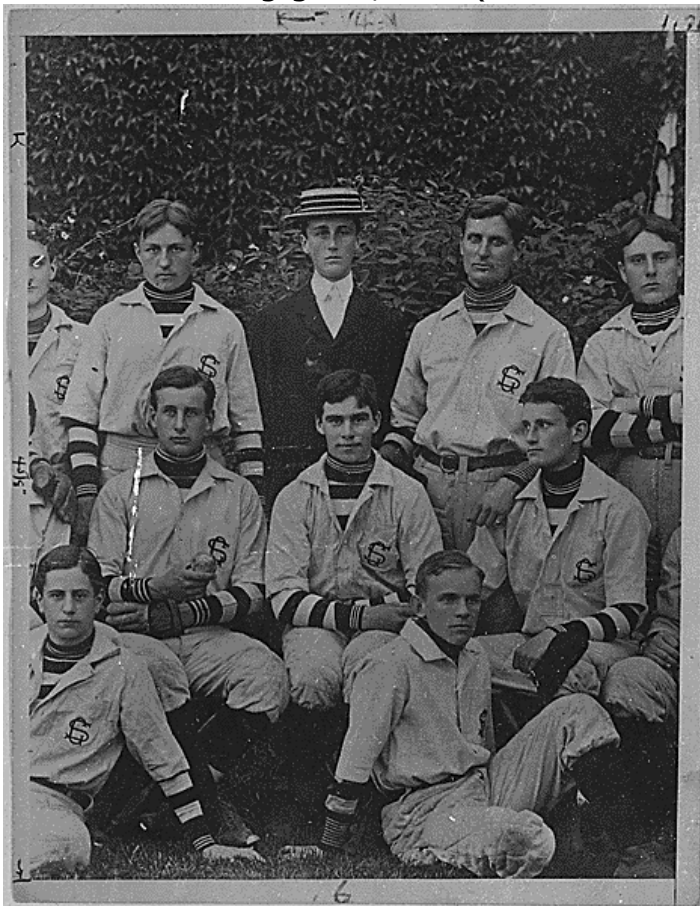
The melting pot of America has never been without the conflict of new immigrants taking grief from once-to-twice-removed-from-the-boat Ellis Island visitors. Yet, through these conflicts came the most economically productive nation in the world. On top of that, as the medium of radio and TV offered vivid glimpses into the mindsets of people, it too became a powerful channeling of positive and negative portrayals of minorities of all stripes.

As noted, fears were exploited. FBI director J. Edgar Hoover overtly stood up as a "white hat" to public enemy #1 for nearly four decades. Appointed by Roosevelt in 1935 as the director of the FBI, his office kept voluminous tabs on homeland misdoings, creating files over 10,000 pages long. Initially, his greatest public takedowns involved gangsters Dillinger and Machine Gun Kelly, even when he was nowhere on scene, he still took the credit. As power grew, Hoover crossed lines thereafter: withholding information in his files; personal investigations collected on the highest officials in American history, friend and foe alike. His dealings are conspiracies and riddles flying amongst ghosts never completely understood.

Hoover's phantom friends were former mob bosses and underlings in Prohibition-era gangster outfits. As they moved west to escape and set up shop in Las Vegas, thus 'holing up in Vegas', it meant immorality and sinful excesses were tacitly allowed. Far from east coast federal bureaucracies, conveniently, and away from Hoover's focus and for-a-purpose arrests.

Like Hoover, secretive billionaire Howard Hughes kept close tabs on his dalliances. Later, Howard holed up in Las Vegas's *Desert Inn* and the *Sands Hotel*, buying out mobster-owned spots. Hughes big-footed himself into Hollywood movie-making; was a test-pilot; built his fortune off family inheritance, tooling, and aviation, with excesses and corruption always suspected. A U.S. senate hearing, post-World War II, centered on the *Spruce Goose* airplane contract made. Hughes won the media battle and proceeded onward to amass his fortune.

Hughes was an enigma no one could figure out, or corner completely. And thus, Hughes' avoidance of congressional contempt flew well during the ebb of the FDR era. Nearly thirty years later, Howard's end came as the richest and most secluded man in America that ever attempted to buy a MLB baseball team, and broadcasting giant, ABC (Drosnin 1985, 144 -152). (**See: Vol II, LBJ Era.**)



The left-leaning *Hollywood Ten* were not as lucky as Hughes. In part, testimony offered by president of the Screen Actors Guild Ronald Reagan at the House Un-American Activities Committee (HUAC), fueled the contempt order issued by Congress against ten writers, directors, a producer, including writer Ring Lardner, Jr., the son of famous Chicago sports scribe and humorist. The growth of post-WWII suspicions of any communist sympathizers, in fact, or long ago acquaintance, had political purposes, first and foremost, with a test of patriotic foundations just a secondary matter. In 1950, the Hollywood Ten took on Joe McCarthy, the firebrand Senator, who only four years prior, had been an unknown politician. (**Pictured left:** Franklin Delano Roosevelt served as Harvard's baseball

equipment manager at the turn of the 20th century. From ball fields to war theatres, FDR defined this time, as important firsts took place while he governed and America became the first rate world power.)

Internationally, during the final stages of WWII, at the *Battle of The Bulge*, German soldiers dressed out as American GIs to confuse and leverage the battle in their favor. (Without success as this was the last German counteroffensive.) Our boys' best tactic was to question these faux-GIs about baseball: "How did Dem Bums do this season? Who is Joltin' Joe?" Meanwhile, in the Pacific Theatre, the conflict was more about insults, than ruses. American GIs: "Fuck Hirohito!" Jap Soldiers: "Screw Babe Ruth!" More than 4,300 professional ballplayers went to war – more than 100 lost their lives – many others never returned to ball fields, scarred permanently by the price of war.

Just before the A-bomb dropped, British Prime Minister Winston S. Churchill lost election to Clement R. Attlee in July 1945, during the *Potsdam Conference*, the post-war administration of Germany talks. The discussion did not achieve lasting cooperation; as before too long the United States engaged in the largest aid effort in human history (the *Berlin Airlift*). Truman attempted to halt the advance of *Iron Curtain* as Josef Stalin forced his own plan as to who was the true power in Europe, and beyond. (The ever-prescient Churchill presaged the Iron Curtain's erection during a 1946 Fulton, Missouri speech.)

The *Nuremberg Trials* began shortly after World War II. The Holocaust, evident and appalling, forced humanity to address punishments for these cruelest of souls. To further address these failures of humankind, the United Nations was brought to life in San Francisco in 1945; funded by John D. Rockefeller, Jr. to the tune of \$8.5 million for the land in New York City. The United Nations established a Universal Declaration of Human Rights. In the same breath, Israel, the new Jewish state, was established in 1948 at the United States' design and insistence. And the Middle East has never been quiet since – as war and conflict never completely ends. (**Note:** George H.W. Bush headed up the UN delegation in the early 1970s. At this juncture, the future President Bush captained the Yale baseball team. He soon personally received Babe Ruth's letters and correspondence.)

The British Empire crumbled, first in India; France lost in Southeast Asia; and the 3rd world grew in importance as a proxy battles consumed U.S. foreign policy energies. NATO formed in 1949 to head off any further aggression by the U.S.S.R, yet, only a year later, the Russians tested their first nuclear bomb. The Korean War started in June 1950. And so, baseball players went back to their war positions: a young Willie Mays, Whitey Ford, Jerry Coleman, and Ted Williams, put on uniforms of battle where life is the daily victorious outcome.

By then, major league baseball was robust, in health, as the soldiers returned from theatres of war, the wives and girlfriends rewarded their brave fellows. The entire country desired a move forward. Aware now of the challenges of safeguarding the world as the sole nation left least scarred by the ravages of war. The "ball games" were only a respite from the hard tasks of rebuilding a world, and the challenges ahead for only a 175-year old nation. It was a great moment to be alive: the future seemed bright and the world was watching its new leader take its first steps.

The General Makeup of MLB Baseball in 1936

- ❑ 2 Professional Leagues – 8 teams apiece, located in the NE and Midwestern parts of the U.S.
- ❑ Still dominate LH hitters (especially in the lefty-friendly Yankee Stadium with its 294' RF line and low wall)
- ❑ League BA (Batting Average) was close to .290 in both leagues in 1936
- ❑ Making contact was valued highly over 'just swinging for the fences', though hitters like Lou Gehrig and Joe DiMaggio did both extremely well

The Ballparks

- ❑ Cavernous CF (430'+), quirky, high-walled LF and/or RF fences in numerous stadiums, but with friendly distances elsewhere (under 300' down both lines).
- ❑ The Polo Grounds, Ebbets Field, League Park, Shibe Park, Crosley Field, Briggs Stadium (Tiger Stadium), Yankee Stadium, Fenway Park, Comiskey Park, and Wrigley Field were among the 16 MLB Parks in primary use.
- ❑ Power alleys were typically greater than (390') which contributed to doubles and triples being the most typical extra base hit in many of the parks of the day.

The Players and Pay

The most influential event of this era was the outbreak of WWII. Between 1942 and 1946, many of the stars, mainstays, and bench guys took part in the fight. Leaving behind the oldest and youngest, players not qualified (4F) for military service in a direct manner. Many lost their prime years to this, and the remaining players, did not hit as well as in the previous five years by a statistically significant difference. (In Bill James' Abstract, it was noted the baseballs were of an *inferior quality* due to the rubber need for war products. This quirk appeared between 1942 and 1943 with the Dodgers receiving the replacement balls sooner than every other team (James 2001, 197).

Even at this point, while some players received healthy enough salaries (and bonuses, usually the World Series share was the big payday for the Yankees' role players), the vast majority worked in off-season jobs to make adequate (to comfortable) livings. The 'reserve' clause all but assured exclusive ownership rights to a player indefinitely unless he retired, was traded, or released (Reichler 1988, 22). Players' rights were only to compensation via one-year contracts set by frugal, and often, tyrannical owners.

David Halberstam in *October 1964* reflects the typical owner viewpoint toward players' salaries:

"...Sam Breadon, had come to baseball after owning an auto dealership in St. Louis, during the years when Branch Rickey was the general manager. Breadon was, if anything, cheaper than Rickey, a legendary skinflint: in 1942, when the young Musial had come in third in the National League batting race in his first big league season, Breadon

offered him the magnificent raise of \$1,000 for his good work...There was a ceiling on what a Cardinal player could make in those days, and it was \$13,500. Only Marty Marion, as good a salesman as he was a shortstop, it was said, had been able to breach the 13.5 ceiling; he received \$15,000...in 1944 [after winning the MVP.] Generally, when a player reached \$13,500, it was good as buying a train ticket out of St. Louis. At one point, anger by the demands of the Cooper brothers for salaries as large as Marion's, Breadon essentially sold them off, getting \$60,000 plus another player for Mort in 1945 from the Boston Braves, and, a few months later, selling Walker Cooper to the Giants for \$175,000, then a record price." (Halberstam, October 1964 1994, 19-20)

Breadon wasn't alone on frugality. Connie Mack, in 1932, showed his parsimonious spirit. He once left reliever Ed Rommel in for 17 innings, who gave up 29 hits and 9 walks in an 18-17, 18-inning affair. Why was that?

As legendary *New York Times* sportswriter Leonard Koppett wrote, "Well the Sunday game was in Cleveland because Pennsylvania still prohibited Sunday baseball (until 1934). The teams played in Philadelphia on Saturday, took an overnight train to Cleveland, played Sunday, took a train back, and played a doubleheader in Philadelphia on Monday. Connie...took only 15 players to Cleveland - to save train fare. Only two were pitchers (Koppett, Koppett's Concise History of Major League Baseball 2004, 183)."

Again, many of the best players in baseball did not infuse their talent into the Major Leagues. Racial segregation policies continued, in part, due to the still powerful baseball commissioner in Landis. In *Baseball: An Illustrated History*, Landis was quoted concerning the Pittsburgh Pirates interest in Josh Gibson, "The colored ballplayers have their own league. Let them stay in their own league (Burns and Ward 1994, 283)." Landis's death in 1944 created the opening for owners/GMs like Branch Rickey to achieve a new reality and make money too: star African-American ballplayers in the National and American Leagues.

Andrew Zimbalist writes about Landis, *In the Best Interests of Baseball?*, quoting Leonard Koppett: "His rulings from the bench were regularly overturned by higher courts and oscillated wildly from excessively harsh to unaccountably lenient...His view of the world was shallow, bigoted, and ill informed...He could be devious and vengeful (A. S. Zimbalist 2006, 42)."

With Landis's death in 1944, the game shifted significantly under Happy Chandler's commissionership. And while no intentional boat rocker, the most defining moves since the American League formation took place with Chandler at the helm: as the color line disappeared; franchises moved; and television grew from a baby to an exuberant and clumsy youth. Baseball was indeed a business: and it needed stars to shine brightly to put fans in the home parks.

Hitting Stars

Johnny Mize, Ralf Kiner, Lou Boudreau, Jackie Robinson, Joe DiMaggio, Ted Williams, Mel Ott, Jimmie Foxx, Bobby Doerr, Rudy York, Enos Slaughter, Stan Musial, Bob Johnson, Hank Greenberg, Dolph Camilli, Ernie Lombardi, Bill Nicholson, Joe Gordon, and Vern Stephens, amongst many others.

Pitching Stars

Bob Feller, Red Ruffing, Claude Passeau, Paul Derringer, Johnny Vander Meer, Hal Newhouser, Mort Cooper, Mel Harder, and Dizzy Trout, among others.

New Ownerships

When beer magnate Gussie Busch took over the franchise in St. Louis in 1953 from tax invasion felon Fred Saigh (1948-1952), Busch encountered plenty of resistance in trying to buy up players – as both the Dodgers and Cubs rejected overtures for top players, Gil Hodges and Ernie Banks. His then GM, Frank “Trader” Lane, commented after a failed deal: “Mr. Busch, I was politely reminded that Mr. Wrigley needs half a million just about as much as you do (Halberstam, October 1964, 22).” The price offered for Ernie Banks. Phil K. Wrigley was Busch’s longtime equal: a 2nd gen gum tycoon, with only a very marginal interest in winning championships. Lane though got other opportunities to trade; jettisoning players aplenty, as Cleveland soon discovered.

Busch’s personality was explosive, revolved around silver bullets (very dry martinis), and usually came with a limited understanding of the game. He did not understand when a player’s age was inaccurate, older than reported, and then expected the return of \$20,000 on the purchase (Halberstam, October 1964, 19). In one foretelling instance, he wanted to call his stadium *Budweiser Park* – in the same future vein as *Coors Field* – but the advertising arm of the company considered that an ill-advised decision (Halberstam, 23) and other owners likely balked at such brazen promotion of alcohol. So Gussie named it after himself, creating Busch Bavarian (1955) to the chagrin of owners and the marketers.

These new ownerships were usually defined as sportsmen – but were usually ignorant of the makings a good baseball team. They were abundantly aware of financial dealings – and looked at the less financially well off owners as being opportune for fleecing. But those ownerships/presidents, that had *actually played* the game, and ran operations, like a Branch Rickey (Cardinals and Dodgers), Clark Griffith (Senators) and Connie Mack (A’s), made it work with their shoestring budgets and trades that made their richer, sportsmen counterparts sometimes furious in their vain attempts to topple the Yankees. A decade passed before the impatient Gussie Busch tasted the champagne of victory for the first of three times: 1964, 1967, and 1982. His predecessor, Sam Breadon, won six World Series during his ownership (1920-1947) while advised by his right-hand man: Branch Rickey.

Halberstam reflected on Branch Rickey’s personality and baseball operating style:

"He was a Victorian man, born in and shaped by another century, much given to bloated rhetoric, at once shrewd and pious, honorable and duplicitous, quick to cover his base moves with high-minded speeches (and, on occasion, his more high-minded moves with primitive explanations.) He had promised his mother that he would never play on Sunday and he kept that promise even as an executive...[Was] he the most religious man of his era in baseball or simply the greatest con man[?]?... 'The Mahatma,' the sportswriter Tom Meany called him, a nickname that stuck...It was the name given the Indian leader by his people, meaning 'the great one.' After all, John Gunther, the great journalist of the era, had described Gandhi as 'combination of God, your father, and Tammany Hall.'...the basic rules for negotiating with Rickey: 'Don't drink the night before, keep your mouth shut, and your hands in your pockets.'

'El cheapo,' Jimmy Powers, the sports columnist called him, for his Calvinist view of society clearly forbade paying too much to a player: too much money might corrupt a player...the classic Rickey move with a gifted player was to wait until he reached the apex of his career and his salary was [at the apex, then] trade him for a younger, less expensive but equally talented player...[In signing Robinson] he had not deigned to pay the Kansas City Monarchs anything for Robinson's contract...[Rickey described the Negro Leagues as a,] 'booking agent's paradise.' " (Halberstam, 32-33)

Rickey's effect was so profound that by the late 1940s upwards of 37% of the talent in the Major Leagues grew up in the farm systems he had worked hard to build so cheaply (Halberstam, October 1964, 31).

Dan Topping, and later, Del Webb, teamed up to run the New York Yankees in the 1946; and with plenty of money, motivation to win, and ruthless and racist (Halberstam, 54) tactics, won more World Series (9) than any other ownership group in baseball history. Prior to that, Ed Barrow (1920-53) and then Leland S. MacPhail (1945-1947) ran Yankee operations with typical efficiency, being instrumental in the changing of the guard from Babe Ruth's final days of glory to DiMaggio's dynastic run.

Key to the Yankees was George Weiss (1932-1961). He started as a crack promoter in WWI, then as a minor league owner in the pre-Great Depression, before moving into New York circles as their farm system director. He general managed during the 1950s Yankees dynasty, recruited Rickey's topnotch scout, Tom Greenwade to keep the baseball machine oiled. Greenwade was uniquely and expertly plugged into the vast expanse of territory from Arkansas to the West Coast, signing Mickey Mantle for the Yankees. However, Halberstam reflects that Weiss followed ownership's wishes with aplomb:

"It was Greenwade who signed Mantle...but it was less well known that he also had done vital day-to-day scouting of Jackie Robinson...Because of that, Greenwade knew as much or more about the available black talent as any white scout in the country, but Weiss was not interested. 'Now Tom, I don't want you sneaking around down any back alleys and signing any niggers. We don't want them.'...Greenwade thought

it bizarre. He was being tipped on such great young prospects as Ernie Banks, but was unable to because of his marching orders. The Yankees...lost an important decade by not going after black talent...Ironically, Mantle's greatness increased the arrogance of the front office, for his exceptional speed and power convinced the Yankees that they did not need to change." (Halberstam, October 1964, 54-55)

Even after Robinson's feats were amply shown, the pride and conceit of the Yankees was greater in the front office than any fan really knew. It wasn't until catcher Elston Howard came in 1955 that the Yankees finally broke the colored barrier. 'Ellie' Howard would catch over 1,000 games for the Yankees – finishing with a lifetime .274 BA and a .427 slugging %. During the *IKE Era*, Howard's offensive numbers were comparable to Smokey Burgess and Stan Lopata. Defensively, he amassed a sparkling .993 fielding percentage, far better than all but Sherm Lollar – and still is amongst the highest ever for catchers in any era.



From one George to another: George Herman 'Babe' Ruth hands to Yale 1st Baseman, George Herbert Walker Bush, various papers for posterity. Little did the former U.S. Navy pilot then know that he too was destined for a long and illustrious career that shaped and defined America's history. (Courtesy of the George Bush Presidential Library.)

The Fans Digs and Delight

As late as May 1944, segregation (in seating) at ballparks still remained. Sportsman's Park was the last to abolish this demeaning policy (Gershman 1993, 125). The root of racism likely deprived the St. Louis Cardinals fans of five-decade player Minnie Minoso, who, in 1946, tried out and handcuffed the 1st baseman with rocket throws made from third. The Cardinals were cool; and never called him back (Halberstam, October 1964, 57).

After World War II, the great surge in fans saved and soothed many owners. Tidy sums flowed back to their pockets; and the fans saw pennant races rarely seen before, or since. The Boston Red Sox, Cleveland Indians and the Yankees participated in two seasons of bitter contests – 1948 and 1949 – with Indians and the Yankees taking the World Series both years. With the 1949

National League season, a changing of the guard solidified. The reign of the Cardinals ended; the Brooklyn Dodgers took permanence. Their fans delighted, treated with drama and delight for decade, only to see Dem Bums depart for LA.

3.1. Dynasty in Dire Times: *Meet Me in St. Louis, the '44 Series*

By 1944, the best baseball boys were gone to the battles of the war. FDR allowed the less-than-ideal warriors to stay behind to provide entertainment. As a byproduct, a team virtually buried in the AL cellar for forty years rose to the occasion and participated in their lone World Series: the St. Louis Browns.

In *The Boys Who Were Left Behind*, authors John Heidenry and Brett Topel discussed this ragtag bunch from the American League, who ended the Yankee dominance (for a spell), and gave their personal bests for their new, reluctant manager Luke Sewell. Sewell's team roster filled with alcoholic brawlers, medical misfits, married ex-seminaries, and quirky talents found best at the circuses of P.T. Barnum.

Part-time catcher Frank Mancuso had a spinal injury that turned pop-ups into pass outs. Outfielder Milt "Skippy" Byrnes was a "good-hit, no field" misidentified as a "good-field, no-hit" type. Middle school teacher Don Gutteridge, an erratic thrower with poor range at the hot corner, was converted to the keystone position, where he was never great, but tolerable for the Browns' needs. Outfielder, dedicated Catholic, alcoholic anonymous attendee Mike Kreevich was bounced by Connie Mack after just one season. Browns material came in these uniquely unsuited for baseball packages.

Pitcher Nelson Potter, another Mack castoff, while injured, received the wrong knee operation (removing the good cartilage), but recovered with a screwball and slider combination (a rarity), granting him two special seasons.

Pitcher Sig "Jack" Jakucki was a holy terror. If you crossed him, you better bring a gun, but that might not be enough. After a Wichita, Kansas tournament, irritated by outcome or lack of usage, he accosted an umpire and dangled the poor fella over the railings. Such was the world according to Sig. So his was a railroad career – bouncing from baseball team boxcar to ballpark boxcar – hoping someone approved of his whisky, womanizing, and warring ways for a price. The Browns did so for two seasons. But not without prior misgivings.

A protégé of Rickey, Browns GM Bill Dewitt offered this on the-never-far-from-jail Jakucki:

"[Roger] Hornsby didn't like the guy, so in spring training of 1937 we sent him back to the minors. He bounced around from one club to another, and he'd get drunk all the time, so he got released. Then he started pitching for these semi-pro clubs in Galveston and Houston. He was a paperhanger and painter during the week and then he'd pitch on weekends." (From a Camden, NJ website)

In another telling story, the problem started with the concept of play fighting as the esteemed Arthur Daley of *The New York Times* wrote:

"Jakucki and Euel Moore once went to see a wrestling match after a game. The hefty, playful Moore had the reputation of being the strongest man in baseball, and in Jakucki, he found a kindred soul. The wrestling match turned out to be slightly on the boring side, so to provide some excitement, Moore picked up the 200-pound Sig, and tossed him into the ring. The startled grapplers thought Jakucki was merely part of the act and that someone had forgotten to tip them off. But the indignant referee took a swing at Jakucki, a sad mistake. Jakucki flattened him. Thereupon the two wrestlers pounced on the interloper, also a mistake. Moore joined in until the police broke up the free-for-all and carted Jakucki and Moore to the nearest jail."

When the antics grew tiresome, he was let go – as much due to behavior (Pete Gray was a target) as his age (he was pushing 40 by 1945). Sig never found a resolution to his alcoholic ways. Near Jakucki's death, Browns teammate Frank Mancuso took care of him and handled the funeral arrangements.



Pictured: Luke Sewell (right), Sig Jakucki (far left), Al LaMacchia and Newman Shirley – <http://www.dvrbs.com/People/CamdenPeople-SigJakucki.htm>

Denny Galehouse worked at an Akron, Ohio Goodyear Aircraft plant sixty hours a week, getting his workouts in when he could coax someone to be a backstop for a spell. Galehouse soon became the game one Sunday starter normally due to this wartime restriction. But the rail travel and lack of training caused him to nix the plant job as the Browns grew more pennant-worthy. He pitched the opening game of the 1944 World Series and won in complete game fashion. His ultimate reward: Denny got his draft notice in April 1945 (Heidenry and Topel, *The Boys Who Were Left Behind: The 1944 World Series St. Louis Browns and the Legendary St. Louis Cardinals* 2006, 30-31).

Outfielder Chet Laabs was a hit or a miss – homers or strikeouts. Laabs acquired weekend warrior status too; as war placed boundaries on all players to work a job, first, then play in Sunday doubleheaders. 1st baseman George McQuinn’s carved out the mainstay role, operating a movie theatre in off-seasons. Vern Stephens, thought to lack fielding ability with too many flaws hitting, turned into a premier AL shortstop in the FDR Era. (Offense trumps defense here.) Stephens playboyed around with three different nicknames for female encounters: Vern, Stevie, or Junior. Ellis “Cat” Clary was volatile; a guy with a mean roar, and “real good with his fists.” (Heidenry and Topel, 32-34)

The 1944 Browns cornered the market on derelicts, dead-arm pitchers, and danger-finds-me types, but the war made these baseball castoffs relatively valuable, as value went during the able body call ups to the war.

Browns Pitchers	W	L	IP	ERA	Throws
Jack Kramer	17	13	257	2.49	Right
Nelson Potter	19	7	232	2.83	Right
Bob Muncrief	13	8	219.3	3.08	Right
Sig Jakucki	13	9	198	3.55	Right
Denny Galehouse	9	10	153	3.12	Right
Al Hollingsworth	5	7	92.6	4.47	Left
George Caster	6	6	81	2.44	Right
Tex Shirley	5	4	80.3	4.15	Right
Sam Zoldak	0	0	38.6	3.72	Left

On the other side of the coin, the Cardinals looked the professional bunch led by manager Billy Southworth. Southworth landed a brief stint as Cardinals manager in 1929, but like the stock market, the bottom fell out that year, and a decade passed before he managed big time again. Southworth did not let that time go to waste, honing his chops in dusty stops had by minor league managers, good and bad alike. From Rochester, NY, Asheville, NC to Memphis, Southworth made the rounds of the B leagues to AA, then the highest classification. One can imagine at the height of the Great Depression, that managing B-level baseball after being a solid MLB player and manager was a lesson in perseverance and humility. His ‘lost decade’ was that lesson with heartaches and patience needed.

Southworth already knew how tough life could be, and made the best of opportunities that came. He endured tragedy in 1928, his wife, Lida, losing twins in childbirth (Daly 2008). From this low, he was promoted to the St. Louis Cardinal gig in 1929. Just three years removed from a 10-hit World Series against the Yankees, Southworth found managing his former pals filled with the pitfalls of being a rule maker after breaking most of the rules with the gang. Respect lacked immediately, some calling him, “Billy the Hee (Daly 2008).”

After a so-so debut, Southworth was sent down to manage in Rochester – gaining two International League titles and winning the Junior World Series in 1930 and ’31. But these successes were met with setbacks and more tragedy.

The '32 team faltered in Rochester, so the Cards, Rickey and owner Sam Breadon, fired Southworth. That undue insult was nothing compared to the loss of his wife to a brain hemorrhage in the fall of 1932. The double blow, cost Southworth mentally, as he began drinking hard, affecting his baseball career options for a spell. He tussled with Billy Terry after landing a coaching gig in New York that went the way of the bottle; lost and lonely, and now, out of the show.

With baseball burn out and personal tragedy, Southworth did land a job in the Depression as a cottonseed oil salesman and found love. In 1935, Southworth, remarried, returned to the good graces of the liquor-adverse Rickey, managing in Class B Asheville. As the expansive Cards farm system grew, Southworth was a key to putting profits in Rickey's pockets, as Jon Daly wrote, "Among the players that Southworth helped develop and sell were Al Benton, Hugh Casey, Carl Doyle, and Coaker Triplett."

By 1940, the merry-go-round manager carousel spun lucky again, as Southworth reunited in St. Louis. His long decade back from his darkest hours came through redoubled efforts. (Southworth later lost his son, Major Billy Southworth, Jr., to an 1945 airplane crash shortly after takeoff from Mitchell Field (Daly).)

Between 1940–1949, Southworth's teams won 890 games; 120 wins above his more renowned heads of the day: Leo Durocher and Joe McCarthy. Southworth's best trick: His patience, skills and methods transferred to the Boston Braves in 1948, taking them back to the World Series for the first time since George Stalling's miracle in 1914. To Billy's personality, Jon Daly cites Bill James and Fred Lieb:

"[Bill James said] Southworth was a reasonable and logical man. He could be self-righteous, but he was warm, quiet, and agreeable. The dictatorial John McGraw influenced how Billy would treat players; he would try the opposite approach. Billy communicated with his athletes and didn't second-guess them. Author Fred Lieb said that Southworth's players would come to him with non-baseball problems." (Daly 2008)

From 1942–1944, the Cards seemed to fly on autopilot in the National League. Stan the Man, Marty Marion, Harry Walker, Enos Slaughter, Max Lanier, Mort and Walker Cooper won more than 68% of their contests, not even the Yankees dynasty (Vol. II, Dynasties) could claim such absolute dominion over their league counterparts. (Granted, St. Louis did this against ragtags, fluid rosters, and weekend ballplayers. Slaughter and Walker were absent in 1944; but did contribute.)

But it didn't start out that way. Daly reflects the 1942 season was an interesting flip of the switch:

"As of June 27, the Cards were in second place behind the reigning champion Dodgers, but they were off the pace by 9 1/2 games. Then, in a humdinger of a pennant race, the Cards went 43-9 in their last 52 contests to top the Dodgers by two games and reach the World Series. After losing the first game of the fall classic, 7-4, to the defending champion Yankees,

the Cards went on to sweep the next four and take the title. With that victory and the one in 1926, Billy participated in the Yankees' only two World Series defeats between 1923 and 1953 (a span in which the Bombers won 16 titles)." (Daly 2008)

These Cardinals enjoyed each other's company. Playful gashouse legend Pepper Martin rejoined in 1944 at age 40 with respectable, if short-lived, contributions and good humor. Catcher Walker Cooper was a clubhouse prankster. Musial, smasher of balls, was easy going, if straight-laced, even by generational standards. Mostly, winning made it easy to get along. The Browns meanwhile were, at best, a cast of beat-up Cinderella men looking for a brawl, or respect, whichever came first, and could be won fastest. They both won respect.

Winning with Roosevelt's Rejects

The Browns led the majors in 4F players with eighteen at the beginning of 1944; thirteen employed in the series (Heidenry and Topel, 44). In April 1944, men over twenty-seven were told they were no longer needed to pick up a rifle or load onto a LST for war service. This helped the Browns kept together a veteran bunch of players, whose talents were mediocre in a normally talented league, but the league no longer functioned as such. (If you could have asked the Yankees about such functions, they would concur.)

St. Louis Cardinals, 4-2, overcame the Browns. And within a decade, a midget batted for the Browns, the fans guided strategy for a day, and the franchise relocated to Baltimore as Gussie Busch defeated Bill Veeck with deeper pockets and better comportment towards the masters in both leagues.

Paul Richards replaced Jimmy Dykes in 1955 as the Orioles first long-term manager, leaving a much better organization to run by one Earl Weaver. Weaver employed many ideas: when liked (see below), staying away from bunting; just waited for the 3-run homer and great pitching to get him wins. And the wins came in droves. (It was more complex than that – Weaver favored platoon splits; and had a statistician generate note cards of info on these splits.)

Thereafter, Weaver's teams made history with 4-20 game winners dealing off the bump, mid-LBJ era. Jim Palmer, Mike Cuellar, Pat Dobson and Dave McNally 1971 superb seasons did not defeat the Pirates, who won game 7 in 1971. The Orioles, once-upon-a-time Browns, closed out a Cardinals-like run (318-164, 66% wins); showing time, patience, and talent can secure success.

The Kings of Ejections from MLB Games (Lindholm 2014)

Manager	From	To	Games	Ejections	Pct%
Bobby Cox	1978	2010	4508	161	3.6%
John McGraw	1899	1932	4769	116	2.4%
Leo Durocher	1939	1973	3739	94	2.5%
Earl Weaver	1968	1986	2541	94	3.7%
Tony LaRussa	1979	2011	5094	87	1.7%

*Billy Southworth, ejected 5 times, 1770 games; Luke Sewell 11 in 1,259 games



Sportsman's Park in the early 1960s. Despite his later efforts, Gussie Busch did not rename the field Budweiser Park. He just created a beer with his name on it; then built the park with his name (and beer label) conspicuously apparent. Notice the center field sign too. (Courtesy of Bernard L Waxman)

Graph: Home runs to Doubles Analysis over 5 ERAS

Home runs and Doubles Averages over 5 ERAS

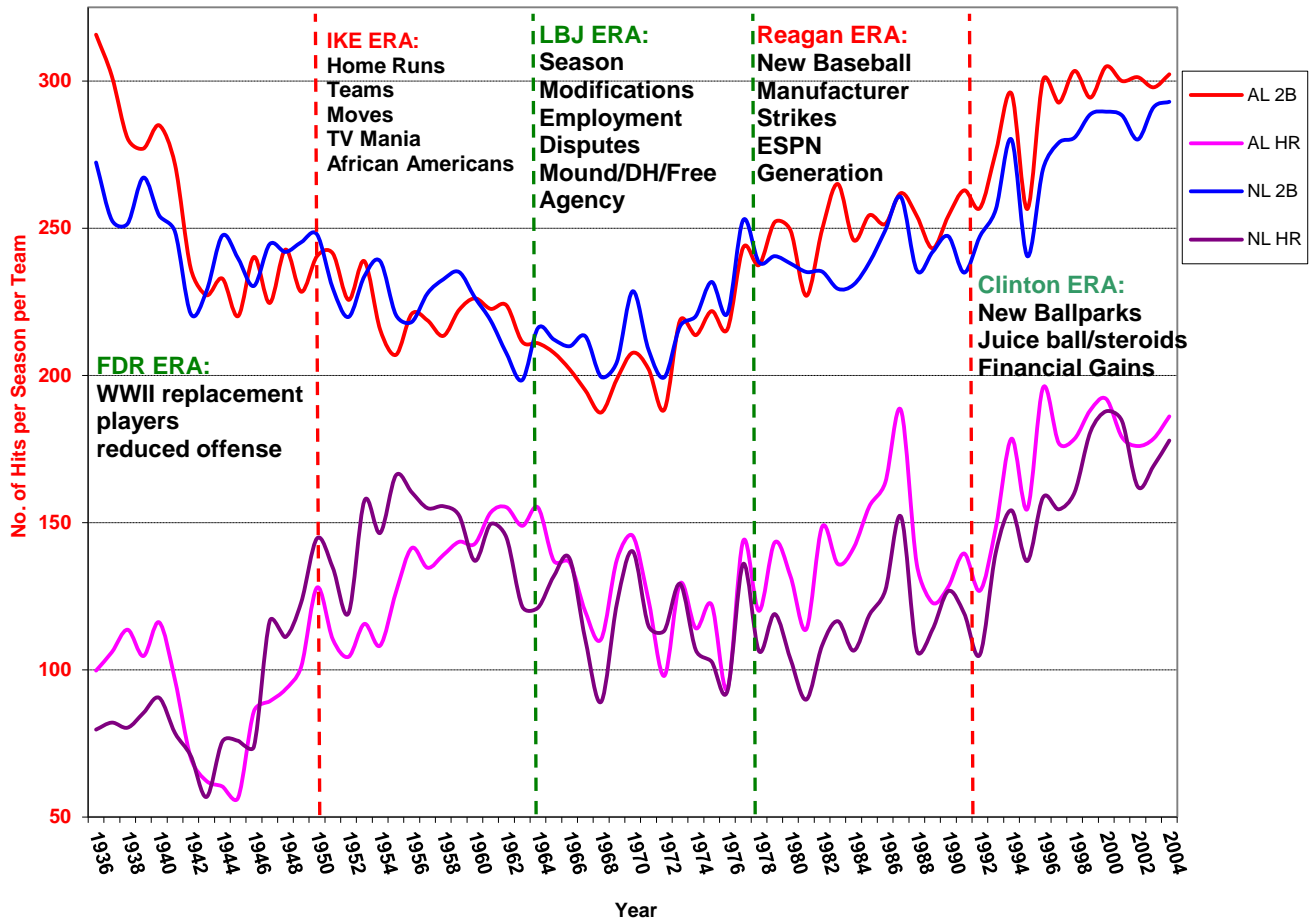


Table. Average Number of Extra Base Hits (no triples) by Team per Year

BY ERA	Doubles	HRs
FDR (1936-49) ²	251.1	87.7
IKE (1950-63)	224.4	139.1
LBJ (1964-77)	212.4	121.9
REAGAN (1978-91)	245.1	127.9
CLINTON (1992-2004) ¹	<u>283.3</u>	<u>166.6</u>
Average	243.3	128.7

1. 2005 Stats not included 2.
FDR and IKE adjusted for 162
games measures

Table. 18 Ballparks existing during the FDR Era

NO	Franchise	League	Stadium	City	1st YR	Last YR	Capacity	Outfield			Highest Wall
								LF	CF	RF	
1	Athletics	AL	Shibe Park/Connie Mack	Philadelphia	1909	1954	33,608	334	447	329	32'
2	Browns	AL	Sportsman's Park (III)	St. Louis	1909	1953	34,450	351	420	310	37'
3	Indians	AL	Cleveland Stadium	Cleveland	1932	1993	74,483	320	404	320	16'
4	Naps/Indians ¹	AL	League Park (II)	Cleveland	1910	<u>1946</u>	22,500	375	410	290	45'
5	Red Sox	AL	Fenway Park	Boston	1912		33,925	308	390	302	37'
6	Senators	AL	Griffith Stadium	Washington	1911	1960	28,669	350	421	320	31'
7	Tigers	AL	Tiger Stadium ⁵	Detroit	1912	1999	46,945	340	440	325	6.5'
8	White Sox	AL	Comiskey Park (I)	Chicago	1910	1990	43,951	347	409	347	16'
9	Yankees ³	AL	Yankee Stadium (I)	New York	1923	1973	67,000	301	461	296	14'
10	Braves	NL	Braves Field	Boston	1915	1952	37,106	337	390	319	20'
11	Cardinals ⁴	NL	Sportsman's Park (III)	St. Louis	1920	1966	30,500	351	420	310	37'
12	Cubs	NL	Wrigley Field	Chicago	1916		38,765	355	400	353	16'
13	Dodgers	NL	Ebbets Field	Brooklyn	1913	1957	28,000	348	393	297	38'
14	Giants	NL	Polo Grounds (V)	New York	1911	1957	54,500	280	480	255	30.5'
15	Phillies	NL	Baker Bowl	Philadelphia	1895	<u>1938</u>	18,800	342	408	280	60'
16	Phillies ²	NL	Connie Mack Stadium	Philadelphia	1938	1970	33,608	334	447	329	32'
17	Pirates	NL	Forbes Field	Pittsburgh	1909	1970	35,000	365	435	300	28'
18	Reds	NL	Crosley Field	Cincinnati	1912	1970	29,603	328	387	366	23'

1. Moved permanently to Cleveland Stadium in 1946

2. Moved into Connie Mack in 1938

3. Renovations done later moved in fences significantly (461' to 408' in CF in the 1970s)

4. Shared ballpark with Browns

5. Also known as Navin Field & Briggs Stadium

Source: (Diamonds: The Evolution of The Ballpark 1993, 125)

Between 1936 and 1941, home runs (in the American League) remained consistent around 105 per team. The National League lagged behind in both doubles and home runs. This could be due to more talented hitters existing in the American League, or at least, a greater disparity in that talent. (**See Vol II: Dynasty, Yankees II, III, and IV**)

With the beginning of United States involvement in a world war, both home runs and doubles fell off pace considerably. After the war, home runs did rebound dramatically. Doubles slacked off to 235 per team. This post-war change is (partly) attributable to the arrival of new ballplayers who utilized the 'long ball' as an important part of their personal arsenal; and balls that were doubles before now became 'diggers.' The older men – lacking the vigor and performance levels – finally retired; turned the game over to their youthful replacements.

As mentioned, the rebound in offenses tied to the usage of better balls post-war. Rubber materials, inside the baseball, were demanded by the United States armed forces in war. As such, baseball saw external forces affect the outcomes of balls hit – to many a WWII pitcher's delight. These less-lively balls were termed *Balata* balls. When the world at-large (in America) returned to normal, so did actual baseballs. And some of the successful pitchers of the early 1940s became ordinary footnotes in the record book. But while it lasted, the bounce was in favor of the pitchers.

3.2. Ballparks: History



Ebbets Field in 1913. Located at McKeever and Sullivan in Brooklyn, the park played host to Dem Bums, cowbells, a fan band, and memories great and glorious, dismaying and defeating. Organist Gladys Gooding played *Auld Lang Syne* to close the park's playing days. (Bain Collection, Library of Congress)

Ballparks burn a lasting image in ballplayers' and fans' minds. They are known for their quirks and crevices that befuddled the new talent and, hopefully, the opposing players. The design of stands, the foul areas, the walls, the field's playing surface, the sun as it kisses right field, all have their DNA imprinted in the photographer's images and the lasting memories of any childhood spent at the ball yard.

When a ballpark opens, everyone comes in droves to just say, "I was there when..." and fill in your favorite story of a power hitter, pitching gem, fielding excellence, or fan/manager breakdowns. The flawless park pulses with the beat of a new soul looking to make its mark on the long history of baseball idolatry.

In the following, the ballparks that existed in the 1940s, and decades before, are reflected on. These places housed generations of fans that watched the hurling legends toss no-hitters and batters muscle up to drive balls deep into bleachers. All are now gone as of 2014, but Fenway and Wrigley (in Volume II).

The Stadium

In 1936, the Yankees slugged with 1B Lou Gehrig (49 home runs), 3B Red Rolfe (39 2B, 15 3B, 10 HR), RF George Selkirk (28,9,18) and C Bill Dickey (.362) providing the left hand punch, posting a .580 SLG% as the Yankees continued their usual dominance of the fall classic: 4-2 over the New York Giants. Selkirk, Gehrig, and Dickey smacked 5 home runs in the World Series. On the right side, a rookie CF named Joe DiMaggio drove a healthy 29 home runs, tying Rolfe with 15 league-leading triples while hitting .323 in the regular season and .346 in the now, fall vacation home for the Yankees, a World Series time share.

The baton past – and the grandeur of Yankee Stadium oozed after only baker's dozen years. Opening on April 18, 1923 with the Yankees taking on the Red Sox, Babe Ruth hit the first dinger out of the yard that carried his name until 2009. Located at East 161st Street and River Avenue in the Bronx, 'The House That Ruth Built' stood as the most imposing, venerated, and championship-laden ballpark in America; 26 baseball championships came about on the diamond.

The two colonels, Ruppert and Huston, made their play for a separate field after it became apparent the Giants' Polo Grounds was no longer available to them. (Outdrawing your host tends to rub these competitive folks raw.) They put \$600,000 together and bought the land from William Waldorf Astor of New York hotel fame. Ground broke in May 1922, and in only 11 months, the stadium opened. They won the American League and World Series title in 1923; repeated this feat in the 2009 farewell tour.

Yankee Stadium was among the first baseball dwellings to acquire 'stadium status.' As the first three-tiered sporting field, the stadium had quirky designs for the intention of multiple uses. Installed was a strange quarter mile track – that ushered in warning tracks for outfielders – and the left and right field bleachers were set ninety degrees to each other, obviously envisioning football games.

The massive left of centerfield region, nicknamed 'Death Valley' appropriately, placed fans at least 461 feet away in left-center and over 490 feet in straightaway center. The phrase – "out in left field" – is partly due to the New Yorkers who sat in these 20/10 vision seats.

The stadium saw various revisions – including a massive overhaul in the early 1970s that closed it for two seasons – shortening the fences, placing Monument Park in center "out of play", and seating reductions for purposeful ways to get people in the park, and even the famous façade or "frieze" being reduced in the design, and painted white.

But the stadium lives on in the minds of the millions that attended it for boxing matches, football battles, religious conventions, concerts and rallies for freedom and prosperity. On September 23, 2001, the Yankees hosted the memorial to the victims of 9/11 with President George W. Bush tossing the first strike. And while the house built for Ruth, Gehrig, DiMaggio, Mantle, Jackson, and Jeter, has closed, it lives on for the fans that built championship memories there.

Tiger, Tiger Burning Bright: Artful Symmetry in Navin/Briggs/Tiger Stadium?

In 1939, Detroit's 2B Charlie Gehringer and LF Earl Averill paced their left side to a .473 slugging percentage. Unfortunately, even with 1B Hank Greenberg's 33 home runs and Rudy York's solid catching and hitting (20 HRs) from the right side, the Tigers only managed a 81-73 record, a 5th place showing in Navin Field/Briggs Stadium.

The Tigers just finished their best stretch of play since a guy name Cobb was prowling the base paths. From 1934-1937, they won two pennants and finished second to the Yankees in '36 and '37. However, unlike the Yankees, the Tigers home digs were a hodge-podge of renovations, name changes, and threatened abandonments.

In opening, during the first great ballpark building era in 1912, Navin Field held approximately 23,000 fans with a covered grandstand. The park was located at Michigan and Trumbull, on the prior home of the Tigers – Bennett Park. But the new digs did not achieve the same successes others had in this ballpark-building heyday. Whereas Shibe Park, Forbes Field, and Fenway Park played host to World Series almost upon their inceptions, the Tigers waited two score, until the 1930s, through a change of owners and added touches to make an appearance in October.

In 1923, coinciding with the Yankees massive opening, Navin Field expanded with a second deck, adding also a press box to the mix. Still, no fortune smiled. In 1935, Walter Briggs came along at the moment when the team was finely tuned under Mickey Cochrane's guidance and baseball gifts. In '36, the park was expanded to its full double-decker glory with a quirky right field modification: the upper deck jutted out to enhance the short porch of only 325 feet. Many a lefty enjoyed that particular quirk.

Lights were installed in 1948 – the last American League ballpark to put them in use. After the wrap around deck was completed, leaving the entire yard happened only 27 times, with Cecil Fielder and Harmon Killebrew being amongst the names of lore. Reggie Jackson banged one off the right field light standard in the 1971 All-Star game. (Found [here](#).)

From the 1970s forward, a battle waged to demolish the ballpark, or keep its glory in a fading city. With Tom Mohaghan taking the ownership reigns (of Domino's fame), he enjoyed the last championship of the Detroit Tigers in 1984. But Mohaghan was desirous of a new place to call home – and soon enough, after his departure – this storied relic of the Taft era fell to the wrecking ball.

Its legacy shone brightest in the days of Greenburg, Cochrane, and Gehringer, artful symmetry in building it, or not.

A Bleacher View of Tiger Stadium in the 1990s (Rick Dikeman)



Ebbets Field: Home of Bums and Ballplayers in a Bittersweet Symphony

In 1941, 1B Dolf Camilli led the Brooklyn bums to their first pennant in 21 years, pacing the left hand side with a .507 SLG% and a league-leading 34 dingers. His cohort in crime, CF "Pistol Pete" Reiser, ran all over the league (and ballparks) amassing a .343 batting average, 39 doubles, and 17 triples.

Built on a miniscule garbage dump plot in Brooklyn, known affectionately as Pigstown, Ebbets Field played host to the memorable, the laughable, the iconic, and the heartbreaking. Cozy, and filled with Brooklynese, the home ball team spent most of their first thirty seasons since Ebbets' opening at the bottom of the National League. Base running blunders, outfield adventures, drunkard pitching, fans with frying pans, cowbells, and symphonic aspirations – playing "Three Blind Mice" to the ump's introduction – kept Ebbets a lively atmosphere in many a dead-men-walking seasons.

A Few Top Moments:

- ❑ **3 Men, One Base:** August 15, 1926, Babe Herman hits a bases-loaded long drive where he winds up on third with two teammates that forgot how to run. Pitcher Dazzy Vance started on second and advanced barely 120 feet forward while Herman had sprinted over 270 feet. Chick Fewster was the third man in this pickle.
- ❑ **She Wore A Yellow Ribbon:** The baseballs on August 2, 1938 were yellow by design. The change was despised; but softball incorporated the idea to more lasting success. (Charlie O. Finley tried it too.)
- ❑ **Lights, Camera, Action:** August 26, 1939, Red Barber announced the 1st televised game between Cincinnati and Brooklyn. *The New York Times* stated, "Television set owners as far as fifty miles away viewed the action and heard the roar of the crowd."

- ❑ **Vander Meer Strikes Twice:** Second consecutive no-hitter on June 15, 1938 at night.
- ❑ **1947, Almost Heaven and Hell Together:** The first season of Robinson succeeded; Brooklyn appeared in the World Series against the Yankees during the first televising of the fall classic. Game 4, October 3, 1947, Brooklyn pitcher Bevens takes a no-no to the ninth, but lost on a Cookie Lavagetto double with two runners on. (Bevens walked a small village in the game.) Season ends without a championship. "Wait 'til next year" mantra adopted.



Famous Façade of Ebbets Field (Library of Congress, Bain Collection)

The Bums after 1947 grew into The Boys of Summer – winning magnificently and losing too in historic fashion – while winning Abe Stark suits (hit the 3' x 30' sign, Win a Suit!) and gulping down Schaefer Beer. They left Brooklynites heartbroken after winning their lone championship in 1955, exiting stage west. The Boys left town; but their feats and lasting impressions inspired a plenty of baseball boys to write about them thereafter.

Cleveland Stadium: The Mistake by the Lake

Two years after the war, Sportsman's Park fans saw LF Stan "The Man" Musial lead the league in batting (.376) while hitting 39 home runs. RF Enos Country Slaughter batted .321 with a respectable .470 SLG%. But the usually pennant-bound Cardinals came in second to the Boston Braves, led by Johnny Sain (24 wins, 2.60 ERA) and Warren Spahn (15, 3.71) facing the Cleveland Indians. The Braves had the fewest home runs (32) at their home park, while allowing only 40.

Their opponents, the 1948 Indians had pitching and hitting with Bob Lemon (20 wins, 2.82 ERA), Bob Feller (19, 3.56) and knuckleballer Gene Bearden, in his miracle season (20 wins, walking more than he struck out while leading the AL in ERA), to go with right-hand mashers: ex-Yankee 2B Joe Gordon (.507), CF Larry Doby (.490) and 3B Ken Keltner (.522 SLG in a career year).

This was unusual for most seasons since League Park & Cleveland Stadium's appropriation of games began in the 1930s. (League used for six days, with Cleveland games held on the Sabbath.) The weekend-only Cleveland Stadium's oval, deep-roofed, double-decked grandstand extended around past the foul poles before giving way to naked bleachers, which were originally 463' from home plate in the power alleys. The park was a pitcher's delight. Offense was stifled usually.



The Other Park: League Park in Cleveland – Had a short porch in right field guarded by 45-foot wall. (Library of Congress, Prints and Photographs Division)

An inner fence was installed in April 1947, cutting the distance for most home runs by over 40 feet, and other fine tuning shortened the outfield up even more, thus making the park play fair with respect to scoring and favorable for home runs. The '48 Indians hit 77 home runs at home; 78 homers on the road: both totals were tops in the American League as the schedule was completely moved to Cleveland Stadium.

The Tribe set a major-league attendance record in Cleveland Stadium of 2.6 million in 1948 in going to the World Series. In a close result (each team had 4 home runs, 17 runs, 16 RBIs), the Indians beat the Braves 4-2 in the first "Native American" series. Pitcher Gene Bearden finished the World Series with 10 2/3 innings pitched without allowing an earned run, with a win, a save and a .500 batting average at the pinnacle of his middling career.

Six years later, on September 12, 1954, the largest crowd in American League history (84,587) watched an Indians-Yankees game. That year, the Indians assembled the best team since the New York Yankees of the late 1930s. (The 1940s Cardinals, as discussed, took advantage of the wartime service of ballplayers, which unduly affected the balance of competition. 1942 National League batting dropped 9 points and slugging by 18 points from the previous year for example.)

The 1954 Indians hit on all cylinders with batting champion (Avila - .341), home run & RBI leader (Doby - 32, 126), co-leaders in wins (Wynn & Lemon - 23), and ERA king (Garcia - 2.64). Nothing seemed improbable until they played the New York Giants, losing four straight - with Dusty Rhodes providing the punch while Willie Mays asserted fielding supremacy with *The Catch*. ([Here](#).)

As dominating as those Indians were, their potential for dynasty was for naught, as the Yankees came back to 1st place in the ensuing two seasons, while Cleveland finished an unfulfilling second, 3 games and 9 games back. The Indians' home park never hosted another World Series - and garnered the moniker, 'The Mistake' - staying empty during the darkest days of the Cleveland franchise.

It was 41 years before the Indians inhabited first place again, just after the 1994 World Series was not played and 'The Jake' was erected to renew interest and ball team glory. (**See:** Taft Era, Hitting.)

Boudreau, Fielder Shift: SS Lou Boudreau was credited an innovator; ahead of his time by over a half century in many respects. As Cleveland's field leader and manager by 24, from 1942 through the rest of FDR era, Boudreau held the two important positions in baseball. He made decisions for his players, while likely engendering begrudging respect, but more often, their utter disdain. Lou was a "college boy", University of Illinois graduate, in a game where that is considered a very pointed slur. Ralph Berger wrote this *SABR* biography on Boudreau's initiation to management and dealing with players:

"Not all of the Indians were happy with the new manager. During his first spring training, Boudreau had three players walk into his office (Ben

Chapman, Gee Walker and Hal Trosky) to tell him they had asked for the job and could do a better job than he would. During some conferences on the mound, veteran pitchers would give Boudreau a variation of 'Listen, college boy, you play shortstop and I'll do the pitching.' Especially troublesome was Jim Bagby Jr., who Boudreau considered 'the nastiest pitcher [I] ever played behind.' When Boudreau would boot a ball, he would hear razzing about going back to college to learn how to play shortstop."

So daily task and game management – having to manage 24 other men, pitchers being the hardest in that group – along with minimizing bad cognitive bias, inaccurate judgment based on one's prior circumstances, but harnessing too, the quick decisions based on instant inputs where time to debate it is not one's friend, were Boudreau's bailiwick. This, in concert with being Cleveland's star player, was Boudreau's war experience. A war fought on a baseball field.

Boudreau struggled, as many have, in having title with high expectations to produce individually. From 1942-1946, the Indians were middle of the pack in the American League, a high of 82 wins versus 71 losses, a low of 68 victories versus 86 defeats. (His ability to stay out of war was due to 4F classification due to ankle problems that arose while an All-American basketball player (Berger n.d.).) Cleveland ownership changed to Bill Veeck (see: next section); yet another young, insightful and innovative college fella who had bigger dreams than mid-division.

Veeck made inquiries to trade Boudreau, setting off a fire storm in Cleveland, so the two came together, more by accident than their designs. Boudreau had intimated that removal as manager meant he'd refuse to play in Cleveland, demanding trade. Neither Veeck's penchant for moving players freely, nor Boudreau's mediocre management record were dissuading to the Cleveland faithful that such a drastic move was needed. Veeck soon went bar to bar apologizing to fans for the misstep; and fans turned out right in this case.

From a magical season, Boudreau idea of shifting fielders to combat batters that seemed to predictably hit balls where fielders aren't (*hittin' 'em where dey ain't*: baseball slang) grew into stature. And Veeck, who introduced wild promotional tactics to put more damsels and dandies in formerly distressed ballpark seats became a lasting legacy. Boudreau hit .355 in 1948, a career high of 18 homers achieved; managed Cleveland to the 97 wins; the World Series title; and took home the AL MVP award. Veeck integrated the American League; made money; and got Cleveland their last mistake by the lake title.

Best Winners: Not Always World Series Winners

The 1939 Yankees may be the single most dominating team – since they outscored their opponents by 411 runs, won over 105 games (pre-162 game schedule), and swept the World Series against the upstart Cincinnati Reds. The 1927 Yankees produced a similar disparity across the board. In more recent years, the 1998 Yankees are clearly the cream of the crop – coming close to the 2 runs per game disparity level, and winning 114 contests.

Many teams achieved such domination in the regular season, but the playoffs are another more complex story, as seen above in Cleveland's example. Below lists teams that got it going in their favor for a regular season. The World Series was another matter.

Table. Best 18 Teams by Wins – 106 Regular Season wins or more

Year	Team	G	W	R	RA	R Diff	HR	HRA	HR Diff	R-Diff Per G	WS Win
1904	New York Giants	158	106	744	476	268	31	36	-5	1.70	Not Played
1906	Chicago Cubs	155	116	705	381	324	20	12	8	2.09	No
1907	Chicago Cubs	155	107	574	390	184	13	11	2	1.19	Yes
1909	Pittsburgh Pirates	154	110	699	447	252	25	12	13	1.64	Yes
1927	New York Yankees	155	110	975	599	376	158	42	116	2.43	Yes
1931	Philadelphia Athletics	153	107	858	626	232	118	73	45	1.52	No
1932	New York Yankees	156	107	1002	724	278	160	93	67	1.78	Yes
1939	New York Yankees	152	106	967	556	411	166	85	81	2.70	Yes
1942	St. Louis Cardinals*	156	106	755	482	273	60	49	11	1.75	Yes
1954	Cleveland Indians*	156	111	746	504	242	156	89	67	1.55	No
1961	New York Yankees	163	109	827	612	215	240	137	103	1.32	Yes
1969	Baltimore Orioles	162	109	779	517	262	175	117	58	1.62	No
1970	Baltimore Orioles	162	108	792	574	218	179	139	40	1.35	Yes
1975	Cincinnati Reds	162	108	840	586	254	124	112	12	1.57	Yes
1986	New York Mets	162	108	783	578	205	148	103	45	1.27	Yes
1998	New York Yankees	162	114	965	656	309	207	156	51	1.91	Yes
1998	Atlanta Braves	162	106	826	581	245	215	117	98	1.51	No
2001	Seattle Mariners	162	116	927	627	300	169	160	9	1.85	No

Comiskey Park: If You Can't Beat 'em, Annoy 'em

During those World War II years (1942-46), no team posted their best slugging averages from either hand. But in Comiskey Park, batters from either side of the dish were truly appalling. The Chicago White Sox employed three .220 hitters in 1943 and two *Mendoza-line* haunters in 1944, posting slugging averages of .330, .327, .273 during that time. (1970s 2B/SS Mario Mendoza played for the Pirates, Mariners, Rangers, and amassed a .215 BA and .262 SLG in his nearly 1,400 plate appearances. The Mendoza line is more appropriately .215, not .200).

Opening on July 1, 1910, the Comiskey name had stood at the forefront of baseball dealings since the 1880s. Now, a ballpark honored it – and the Sox of the day were healthy; full of talent, pitching mostly. Hurlers like Ed Walsh, Ed Cicotte, Red Faber, and later, Hoyt Wilhelm, Tommy John, and Ted Lyons, all advantaged likely the best grounds crew ever to tarp a field: the Bossards.

Roger, Emil, and Gene Bossard did what actual Sox teams normally did not – created a balanced playing field. In 1967, Chi Sox manager and Leo Durocher's favorite pest, Eddie Stanky, asked for and employed a half-field cut maneuver: the grass in front of shortstop was left long because Stanky's shortstop had limited range; but in front of the second basemen, the grass was cut short

because the Sox's keystone cop could gobble up grounders. The area in front of home plate garnered the name "Camp Swampy" that same year because it was dug up and soaked with water when White Sox sinkerball pitchers took the mound - guys like Gary Peters, Joe Horlen, Hoyt Wilhelm, and Tommy John. However, that same spot was remixed with clay and gasoline then burnt to provide a concrete pad, if a sinkerballer was starting for the opposing team. Frozen baseballs were not out of the question for the pale hose men's groundskeepers either. Any trick available. Whether they worked, another matter.

Opposing teams' bullpen mounds were lowered or raised from the standard 10-inch height to upset visiting pitchers' mechanics. When the Sox fielded a lousy defensive outfield, the grass mowed was left long to turn triples into doubles. Whenever the Sox put up speedy line drive hitters, the outfield grass was cut short to turn singles hopefully into leg doubles. Whenever the Sox roster filled up with good bunters, more paint was added to the foul line in order to tilt the ball back fair. (They even used tamped down fire hoses for a good while.)

Owner Bill Veeck added noise to the picture, installing an exploding scoreboard in 1960. Put *Disco Night* on in the late 1970s that turned into a fan riot, then a rarity: a game forfeiture. Organist Nancy Faust annoyed with "Na, Na, Na, Na" as fans watched many team struggles from 1920 to 2004.

But all those tricks did not save Comiskey Park, as it was bulldozed in 1990. The infield dirt transplanted over to Comiskey II/U.S. Cellular Field. And in 2005, the annoying guys in black put a championship on the board. As announcer Hawk Harrelson said, "Yes!" The Sox brought the Black Sox curse to an end.

Table. Hitting Dominance			
Park	HR Dom	Overall Dom	Notes
Baker Bowl	L	L	280' RF, 60' wall
Braves Field	L	L	319' RF
Griffith Stadium I	L	L	320' RF, 30' wall
League Park II/Cleveland Stadium	L	L	290' RF
Ebbets Field	L	L	297' RF, 38' Wall
Polo Grounds IV	L	L	255', 30.5' Wall
Yankee Stadium I	L	N	296' RF
Cleveland Stadium	N	N	Uniform Dimensions
Comiskey Park	N	N	Uniform Dimensions
Sportsman's Park IV (2 teams)	N	N	310' RF, 37' Wall
Navin Field/Briggs Stadium	R	N	440' CF, low walls
Wrigley Field	R	N	Wind aided to LF
Crosley Field	R	R	328' LF
Fenway Park II	R	L	310' LF, 37' Wall
Forbes Field	R	N	300' RF, opposite of power
Shibe Park	R	R	334' LF

Forbes Field: Built by Barney



On May 25, 1935, Babe Ruth hit 3 home runs in Forbes. The last one cleared the Right Field roof – and possibly: the longest hit ball in the parks' history (Ritter and Honig 1984, 156). Forbes hosted zero no-hitters in 4,728 games and kept the catcher in shape with the deepest backstop at 110 feet. (Storied Stadiums, Curt Smith. pg. 74) (**Picture:** Library of Congress)

Home	From	To	PA	AB	2B	3B	HR	BB	BA	OBP	SLG	GDP	BA ip
RHB	1940	1970	44174	39592	1636	522	740	3460	0.268	0.329	0.392	1023	0.295
LHB	1940	1970	21189	18866	754	275	312	1909	0.273	0.341	0.392	346	0.297

Note: Baseball Reference query ran July 16, 2014

Barney Dreyfuss (1865-1932) came over from Germany to escape conscription into war in 1881; a perpetual thing it seemed within the European theater of politics and boundary disputes. For Dreyfuss, luck smiled within a decade of this escape. He started out as a clerk in the liquor business of a close relative, and there, he made connections quickly. By 1890, his interest in distillery workers playing baseball in Louisville, Kentucky led to him to utilize monies earned for a part ownership of this American Association team. While the

Colonels never blossomed beyond their first season (in 1890, they defeated the Brooklyn Bridegrooms for the AA title), his ongoing interest as the decade wore on, led to half-interest in the Pittsburgh Pirates.

Barney's greatest coup: the signing of Honus Wagner, the bowlegged shortstop with a firm bat and easy demeanor in a game full up on Irish brawlers.

In June 1909, Forbes Field debuted; so named after John Forbes, a pre-Revolution War hero that renamed Fort Duquesne to Fort Pitt. Dreyfuss's connections had paid off on a sweetheart land deal; approved with the help of industrialist Andrew Carnegie. Dreyfuss fussed so much, he shook hands with all the patrons that first game.

The Pirates in the early 20th century competed well with powerhouse Giants Cardinals, and Cubs ball clubs. But after Dreyfuss's death, the team was a 2nd division squad into the 1940s and 1950s, finishing 7th or 8th from 1950-1957. But a few seasons of Branch Rickey's touch rubbed off enough to either acquire or develop Roberto Clemente, Bill Mazeroski, Dick Stuart, Bob Skinner, Bob Friend, Dick Groat and Vern Law. By 1958, the team had a different future.

In the FDR times, Paul and Lloyd Waner were the Pirates attack early on. Both batted over .300 during their final years as Pirates. Between the two, they took over 4,500 cuts; with just 24 homers from 1936-1945. By 1970, Forbes closed. Three Rivers stadium took its place; hosted the peak of Pirate and Steeler power with the aerial bombs of Stargell, Parker, Bradshaw and Swann legendary.

Pirates At Bat: 1000 At-Bats or more, FDR Era

Player	AB	Total Hits	BA	Years FDR
Frankie Gustine	4302	1152	0.268	39-48
Bob Elliott	3913	1142	0.292	39-46
Arky Vaughan	3141	993	0.316	36-41
Elbie Fletcher	3140	875	0.279	39-47
Lee Handley	3001	808	0.269	37-46
Jim Russell	2631	729	0.277	42-47
Paul Waner	2528	832	0.329	36-40
Vince DiMaggio	2302	588	0.255	40-44
Ralph Kiner	2171	618	0.285	46-49
Lloyd Waner	2152	666	0.309	36-45
Pete Coscarart	1926	472	0.245	42-46
Gus Suhr	1892	557	0.294	36-39
Al Lopez	1876	476	0.254	40-46
Pep Young	1874	495	0.264	36-40
Maurice Van Robays	1844	493	0.267	39-46
Johnny Barrett	1768	444	0.251	42-46
Bill Brubaker	1502	393	0.262	36-40
Wally Westlake	1360	381	0.280	47-49
Woody Jensen	1342	366	0.273	36-39
Al Todd	1272	361	0.284	36-38
Stan Rojek	1198	322	0.269	48-49
Babe Dahlgren	1130	306	0.271	44-45

19th Century Jewels

Ballparks became essential reflections of many franchises due to ambience and peculiarities residing in their natures; not necessarily their offensive advantages, though that often helped. This prevailing idea goes back as far as the 1870s. *Lakefront Park* in Chicago had the first luxury "sky boxes" (Gershman 1993, 30) perched atop the grandstand long before the one-of-a-kind Astrodome. In *Diamonds*, a definitive book on ballparks, Michael Gershman reflected how this park was built at the fabled Michigan Avenue & Randolph Street area of Chicago on grounds near the Illinois Central railroad. The Chicago White Stockings (forerunners of the Cubs) won three straight pennants (1880-1882) under HOF player/manager Cap Anson. As a result of winning, the park expanded to seat 10,000 persons around a little league-sized field (it was 180' on the LF line and 196' to the RF wall.) Al Spalding owned the stadium and used a communication method out of the illustrious pages of literature: banging a Chinese gong to request a meeting with his subordinates (Gershman, 30). But Lakefront was just one of many parks built with unique dimensions, communications, advertising, concessions, pre-game events, and other quirks to the fond remembrance of generations of fans to come.

The Polo Grounds

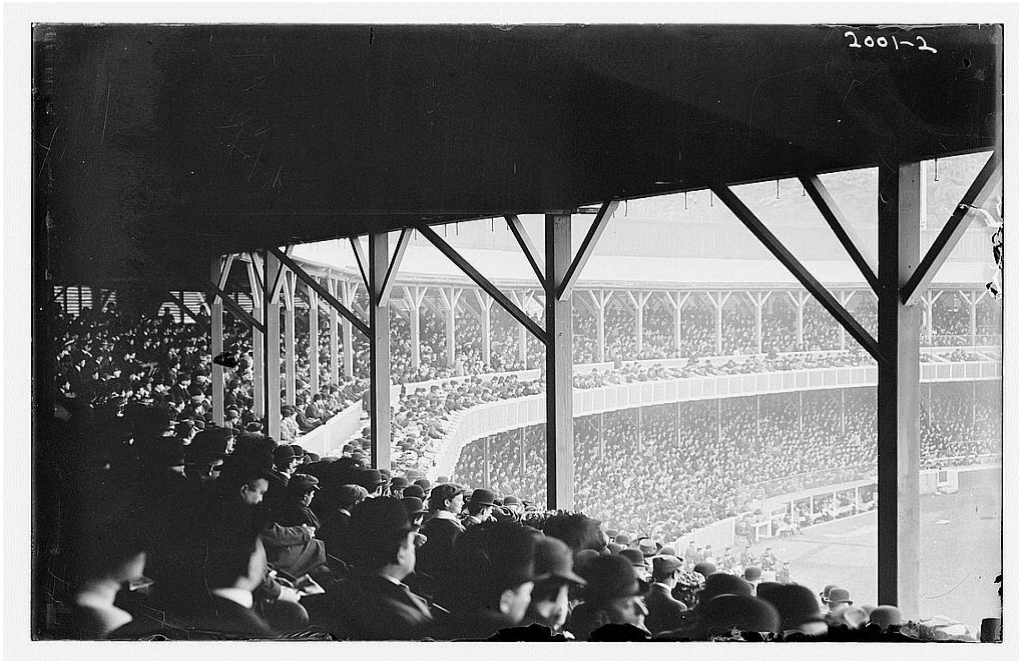
During the late 19th century, the 1st Polo Grounds came into existence. (Four times it was rebuilt, or renovated.) Actually using a real polo playing area near Central Park, the grandstands were considered first-rate for the era, even if the play by the teams was not always. The New York Mets (American Association) and the New York Gothams (Giants) shared the park in the early years before the Gothams were forced by a city alderman to seek another park, even after a pennant-winning season in 1888 (Gershman, 40-41).

Thereafter, the more famed Coogan's Bluff site at 155th and Eighth Avenue was established but not ready until mid-season 1889. With its opening, it became the permanent home under various renovations and saw plenty of baseball history within its bathtub-like walls. It originated as a farm granted by the British Crown in the pre-Revolutionary times to John Lion Gardiner, whose descendant married James L. Coogan, the 1st borough president of Manhattan (Mays and Sahadi 1988, 71). After a fire in 1911, the park was renovated, taking on the shape depicted below.

An attempt to change the name to Brush Stadium, after owner John T. Brush, came in the 1910s, but fans did not warm at all to this. During most of this era, John McGraw built the perennial NL pennant winners – but too saw first-hand the creation of a rival, and legend, Babe Ruth. He hit his 1st Yankee home run on May 1, 1920; characterized then by a *New York Times* reporter as a 'sockdolager' (a decisive blow); described as traveling 'over the right field grandstand into Manhattan Field'. This powerful smack traveled an estimated 500 plus feet. (<http://www.answers.com> - Various sources such as *Green Cathedrals* by Philip J. Lowery and *Ballparks of North America* by Michael Benson were cited as their sources.)



(**Above:** Jackie Robinson at bat. In a 1953 Polo Grounds battle, Jackie just finished a mighty cut.) (Photo by: Martin J. Walsh, Jr.) (**Below:** Polo Grounds in action pre-1930.)



In 1947, the Giants pounded out 221 home runs (131 at home) but finished 81-73, showing it takes more than just power bats to win. Over the years, only four men ever reached the centerfield stands after the remodel of 1923: Luke Easter, Joe Adcock, Hank Aaron, and Lou Brock.



Polo Grounds ca.1922



Polo Grounds ca.1923

Various Teams at The Polo Grounds (from *Answers.com*)

Polo Grounds I

Giants (National League), 1883-1888

Mets (American Association), 1883-1885

Polo Grounds II (otherwise known as Manhattan Field)

Giants (NL), 1889-1890

Polo Grounds III (originally called Brotherhood Park)

Giants (Players' League), 1890

Giants (NL), 1891-1911

Polo Grounds IV (also known as Brush Stadium from 1911-1919)

Giants (NL), 1911-1957

Yankees (American League), 1913-1922

Giants (NFL), 1925-1955

Bulldogs (NFL) 1949

Titans/Jets (AFL), 1960-1963

Mets (NL), 1962-1963

Final Note: No actual polo was played ever at *The Polo Grounds*.

Master Promoter and Entrepreneur: Scorecard Harry

Harry Moseley Stevens (1856 – 1934) was the first concessionaire of real importance to the game. Born in (Derby) London, Harry came across the pond in 1882, first plying his hand as a puddler (the converter of pig iron to wrought iron) in Niles, Ohio. This job did not last; as a work layoff hit in 1887 caused a shift to his natural calling: as a traveling salesman that fed his three children. By happenstance, he went to a baseball game in Columbus, Ohio, noticed a lack of a good scorecard, and became interested, the game and more. (This is likely an apocryphal story.)

In whatever way he discovered the fun of baseball, the idea of scorecards, then a rudimentary lot, he improved significantly upon. He provided more detailed information about players; and more profitably, added in advertising to sell baseball fans, who were not usually avid readers. (Many stuck to socially-accepted church instruments.) Through persuasive 'Shakespearian' (Gershman, 52-53) marketing, Harry, dressed up in a silk hat and bright red suit yelled, "You can't tell the players without a scorecard (King, Father of Sports Foodservice, 1996)." Stevens sold people his improved product; and connections expanded.

Joining forces with Ralph Lazarus, a department store operator, Stevens garnered enough backing to transport his idea round the eastern half of the country in the 1890s, going to Pittsburgh and Milwaukee, among others. After moving further east, Harry obtained the rights to the New York Giants scorecard concession contract, but struggled during the 1890s when the team was mediocre, at best. Not until John McGraw took the reins of the Giants, did Steven's multi-faceted business turn extremely profitable. Again, through good fortune, Harry paired up with brawl-ready-always Ed Barrow, the future manager of Babe Ruth, and all these men achieved long-lasting successes.

In the 1920s, Babe Ruth, at his height of popularity, called Harry Moseley Stevens, "his second dad." Ed Barrow, now running the Yankees, loaned Stevens \$250,000 to purchase a 10% share of Jacob Ruppert's new venture (Levitt 2008, 319). From the taking of just a \$500 flier on the business of scorecards, Stevens changed his destiny forever. (While in England, Stevens is alleged to have supplied milk in a catering business. The entrepreneurial spirit was strong in Harry from the outset. From: *VisitBritain.com*.)

Harry Stevens moved into food as well, garnering credit for adding the ballpark staple – the hot dog – to his concession empire. Harry was slightly modest of his involvement, passing "inventive credit" to his son, Frank. Another innovation tied to Steven's ballpark staples: the drinking straw.

In 1907, the phrase went, "Get yer red hots! Get 'em while they're hot!" and came to represent the sales pitch for a hot dog vendor. This hot dog phenomenon developed out of New York cartoonist Tad Dorgan, who was not completely sure about his "dachshund" spelling, in representing the selling of Steven's newest item. The caricature of a "dog" barking in a bun stuck – added to American firsts – thus created a vital piece of its history and is tied to both men. (Among the famous for these deli delights – the Chicago Style and Dodger Dogs – are a prerequisite for an enjoyable afternoon game.)

The concessionaire's empire grew after Harry's death in 1934. The company took to cleaning great racetracks/arenas such as Churchill Downs, Saratoga, and Madison Square Garden. At various times, *Harry M. Stevens, Inc.* controlled food, beverage, and program sales at Ebbets Field, Yankee Stadium, Fenway Park, Houston's Astrodome, San Francisco's Candlestick Park and Shea Stadium (selling 40,000 dogs per game), while designing Holiday Inns (Gershman, 52-53, 59). From a barker to dog king, Harry 'Scorecard' Stevens' venture grew into multi-level operations, passing through four generations. (Aramark purchased control of the vending operations in 1994.)

19th Century Home Cooking: Oriole Park

Oriole Park, in the 1890s, turned into a home for inventive ways to doctor up a playing field while the early concessions were devoured. Orioles manager Ned Hanlon, blessed with the talents of Wee Willie Keller, Dan Brouthers, Hugh Jennings, Joe Kelley, and John McGaw, imparted lessons on “little ball” (small ball) to this vigorous group. To make small ball work just right, Thomas J. Murphy modified the grounds (alongside his soon-to-be jailbird brother). The Murphy brothers and Hanlon employed a ‘dirty tricks’ campaign a la Nixon:

- Heavily chalked lines that were made to hold bunts
- A hard home plate area to garner “Baltimore Chops” and use speed to beat out balls
- Pitching mounds with soap shavings mixed in the dirt. Opposing pitchers were prone to loss control of pitches due to slipperiness.
- Cheating on base running since one umpire was the norm. If the umpire got distracted, a base runner cut the base path, saving distance.
- Holding onto base runners’ belts rounding the base. John McGraw at 3rd did this often.
- Shining mirrors, base coaches pretending to be runners at 3rd breaking for the plate, and the usual chants and taunts at opposing players (Gershman, 59).

Other attempts at subterfuge included ‘allegedly’ hiding balls in the purposefully high outfield grass. Whereby any Oriole player could pick up what was handy instead of the ‘live ball.’ (Morris, *Level Playing Fields: How The Groundskeeping Murphy Brothers Shaped Baseball* 2007, 36) The psychological advantages were likely as strong as the real ones in these attempts to win games at all costs. (Freud developed psychoanalysis in this timeframe.)

Oriole Park was no safe haven. Soon, the Baltimore Orioles were winning pennants (1894-1896), appearing in five straight **Temple Cups** (a precursor to the World Series) and packing happy fans into the ballpark at 250,000 per season. Their home-away records are a microcosm of their dominance courtesy of the Murphy brothers. From 1894-1898 they racked up a 188-141 away record, good for .571 clip. But at home, they ran up a 264-73 record, a .783 clobbering of teams (Morris, 36).

As Peter Morris of *Level Playing Fields* offered, the Orioles mirrored the American drive to excel at nearly any cost, while ignoring “good form” and expanding the rules to fit inexactly the occurrences that took place on the field (2007, 36-37). (As discussed in the Grant Era and Pitching sections – rule modifications were numerous.) Etiquette, as often portrayed from a traditional British bent, was absent from this American (but of Irish-heritage) growing sport. That was late 19th century professional baseball: anything goes.

By the end of Baltimore’s first winning era, umpires were objects of defilement and disparagement. One man could barely handle the mob actually playing the game, and the fans just intensified these antics, causing injury, and likely, encouraged many an ump to make for a quick retirement from the task. (Or: to go on the payroll of the most convincing man or team owner.)

Yet, most of the tactics seen in the 'Oriole game', were just an expansion of, and a copying of, much of the same tactics employed by their cruder progenitors of the sport (Morris 2007, 37). Midwest teams such as Chicago and St. Louis went further in their heydays; and Chicago, got much of the same success. Peter Morris pulls this quote from Baltimore 3rd sacker John McGraw:

“We never thought up such advantages on the basis of sportsmanship or lack of it. I had trained myself from the earliest days to think up little and big things that might be anticipated by the rule changes next year. With us, only the written rules counted, and if you could come up with something not covered by the rules, you were ahead of slower-thinking opposition by at least a full season.” (Morris 2007, 37-38)

Even with all their successes, the Orioles disappeared from the majors (becoming an independent juggernaut), until the St. Louis Browns franchise fell on bad times, and the Orioles were resurrected.

Griffith Stadium: Home of the Washington Senators, First in War, Last in the American League

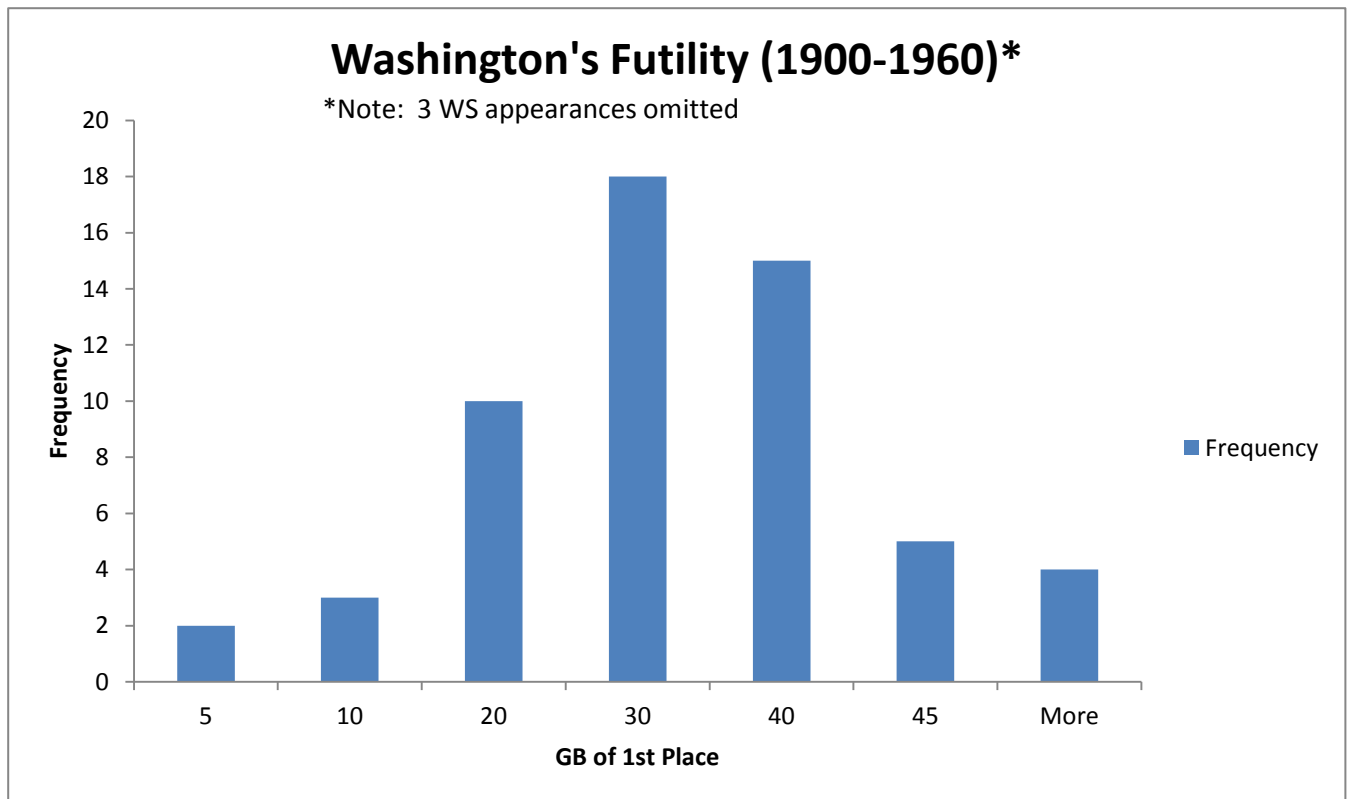


(Picture of Griffith Stadium: Courtesy of the Library of Congress)

This storied franchise lasted 60 years; moved north to Minnesota, while coming back to life as an expansion club. The second Senators moved to Texas within just three presidential terms. It was another 30 years before baseball was played in the backyard of our nation's capital as the Nationals formed out of

Montreal remnants. In winning a lone championship (1925), the Senators correlated well to a Washington politician: most Americans had little faith in either as a successful operation. Aside from 1924, 25, and '33, the Senators averaged 28 games in the rear of the leaders, usually, those Yankees teams.

The first Senators made use of a quirky park that saw all-time greats from Walter Johnson, Josh Gibson to Harmon Killebrew shine despite this losing tradition. False rumors, such as a Fidel Castro sighting in a tryout (Fidel actually was in Cuba when he tried out for famous Senator scout Joe Cambria (Kerrane, Dollar Sign on The Muscle 1984, 15)), just added to the poor reputation had by the Senators. Within the title droughts, brief, and largely forgotten successes, lay racial underpinnings, finger-pointing, and lukewarm appeal at best. The Senators functioned like their never-would-be peers across the Potomac: unable to get things done on time, on budget, with much, if any, success.



The Best and Worst of Times

In 60 years, aside from those years mentioned, the Senators came closest to competing by games back in 1918 and 1945, both, as war ended. When the boys ventured abroad to secure freedom, the Senators had a chance. But for most seasons, betting around thirty games out was a logical prediction.

In the early 1930s too, the Senators fielded a good group of talent, winning over 90 games from 1930-1933, including their last appearance in the fall classic.

Future American League President Joe Cronin, Heinie Manush, and the Sams: West and Rice played in the outfield. Goose Goslin and Fred Schulte joined the team in 1933. They literally had a "Bump," Irving Darius Hadley, throwing off the bump. "General" Alvin Floyd Crowder had his four best seasons in commanding these troops to wins. Pitcher Sad Sam Jones rounded out the Sams on the club, throw in 1930-31 for these competitive Senators.

Philadelphia and New York though fielded more powerful talent. Ruth, Foxx, Gehrig, Simmons, to name the elite that Washington could not outgun until 1933. The Senators, from 1930-33, never had a player hit over 20 home runs in a season. The A's and Yankees fielded 2-4 guys capable of that; and usually one who out-homered 3 or 4 guys combined on those Senator squads. So Washington, usually, had to win with much better pitching and playing a different brand of baseball from their masher opponents.

But then, luck smiled. The A's broke up the key parts of the team for Mack cash during the Depression; and the Yankees pitching faltered more, and Ruth, grew mortal by the day as his belly and age both caught up to him (even at 38, Ruth put up a 1.000 OPS with 34 homers). The Senators decisive fortunes in 1933 turned on a great road record: 53-23 versus a 46-30 home split.

So in the '33 series, they faced off against a New York nightmare in the Meal Ticket-led Giants, losing 4-1. Lefty Carl Hubbell shut down the lefty-dominant Washington attack over 20 innings with just 3 unearned runs in going the distance twice. Lefties Buddy Myer, Goose Goslin, and Heinie Manush, batted 1-2-3 against King Carl in games 1 and 4, going only 4 for 22. Lefty Joe Kuhel went 1 for 9, batting 6th. All batted above .295 in their regular season statistics.

Ballplayer and Owner

Star ex-Cub pitcher, Clark Griffith, defined what the turn of the century pitcher was and connected well with others. When he took charge as manager of the Senators in 1912, Walter Johnson threw the bee-bees on the mound, and the franchise fortunes turned northward. Fans came to the park, thereafter.

They won their lone World Series (1924) with Griffith positioned as owner, inserting player-manager Bucky Harris into the mix. To go alongside "The Big Train" rolling in Johnson, another gas pumper, Firpo Marberry, was the progenitor relief ace for the Senators. Both these pitchers utilized a deep leftfield power alley and a centerfield that jutted in and out around a house, and a lone tree, to keep hitters at bay. Right field, meanwhile, was only 320 feet away, guarded by a 30' concrete barrier, explaining some of the love of lefties. The grandstand behind the plate was lower than the either deck along the foul lines, giving it another quirk, but little lasting appeal.

The golden era ran from 1924-1933, culminating in three post-season appearances. During the Great Depression, Washington's attendance was above average – 3rd in 1929 and 2nd in 1933 to the Yankees – but dropped off considerably (5th) after the World Series appearance in 1933. After finishing top-division for a decade, they spent much of the next 27 seasons looking way up in

the standings. But with a lack of winning, came experiments in financial solvency and faux integration.

Clark Griffith took willingly to sharing his ballpark with the Homestead Grays of the Negro Leagues, marveling at the majestic drives of Joshua Gibson amid the unsteady recovery from the Great Depression. From many reports, the stadium saw better crowds with Negro League teams than with the Senators. During that era, Clark Griffith was also inclined to hire Cuban players as the table below reflects. But even this symbiotic relationship forged over the FDR presidency became divisive soon after Clark Griffith died in 1955, and his son Calvin took over.

Table. Cuban-born players that played for the Senators before 1947

Year	Position	Name	Hits	AB	BA	Wins	Seasons
1913	OF	Jack Calvo	9	56	0.161		2
1913	OF	Merito Acosta	60	267	0.225		5
1920	C/1B	Ricardo Torres	11	37	0.297		3
1920	P	Jose Acosta	8	55	0.145	10	2
1926	P	Emilio Palmero	1	3	0.333	2	1
1935	3B/OF	Bobby Estalella	196	709	0.276		2
1937	C	Mike Guerra	99	434	0.228		4
1938	P/OF	Rene Monteagudo	20	77	0.260	3	2
1941	OF	Roberto Ortiz	184	720	0.256		7
1944	P	Baby Ortiz	1	6	0.167	0	1
1944	P/1B/2B/3B/SS	Gil Torres	320	1271	0.252	0	4
1944	3B	Luis Suarez	0	2	0.000		1
1944	P	Sandy Ullrich	7	25	0.280	3	2
1944	2B/SS	Preston Gomez	2	7	0.286		1
1945	P	Armando Roche	0	1	0.000	0	1
1945	OF	Jose Zardon	38	131	0.290		1

The new owner, Calvin Griffith, felt the increasing African-American population in the nation's capital was counterproductive to attendance at an aging ballpark which had little outward changes from the Great Depression through WWII. Only lights installed for the first night game on May 28, 1941 (Gershman 1993, 156) were a marked difference. However, this 'racial excuse' and assertion just guised the obvious: the Senators were a horrible team, finishing dead last from 1955-59, all but once, and plenty of years prior.

More importantly, the transplanted Baltimore Orioles franchise was set down in 1954, and the attenuating circumstances of radio-TV deals hurt the predecessor Senators, more than the new-kid-in-town Orioles. Such was the difference: Washington's radio-TV rights were under \$200,000 on the East Coast, but \$500,000, plus a new stadium, if they moved to the upper Midwest (Koppett, Koppett's Concise History of Major League Baseball 2004, 278-279).

Baltimore, in coming from St. Louis, instantly drew crowds 50-100% better than the Senators (over 1 million in 1954, above the Senators' best season ever in 1946), even as the Browns-Orioles performed barely above their older brother in futility. Being the "new" franchise, and only 45 miles away, meant someone

“needed” to leave. Six years after Clark passed away, Calvin moved to Minneapolis, Minnesota, a heavily Scandinavian area, creating the Twins, while the Washington Senators (II) played the final game at Griffith Stadium, losing 6-3 on September 21, 1961 to the Twins. Attendance: 1,498 (Sports Reference, LLC. 2013).

Another fairly sterile ballpark, *RFK Stadium* (originally District of Columbia Stadium until 1969), then took its place. The best the 2nd incarnation of the Senators achieved was hiring legendary ballplayers to manage them: Mickey Vernon, Eddie Yost, Gil Hodges, and finally, Ted Williams. Ted got them above .500 in 1969 with 6’7” Frank Howard mashing taters.

But, by 1972, Arlington, Texas became their home. Whitey Herzog and Billy Martin cut their teeth on those early 1970s Rangers. And no baseball is played at present in RFK Stadium.

As of 2013, the three-city franchise carousel in Minnesota, Texas, and Washington has resulted in better promises. With the Nationals (2012) and Rangers (2010-2012) making the playoffs, the old and new Washington franchises have revived through investments and good drafting. Washington stars Bryce Harper and Stephen Strasburg may break through and close the deal of winning the World Series, taking the team from worst to first in *Nationals Park*.

Crosley Field: Home of the Innovators and Originators

While Griffith Stadium had little curbside appeal, even in the nation’s capital, Crosley Field (1912-1970), did well with field quirks, hallmark moments, and historic names. Opening in April 11, 1912, originally known as Redland Field (before the franchise was sold to Powel Crosley, Jr. during the Great Depression), this National League ballpark hosted both baseball’s biggest failure (the 1919 World Series and the Black Sox scandal) and the beginnings of baseball’s enduring nighttime successes.

The Cincinnati Redlegs, or Reds, grew on a glorious team history going back to the Civil War days at Findlay and Western Avenues in Cincinnati. At the turn of the century, the president of the Reds, **Garry Herrmann (1859-1931)** was a powerful captain of industry (a sausage king) that just so happened to run baseball team. His lasting legacy in the game began with election to head up the 3-man National Commission in 1903. He is credited with settling the dispute to play a “World Series” in Cincinnati on January 10, 1903. For that he is known as the “Father of the World Series” (Erardi and Rhodes, Cincinnati’s Crosley Field: The Illustrated History of a Classic Ballpark 1995, 35).” Under Herrmann’s leadership, a new ballpark was commissioned to replace the decade-old, but too small and cozy “Palace of the Fans” (Erardi and Rhodes, 28-30) at a cost of \$400,000 (Erardi and Rhodes, 40).

Designed by Harry Hake, it represented the trend to steel and concrete ballparks flourishing in Philadelphia and Chicago from 1909-1914. Though lacking in architectural glamor, unlike the Palace of the Fans’ Greek and Roman-inspired

grandstand, Redland/Crosley Field design took more influence from an inside view, led by groundskeeper extraordinaire **Matty Schwab (1880-1970)**.

Schwab worked under his father in the 1890s, but soon took over as the driving force behind field operations for more than 60 seasons. He originated a simple scoreboard design for the Reds, copied by Boston, New York, Pittsburgh, and Philadelphia. The position bases, strapped and spiked to the ground, were again of his design (Erardi and Rhodes, 48-49). Such quirks like the "terrace" in left field (and later, the whole outfield), proved challenging for visiting outfielders as they stumbled back, and up slight inclines, making any deep fly an adventure, all were of a Schwabian mind. This incline started 20 feet from the left field wall and gradually increased until it reached a four feet grade at the wall. To the uninitiated, this proved a challenge.

Originally, the dimensions at Redland Field were 360 feet (to right and left) and 420 feet in center (Ballparks of Baseball 2013). In 1938, the fences were shortened up so no part of the park was over 400 feet; with centerfield at a power alley friendly 375 feet (Erardi and Rhodes, 95). The ground rules were written on the outfield fences, the only park with that oddity (129). And beyond the outfield fences laid various businesses, such as: The Crow Engineering Co., Lackner Signs & Clocks, and Superior Laundry & Towel Supply.

These businesses, and the park itself, flooded in 1937 and 1940 when the Ohio River reached historic flood levels, causing a tributary to flood the stadium to the tune of 21 feet above home plate (85). Meanwhile, the team was drowning in success at that time.

Leland Stanford McPhail Sr. (1890-1975) was an enterprising minor league executive hired to revitalize the Cincinnati team in 1933. He took over a faltering franchise, owned for a short while by Sidney Weil, but put up for sale to anyone willing to buy it during those difficult times. Radio and home appliance mogul Powel Crosley was such a man.

With Crosley's blessing, MacPhail introduced night baseball to the majors. He was derided by opposing franchises as being impractical, dangerous, and fan adverse (Erardi and Rhodes, 78). Night baseball, tried before at Cincinnati in 1909, had garnered various degrees of success in minor league venues and Negro League contests. The complaints focused on the technology – the lighting was difficult to direct and bulbs blew, money for upkeep a more important problem – however, to entice fans with new innovations was what MacPhail saw in the kick-starting baseball permanently under the stars.

On May 24, 1935, President Roosevelt operated the ceremonial light switch, certifying the official start of night ball with a West Wing inhabitant. Babe Ruth missed playing a game under the lights by two days. The Reds drew in seven night games 130,337 while only drawing 317,910 in 69 day games (Erardi and Rhodes, 79-81). The experiment had worked well.



Crosley Field with the hill at the wall and linen service beyond in left field. **(Darth and Paul Bengal)**

Crosley hosted various Negro League franchises, including Alex Pompey's Cuban Stars and Syd Pollock's Clowns (1940s), with fans bring their own meals and Negro ballplayers having to find other ways to dress since the locker rooms were still off limits. This inclusion was likely prompted by "a tolerance" that existed for over a decade. Pollock's Clowns were known for their fantastic Harlem Globetrotter-esque shows, including a catcher using a rocking chair, shadow ball, and King Tut – a pitcher, and then, leader of the Clowns.

Cuban-born pitcher Adolfo Luque (1914-1935) pitched for the Reds to the tune of 154-152 record in over 2,668 innings, leading the league in losses (23) and wins (27) in back-to-back seasons in the 1920s. He appeared in the 1919 World Series, pitching five shutout innings. The Cincinnati Reds utilized other Cuban born players such as 3B Rafael Almeida, OF Armando Marsans, C Mike Gonzalez, OF Manuel Cueto from 1911 forward – with Senator's Clark Griffith as the their early manager.

In the 1960s, Crosley Field modified greatly to accommodate business development in the Cincinnati area. The original façade was painted white. And the Western Avenue area past the outfield was designed for other business and financial uses. Crosley's days were marked by the second generation of ballpark builds coming.

Over the years, Reds' fans loved their greats such as Edd Roush, Adolfo Luque, Johnny Vander Meer, Ewell Blackwell, Joe Nuxhall, Ted Kluszewski, Frank Robinson, Vada Pinson, Pete Rose, Johnny Bench, and Joe Morgan. Satchel Paige,

along with eighteen other Hall of Famers, appeared in Satchel's only MLB All-Star game: the last one held at Crosley Field in 1953 (Erardi and Rhodes, 134).

On July 14, 1970, Pete Rose slammed into catcher Ray Fosse in the 1st All Star game held at Cincinnati's new home, Riverfront Stadium. In scoring, Pete touched a lasting remnant of Crosley. Baseball history, a century later, found itself back in the Queen City.

Shibe Park and the Baker Bowl



Shibe Park (renamed Connie Mack Stadium) housed the Philadelphia A's, until their move to Kansas City in 1955, and the Phillies from 1938 to 1970. Ben Shibe and Connie Mack led the building boom of concrete and steel parks in the first decade of the 20th century. Stately, almost White House-like. But aside from 1910–1915 and 1929–1931, a place that also rarely housed winners. (**Photo Above:** Courtesy of the Library of Congress, George Grantham Bain Collection.)



Baker Bowl: Home to Philadelphia's 'other team', the Phillies, and host to many of their 10,000 losses in MLB history. From 1895 to 1938, 3,595 losses or 81.9 per 154-game season occurred. The Phillies won only one pennant in 1915 in what was considered by many the most offense-favored park in baseball history. The short, right field distance (280') was guarded by a formidable 60-foot obstacle made out of masonry, wood, and a metal pipe-and-wire screen. Later, the right field wall read, "The Phillies Use Lifebuoy," growing into an oft cry of derision, "and they still stink!" Centerfield had acquired a partially submerged railroad tunnel under it. The Bowl was abandoned midway through the 1938 season. (**Picture:** An early picture of the Baker Bowl, pre-60 foot wall. Library of Congress, Bain Collection.)

More *Baker Bowl* facts from online site, www.answers.com:

"During its tenure, the park also hosted Negro League games, including those of the Hilldale Daisies and Negro League World Series games from 1924-1926. It was during a 1929 exhibition with a Negro League team that Babe Ruth hit two home runs that landed about halfway into the rail yards across the street in right. (As per game participant HOF Judy Johnson, cited in *The Year Babe Ruth Hit 104 Home Runs*, by Bill Jenkinson, 2006.)

Until the mid-twenties, field care costs were kept to a minimum with three sheep who grazed on the grass on non-game days.

Babe Ruth played his last major league baseball game in the Baker Bowl on May 30, 1935. Coincidentally, Ruth made his first World Series appearance in Baker Bowl in 1915 playing for the Boston Red Sox."

Master Melvin in the Polo Grounds

Mel 'Master Melvin' Ott came up to the big leagues at seventeen. By age twenty, he hit 42 home runs, playing at the left-hand friendly Polo Grounds, the place Babe Ruth loved before Yankee Stadium was built to his specs. Ott played 22 seasons, retiring young, age 38. He totaled 511 homers; 323 came at the Polo Grounds.

Known for his high leg kick, and the target of Leo Durocher's misquoted maxim/barb 'nice guys finish last' (The Image of Their Greatness: An Illustrated History of Baseball from 1900 to the Present, 217), Mel's death in a car accident in 1958 in New Orleans at age 49 ties him to Ruth, age 53. Both died before a new generation fully comprehended, admired, and rewarded their feats to their fullest. Only baseball legend and statistical legacy continued on. And the Polo Grounds, that held an affinity for both their bats, was demolished in 1963.

Trading Ted Williams for Joe DiMaggio?

Even though he lost four plus years to military service, 'The Splendid Splinter' Ted Williams still hit more home runs than anyone else between 1936 and 1963. Given Williams's productivity, he easily eclipses 600 home runs for a career – good enough for Top 10, all-time. Joe DiMaggio lost three seasons to the World War cause – possibly 100 home runs – and likely many more while playing in RH-adverse Yankee Stadium (402' LF) – resulting in his total (361), but adding to The Yankee Clipper's double totals (389).

The two players, Williams and DiMaggio, almost found homes in their respective rivals' parks. The two hitting machines were bandied about (in the spring of 1946) by Boston's Tom Yawkey and the Yankee's Dan Topping, Del Webb, and Larry MacPhail. Later, Yankees' GM Ed Barrow allegedly nixed the deal. (Or maybe, it was sobriety, after the fact, in Tom Yawkey's case.)

A couple years later, the two were traded by handshake, only unraveled by the idea of throwing in a young Yankee left fielder/catcher in Yogi Berra (Linn, Hitter: The Life and Turmoils of Ted Williams 1993, 302-303). Given Ted's gun usage in Fenway Park on the pigeons (Linn 1993, 105-106), his brusque nature (towards writers), Teddy Ballgame's antics certainly fits the New York media's dream; with Reggie Jackson in the opposite field stirring the drinks.

DiMaggio's move to Boston would entail some pleasure, but competition, of playing alongside his younger brother Dom, determining who played where. Joe's ego made moves to a corner outfield position unlikely. Yet, Joe's legacy and New York nightlife would have suffered in Beantown. (It is a matter for a uniquely fun discussion. The 'what ifs' of baseball.)

All-Time Top 20 Home Runs (through 2013 season)

1. Bonds, 762	5. Rodriguez, 654	9. Robinson, 586	13. Jackson, 563	17. Foxx, 534
2. Aaron, 755	6. Griffey, Jr., 630	10. McGwire, 583	14. Ramirez, 555	18. McCovey, 521
3. Ruth, 714	7. Thome, 612	11. Killebrew, 573	15. Schmidt, 548	19. Thomas, 521
4. Mays, 660	8. Sosa, 609	12. Palmeiro, 569	16. Mantle, 534	20. Williams, 521

3.3. Bill Veeck: Always A Maverick

Born in the toddlin' town in 1914, Bill Veeck drew on family/business connections in baseball, a sharp mind, wit, and cutting edge promotions to succeed in towns where many executives before had failed. His father, Bill Veeck, Sr., was a columnist at various publications - the *Chicago Inter-Ocean, Chronicle*, then for Hearst's *Chicago Evening American* - as the Veeck family lived in Woodlawn suburb of Chicago (Dickson 2012, 8). Veeck, Jr. was the 3rd child to the up-and-coming sports columnist, who took to baseball so much that he attempted to buy the Denver Bears in 1914.

After this first attempt at ownership, Veeck, Sr. dedicated himself to analysis of the Chicago Cubs, mainly as their critic, while the White Sox were consistently amongst the best in the American League, leaving the Cubs as the also ran in the rabid baseball town. When World War I came finally to the states, the Cubs gained a war pennant fighting fruitlessly against Ruth in the '18 World Series. The Bostonians took the title as Veeck, Sr. fleshed out possibilities of a gambling hustle, now gaining acceptance as a larger fact.

Meanwhile, the Cubs financial fortunes were not so rosy. Charles Weeghman was bleeding money, from war restrictions to the Spanish flu epidemic to gambling woes, and wanted out quickly to manage his primary line of business: restaurant and bakery owner. In steps William Wrigley, A.D. Lasker, and J. Ogden Armour with the necessary cash and a new moniker for the Federal League park that came along with the franchise. (Armour too fell on his own hard times, losing the family fortune.)

Upon invitation to a club meeting, Bill Veeck, Sr., still a reporter, was given an on-the-spot interview by Wrigley, and asked, "Could you do any better [regarding current operations]?" Veeck responded, "I certainly couldn't do any worse (Dickson 2012, 14)." With that, the family business acumen soon passed from father to son down through four generations.

Veeck, Jr. watched his father in the 1920s and early 1930s build the Chicago Cubs into a contending and powerful force on the field. But off, was were father Veeck likely taught junior, by example, the most through advancing feminine understanding, club promoting, and harnessing radio's greatest advantage: creating a wider fan base. First, improvements to the facilities meant upgrading women's restrooms, to encourage return visits. Promotions and maximizing field usage meant allowing the fledgling professional football team under George Halas's hand to rent the *Wrigleyville* mecca for baseball. To operate equally for all, Margaret Donahue was hired as the club secretary, a front office position never occupied by females in the bigs. She was instrumental to the Cubs success, offering ideas, such as ladies' day, selling season long tickets in 1929, to reduced prices for children under twelve (Dickson 2012, 20-21).

Radio too was important and enduring, as the Cubs generated upper Midwest appeal from Madison, Wisconsin to Upper Michigan to Central

Indiana, starting broadcasts in 1925. The ability to touch fans daily brought youngsters into the fold; developed life-long fans of the proud franchise.

Because no other cereal is so delicious . . . so richly nourishing . . . so quick cooking



President William Veeck of the National League Pennant-Winning Chicago Cubs votes a hot oatmeal breakfast as necessary for office workers as for ball players. Margaret Donahue, Cubs' secretary, agrees.

America chooses Quaker Oats as "The breakfast to go to work on"

With 70% of the world's work done before noon, breakfast is your most important meal, say authorities. Quaker Oats is preferred above all other breakfasts for its richer nutrition . . . more lasting energy.

The finest . . .

William Veeck and his right hand woman, Margaret Donahue. From 1919 to 1958, Donahue put Wrigley and the Chicago Cubs on her daily planner. (Photo: 1930 Advertisement (Chicago Tribune; Owens, John 2013))

Life is short. The tasks of building or creating something takes enormous energies, and one's health, is often a victim as much as it is a sustaining power source. Bill Veeck, Sr. succumbed to leukemia on October 5, 1933. He took the Cubs into two World Series, setting attendance records, but to no avail on winning it all. His son, only nineteen, lost a mentor and a father, and now, stepped into the family tradition of baseball.

Bill Veeck, Jr. came into a learning-while-doing role under the Phil Wrigley-led Cubs. Phil, the son of the outgoing gum magnate was quite different; a shy man, who listened to his gum executives on even baseball matters (Dickson 2012, 41-42). Veeck, the eager and sharp man, wanted bigger things done for the park; more than even his father accomplished in the decade prior. Installing lights in Wrigley was the first of these ideas.

In 1934, a marriage of big league baseball and lights was something only Larry MacPhail was a huge proponent of, as he had done it for the American Association's Columbus team. Phil though rejected it; at least in a moment that soon lasted 54 years. (The Great Depression influenced, reflecting how people respond differently: risk appetite/risk aversion.)

After failing to convince P.K. Wrigley on lights, Bill assumed charge of concessions, hiring the barkers that shilled the best Chicago dogs and scorecards. As Dickson relates, "One of the first was a young hustler named Jack Ruby...[who] was known as a great duker, a slick scorecard hustler who would bump into a mark, then place a program in his hand, and then demand his quarter in payment (Dickson 2012, 42)". Ruby garnered infamy as the killer of Lee Harvey Oswald, the assassin of JFK. Veeck obtained supplies from Ray Kroc, the future McDonald's man and owner of the San Diego Padres. Lastly, Veeck worked on ticket sales for Halas's Bears from 1934 to 1941, getting the first-hand knowledge of the internal workings of sports business operations.

By day, a mid-level baseball employee, by night, Veeck studied business law, accounting, and mechanical drawing at Northwestern and Illinois Institute of Technology for five years. The marriage of practical ballpark knowledge, further by education, landed him projects from increasing fan pleasure, in roaming the grandstands for fan's input on beautification and operations in the park, to the Ivy-kissed walls that remain to this day. The latter, was more than ivy; it was a major renovation of the area beyond the outfield walls, new bleacher installation, concessions storage underneath, offices and grounds-keeping equipment. Veeck employed ideas honed out through those classes. In short, Veeck's work is represented to this present day of Twitter and online classes.

But by the early 1940s, Veeck itched for a new challenge. His relationship with Phil Wrigley was courteous, but not going to lead to successes that Veeck, now a strapping man, was going for in life. Veeck had learned enough, and the opportunity lay north, in Milwaukee, to own and operate like the big leagues do.

Paired with Charlie Grimm, good player, great man, talented with music and magic, the two exposed a losing and lost franchise to their mutual fairy dust. Milwaukee was just the big fish in the minor pond – having the largest population of any American Association team (Dickson 2012). On the cusp of war, Veeck engaged in his first baseball offensive.

Veeck, not being Phil Wrigley, just more smart than rich, teamed up with sound investors: including Lester Armour, meatpacking titan. All total, \$100,000 was cobbled to buy and assume debt for the franchise. Veeck immediately stole away Charlie Grimm from Wrigley, cut him in on ownership, and gave him a pay raise (Dickson 2012, 56). This of course tied Grimm to the fortunes of the team he was to manage: incentivizing the deal. Veeck was not done with his former employer, acquiring Lou "The Mad

Russian" Novikoff, who pounded 41 home runs in the Pacific Coast League for Los Angeles in 1940. Yet, that prodigious feat never translated to the bigs, as Wrigley bought high, and then, sold off the Arizona born Novikoff to Veeck (Sports Reference, LLC. 2013). The outgoing Novikoff loved the spotlight (sung to the fans); and was joined by other Cubs castoffs, as ostensibly, the Milwaukee team worked as a Cubs' farm team.

Veeck repeated many of the same renovations his father instituted. Milwaukee's Borchert Field, a forty year old eyesore of a park, needed the sprucing. He did the amenities over, painted, put emphasis on the ladies, and got back in touch with the fans. He catered openly to the media, building relationships through meats and beer, and talking to anyone with influence or not. As Veeck was just starting out, he needed a hook. But he did this throughout his career, building sustainable interests by winning over critics and considering fans' comfort and desires for entertainment.

Initially, the Milwaukee team did not turn around much – they were a woeful 55-98 in 1941 under Bill Killefer, and Grimm, scoring 665, while allowing 825 tallies. But in that year, a joke evolved as Veeck flipped the roster over, generating 51 player moves in a span of just three months, "[I'm running] three teams – the one that left yesterday, the one playing today, the one coming in tomorrow" (Dickson 2012, 59).

Those player movements served their purpose as their records improved significantly over the following years: moving up to 81-69, in 1942, and 90-61, winning the league in 1943. In 1942, Eddie Stanky garnered the American Association MVP award (Dickson 2012, 67), hitting a robust .342/.457/.516 slash, in his last full minor season before becoming the pesky on-base weapon of Leo Durocher in both Brooklyn and New York.

The 1943 team relied on veterans either at the backend of their MLB careers or career minor leaguers such as Tony York, Grey Clarke, Ted Norbert, Don Johnson, Bill Norman, Hank Helf, Heinz Becker, as hitters, with Joe Berry, Wes Livengood, Owen Scheetz, Earl Cadwell, Bill Fleming and Charlie Gassaway doing the pitching, among others. The team was the oldest in the American Association (30.4) – another tactic Veeck exploited well: the useful veteran. That team used 29 players for the entire season.

Veeck's reclamation project produced trebled attendance, going from 98,000 in 1941 to 280,000 in 1942. Winning helped, promotions, Bill Veeck's forte, took hold and became the calling card: blocks of ice, step ladders, fruit baskets, greased pigs, draft horses, birthday cake pitchers, and in his Cleveland ownership, a new car. Veeck promoted fun, gag gifts, put in variable fencing (installed a movable higher fence on a track to stop home runs, varying by who was batting) that resulted in new league rules. Anything garnering an edge or add interest – that was Veeck's modus operandi. On December 30, 1942, Bill Veeck received minor league executive of the year award from the industry bible, *The Sporting News*.

All in the Myth Making: The Philadelphia Phillies

By late 1942, Veeck was itching to go bigger. The Philadelphia Phillies, an absolutely moribund franchise if ever there was, was up for sale by Gerry P. Nugent, whose mastery of accounting had its limits, as the franchise was in hock to the National League to the tune of over \$100,000 (Jordan, Gerlach and Rossi 1998). The Philly franchise had drawn less in 1942 – 230,183 (Baseball-Almanac.com 2013)– than Veeck’s smaller park and “minor league” operation in Milwaukee. As a new operator, but with nearly a decade of hands-on experience, Veeck could do no worse than current ownership had during in the prior two decades. So Veeck, in the fall of 1942 began putting out feelers, getting money lined up, and inquired on the franchise to Nugent, and later, the commissioner’s office.

Some later questioned Veeck’s voracity on buying or stocking the team with African-Americans. In his 1962 autobiography, *Veeck - as in Wreck*, the story was told about acquiring the Phillies before the ‘43 season. In concert, a Wendell Smith interview done, only months before the Veeck book came out, reported much of the same. Those instances, were seen as tainted fruit by SABR members, David M. Jordan, Larry R. Gerlach, and John P. Rossi, who presented their article: *The Baseball Myth Exploded: Bill Veeck and the 1943 Sale of the Phillies*, published in 1998.

Starting their piece with some of the more fabled baseball whoppers – Ruth’s called dinger in 1932, Doubleday’s invention in 1839, to Alexander’s 1926 World Series hangover, it showed the path they were about to tread. Loaded language such as “alleged”, “embellishments”, “not true”, “concocted”, “not believable”, trailed throughout the accounting of Philadelphia events. To their combined minds, the lack of mentioning in 1942-1943 meant there was no attempt, no sale conceivable to Veeck. Because Veeck later owned the Cleveland team, but failed to acknowledge his attempt with Philadelphia, he was lying by omission. Additionally, the authors cited the Negro press’s silence, specifically Fay Young, Joe Bostic and Smith, again (as Veeck offered racial integration). Yet, they undermined their premise in including Red Smith’s account of the alleged events published in 1946. Moreover, the prospect of racial integration, a key aspect of the deal, is dismissed because such was not mentioned in Smith’s column.

What this boils down to is this: because there was not a definitive blow by blow accounting of Veeck’s talks with Nugent about a sale, there can be no said attempt to purchase. And Bill’s recounting was done more to burnish his reputation, according to these authors, than any actual attempt for the franchise and integration aspects.

Yet, the history forward from that point develops surprising clarity to Bill’s actions and feelings on a number of issues. For one, Bill Veeck was preoccupied by World War II from 1943-1946. Not just passively, but actively participating in operations in the Pacific theatre of combat. His baseball ownership was done by wire and mail to his partners in Milwaukee

in Grimm and Schaffer. Ideas, once broached, and tabled, probably seemed fairly remote from a hot, Pacific atoll.

Secondly, once he returned, missing part of a leg, requiring months of rehab, Veeck did reengage in desires for major league baseball ownership. He bought the Indians in June 1946, turning that franchise around in three years, winning a championship. He integrated very shortly after Branch Rickey in July 1947, bringing in a young Larry Doby and the forty old plus legend in Satchel Paige. But the authors point to MLB owners not allowing his ownership, if he intended integration, yet Rickey did just that with Robinson in 1946. Stating their case as:

“Although Rickey had breached the color line in Organized Baseball by signing Jackie Robinson, who was performing well with the Montreal Royals in the International League during the summer of 1946, the racial integration of major league baseball itself remained uncertain. Given the widespread and adamant opposition to integration and the unhappiness within the game with Rickey's course, why would the owners permit the sale of the Indians to Veeck if his intention to sign black players was known to them, as he claimed it was?” (Jordan, Gerlach and Rossi 1998)

In short, they pose again a bad foundation to start a discussion. Sure, the owners did dislike the very aspect of further integration. But, the times were indeed, changing, if slowly. Commissioner Landis was dead, never known to reflect positively on integration, as he barely broached the topic, unless forced. His successor though, Happy Chandler, personally had to approve the Robinson contract. He was more tolerant, or at least, pragmatic about player's rights in general.

The owners too had to see the epic changes via the social-political landscape, as blacks had significantly contributed to war efforts, and were in all of the nascent pro sports – boxing, football, basketball – such as they were at the time. Unions too were striking (even mentioned was the 1944 Philadelphia trolley strike) and labor markets in turmoil over rights and pay in the aftermath of WWII resonated to these baseball businessmen, who usually had more than just one revenue stream to worry about. And, by 1948, President Truman, by executive order 9981, forced full integration of the military, a much more important task. These are backdrop events to the authors' pointed beliefs to the contrary.

Thus, while owners were not happy, the reality was, it was already becoming a moot issue on the inevitable moving forth on the integration, if for talent garnered alone. It could be thought, that while all were hesitating (some more than others), they beta-tested the prospect of integrating, and potential for improving their bottom lines, if only tangentially, at first. (And the National League owners came to their collective senses first.)

The authors again make undue light of Bill's reflective posture on integration in Cleveland, because Veeck "slowly and carefully, perhaps even timidly," regarding the prospect of black ballplayers, calling this feeling and thinking, "[an] odd comment" (Jordan, Gerlach and Rossi 1998, 5-6). Again, this begs to question: do they ignore the climate in 1947? Anyone, while desirous of integration, knew both ball team and ball player were affected by upheavals on a team with one, two, or three black ballplayers, as was discussed in the *Negro Leagues* section.

Inconsistent telling of the story bothers them too, if only twenty years after the fact from a Veeckian perspective. They hone in on names left out, or composition of the details, to express what they regarded as "quaint phraseology" (Jordan, Gerlach and Rossi 1998, 7). They make great ado of the lack of anger by Veeck in losing out on the Phillies.

Again, this franchise did not make enormous strides on the time horizon Bill Veeck operated on in business. (Since Veeck owned Milwaukee, Cleveland, St. Louis, Miami, and Chicago franchises during a period of just 18 years. Philadelphia was hardly a defeat – probably more of a "whew, thank God for small miracles" moment.) But the final analysis drawn by the historians, "Nonetheless, we must face the fact that Bill Veeck falsified the historical record. This is unfortunate (Jordan, Gerlach and Rossi 1998, 9)."

The most balanced rebuttal for the discussion is by Jules Tygiel, stating, "Correctly chastised earlier historians...replacing unwarranted certainty with healthy debate. Their own rush to judgment, however, offers yet another cautionary tale of relying on an absence of evidence and overreaching one's resources in drawing conclusions (Dickson 2012, 361)." Paul Dickson lays out a path of sources that confirm the intent and desire to buy and stock the Phillies as Bill saw fit. Among the points: An interview of John Carmichael, J.G. Taylor Spink Award winner; *Baseball Digest* in September 1948 pointing out Bill's intent; 1949 Urban League meeting with Fay Young in attendance, where Bill commented on the Phillies potential deal; Abe Saperstein in 1954 in the *Chicago Defender*, speaking of an assemblage of an unstoppable team; and Shirley Povich on Landis and the deal (Dickson 2012, 362-366).

Bill Veeck had a reputation as an iconoclast, but also a decent man who strove for equal rights long before it was ever popular. While it can be said this deal was not as ripe as say intentions to form the Continental League, it still bares remembering that the man found plenty of success in the sport thereafter, and left his mark, with or without the Phillies.

Bill Veeck had the intent to buy, but surrounding events were not in his favor. What he would have done with the Phillies thereafter is conjecture. Would he have been so inclined to enter World War II? Would he have integrated quickly? One can only guess. But the history is clear: he did integrate the America League first, and owned plenty of other MLB teams.

Cleveland to Chicago: Promotions, Finance 101, and Disco

Veeck took over the Cleveland Indians on June 22, 1946 utilizing again the partnership route with Phil Clarke, Lester Armour, Arthur Allyn, Newton Frye, Sydney Schiff, Harry Grabiner, and top comedian, Bob Hope (Dickson 2012, 110) coming aboard. As usual, Veeck installed his close baseball cohorts to run operations: specifically, Grabiner as VP of Operations and from Milwaukee, Rudie Schaffer, as the GM.

While in Cleveland before the sale, Bill scouted the town, determining what the fans saw lacking in their team. From this, Bill did his standard renovation: improved facilities; created access to the team (tickets and media); and hired ushers to assist fans to their seats and other needs. These ushers were professionally dressed with neckties, blue coats, and gold striped trousers, and clean shaven. Concessionaire Max Axelrod worked for the right flavored hot dog to further entice Cleveland fans back to the ballpark. A new PA system was installed that could actually be heard by the fans (Dickson 2012, 111-112). Sport Shirt Bill was classing up the joint that was not yet referred to as "The Mistake by the Lake."

His on the field matters required creativity too. Lou Boudreau was the All-Star shortstop, player-manager of the Indians throughout the war. But Bill was not enamored with Lou, thinking Casey Stengel, who he had become friends with after a rough beginning, was a better fit for the future. However, getting rid of Lou did not play well in the media, or amongst the fans, so Bill, while eager enough, backed away from a potentially disastrous trade. And Boudreau, rewarded him, thereafter.

Instead of shipping out the young SS, he hired Max Patkin, "The Clown Prince of Baseball," a struggling minor league pitcher cut from his team, to "coach" at first base. Patkin's real job was to entertain, be exasperated on cue at bad calls, and be a gas to the fans and players alike. Even Boudreau enjoyed the antics. Charlie Price was another gag-a-minute guy, able to hit balls upside-down or throw while inverted (Dickson 2012, 113-114). The ballpark buzzed with innovative ways to get fans to the park – including a mock funeral in 1949 – as these entertainment pieces brought spirit to the workman-like ways of the Indians.

More directly, Cleveland team's turnover in 1946 was much like the Brewers of 1941. 48 different men wore Indians uniforms – just 5 position players saw over 100 starts. while the pitching staff was headed up by Feller and Allie Reynolds. Feller completed 36 games in '46. Bill purged quickly; rebuilt rosters; and made field matters tied into the game plan for winning. He did move Allie Reynolds for Joe Gordon, who was instrumental to the 1948 championship run.

Not just a promo guy, Bill was quite the finance wizard to boot. He boosted returns to his partners by utilizing loan repayments rather than just dividends on their stock ownership. Using debentures at 85%, stock at 15%,

his partners were paid back their money on the loans to avoid higher taxes. After repayment, and if a partner cashed out his stock, the flat tax rate of 25% on the net earnings from a stock sale was far below the higher tax rates at the time for the wealthiest person (Dickson 2012, 116). In some respects, this was a forerunner of the popular leverage buyout: As returns are higher for debt-heavy deals compared to equity-saddled purchases.

Veeck, in the same venture, began counting his players as depreciating intangible assets (*roster depreciation allowance (RDA)*), thus minimizing his tax burdens through amortization expenses allowed by the IRS. This little item, to amortize off player's various and varying abilities (as some are getting better, others, worse during their careers) might be the most lasting legacy of Bill Veeck as even the 21st century professional teams employ a version of Bill's taxation reduction strategy.

In 1946, Veeck tied 90% of players' salaries to the overall value of the team (Lamberti 2012); what many modern commentators liken to calling ballplayers, "cattle." While Bill was certainly liberal leaning, he too saw advantages to ownerships stranglehold then on the players. As players were tethered by the reserve clause, it is hard not to see how they often could be seen as cattle first, people second, under the U.S. tax code. Even the term, "farm system" colloquially ties them to baseball plantations for life, or until their retirement from the game, pre-1976 era of baseball.

As professor Rodney Fort of the University of Michigan wrote in 2010:

"The purchase of a professional sports franchise consists mainly of the rights to intangible assets. Some intangible assets derive from league membership (territorial rights, revenue shares from attendance and television, and shares of future expansion fees) while others derive from their relationship with state and local hosts (revenues from tickets, parking, and concessions). Finally, there are 'other values' like related business opportunities, accounting costs that are actually profit-taking, revenue-shifting tax advantages from joint ownership, and, the point of this paper, tax advantages through the RDA...

Historically, the assignment of value to particular assets evolved arbitrarily. Bill Veeck describes how he wrested the RDA from the IRS after he bought the Cleveland Indians in 1946 (Veeck, 1962; Quirk and Fort, 1992). Essentially, Veeck assigned the bulk of the firm's value (90%) to the intangible player roster asset and devised a depreciation schedule (5 yr.) to reduce his taxable obligation on the team. A possible parallel is the depreciation of livestock that is purchased for work, breeding, or dairy purposes but not kept in an inventory account. Apparently, these types of livestock 'wear out' in their relative productive roles and the IRS allows them to be treated as depreciable assets for tax purposes." (Fort and Coulson 2010, 465)

While seemingly a bad joke, the IRS sees baseball as a business – that determines what it does with its assets and liabilities as it wants – but also generates taxable income. Under then (and current) tax laws, Bill just found a substantive advantage to creating a depreciation schedule over 5 years that lowered his reportable income and tax.

Fort and Coulson further contend, “Team owners do not own players as breeders own livestock” (Tax Revisions and Pro Sports Team Ownership, 466). But even in 2013, a team can have a player under its control for up to 12 years from acquisition by draft or international signing to a player’s right to free agency. Over that course, a player’s abilities will change, non-linearly. Their minor league careers do not contribute directly to a team’s bottom line – while the initial purchase price of the asset, and a signing bonus (in the millions) obviously does.

Thereafter, this investment must be developed through coaches and player facilities, hedged through insurance payments, and cared for by qualified medical trainers, physical examinations, and often, surgeries, aside from basic salaries, that come from relationships to their affiliated farm clubs. While this is not a purchase of a human, it is a definable investment in one, an asset that may or may not pan out later into a marketable professional who both wins games and adds to the revenue puzzle as will see later. And at some point, the sunk costs must be abandoned for a younger, high potential asset, often through trade or outright waivers.

Fort and Coulson countered this idea is double counting (as player salaries and development expenses are handling elsewhere in the balance sheet), but the IRS, evidently, was none the wiser for essentially two decades from Bill’s first creative accounting tour.

So successful was this tax strategy that Allan “Bud” Selig utilized Veeck’s method in moving the quickly bankrupted Seattle Pilots to Milwaukee in 1970. After purchasing 30 players before the 1969 season from 10 American League teams for \$5.25 million, acquiring 3 affiliated minor leagues, Seattle’s owners ran into difficulties as they were undercapitalized going into the venture. \$1 million was first paid to the Pacific Coast League for losing the successful Seattle Rainiers. Political pressure from Kansas Senator Stuart Symington pushed up the roll out of baseball operations by two years. Sick’s stadium was old, inadequate seating, and very poor amenities for an MLB ballgame, thus driving folks away from the park right from the outset. Financing was done hastily, leading to a \$4 million loan note called in at the end of the season. Finally, operating expenses of \$3.7 million essentially killed the Pilots before they took off, and the pressure was on for owners to find any exit landing strip available.

Selig’s outfit was in the race for a franchise since the departure of the Milwaukee Braves in 1966. The moment to bring a franchise back came in September 1969 as a tentative agreement was reached for Selig’s group to

buy out the Pilots and their 149 total players and facilities for \$10.8 million. (If we do some basic math: nearly \$10 million for the 30-man roster, PCL payout, and operating costs undoubtedly set a minimum bar for the sales price. Basically, Selig washed away the headaches of the prior ownership.)

The IRS later challenged the 94% roster value of \$10.8 million purchase price to no avail as *Selig v. United States*, 740 F.2d 572 (1984) was decided in favor of the future commissioner. The tax code in question: 167(A) of the Internal Revenue Code was applied to 149 players (including minor league rosters) by Selig. The team garnered four appraisals of the value of the roster, averaging just over \$10 million. Two were deemed tainted, ironically, the lowest two appraisals done by the in-house staff. Economist Roger Noll, hired by the government, valued the roster in the \$6 million range. And former Pilots co-owner, Dewey Soriano, placed the value at \$3.2 million, after buying up those 30 players for \$5.25 million (*Selig v. United States*, 740 F.2d 572 (1984)).

The court assessed three different markets existed for player acquisition: player, free agency, and club. The club market was definitively chosen in the above analysis. However, the government contended that no one would pay \$10 million for essentially a worthless franchise, the part not related to the player costs. But the court determined that, "The valuation is an approximation; we will affirm the district court's determination absent clear error, even if we would not have reached precisely the same figure if we had tried the case ourselves" (*Selig v. United States*, 740 F.2d 572 (1984)). The court further saw its job not to assess particular valuation of players, but to allocate value to the parts of the franchise for taxation purposes. While the government contending the appraisals were done after the fact (in the fall of 1970 instead of the spring, before the sale), the court sees this as not unusual in the course of normal operations and business decision making.

The court bluntly stated, "Essentially, the government simply failed to prove its case at trial. It expended a great deal of effort attempting to prove that the players were not worth as much as the plaintiff claimed and that the franchise was worth more than the plaintiff claimed" (*Selig v. United States*, 740 F.2d 572 (1984)). For comparison sake: the New York Yankees were bought in January 1973 for \$8.8 million (excluding \$1.2 million for parking garages CBS owned.) It is safe to conclude that the New York market, which drives valuation in most respects, is decidedly larger than Milwaukee's.

As Forte and Coulson conclude, "Eventually, tax reform legislation in 1976 set the 50/5 Rule and revisions in 2004 set the 100/15 Rule." This in regards to sports franchises' sales and the amortizing of intangible assets, a player's value. Bill Veeck's accounting method is alive and well, if under congressional modifications.

While accounting rules were being rewritten, Veeck's overall success in Cleveland came at the cost of his 1st marriage. The far-flung life of a thirty-

something owner of MLB franchise made him unavailable at best, neglectful of his home life at worst. After achieving the top in 1948, the only place was down in baseball terms.

As Warren Corbett summarized in a SABR biography:

“Inevitably, 1949 was an anticlimax. The Indians dropped to third place as attendance fell by more than 300,000. Veeck continued to rev his promotional engine, but he could not top himself. When the club was eliminated from the pennant race, he staged a funeral at the ballpark and buried the 1948 flag. That stunt outraged some of the players and fans. Before the season was over he was looking to sell the team.

Although he said the thrill was gone in Cleveland, Veeck sold because he needed cash to settle his divorce and provide trust funds for his and Eleanor’s three children. He seldom saw the children after that. His middle child, Peter, met him only twice between the ages of 8 and 23. His daughter Ellen said her mother became withdrawn following the divorce, ‘so I feel as if I have been raised as an orphan.’” (Corbett 2009)

Veeck pulled up stakes, headed first to Arizona, and moved forward in life. He remarried well; had six children, thereafter; and kept himself in the MLB reclamation-of-ball-teams game. However, his next venture in St. Louis, in 1951, failed quickly for the following reasons:

- 1) His promotions were seen as mocking the game (midget Eddie Gaedel) and put him at serious loggerheads with top owners in the AL.
- 2) His competitor changed from low-rent IRS felon Fred Saigh to Gussie Busch, a well-financed beer owner of the ballpark Veeck was sharing.
- 3) Gussie could outspend and out-schmooze Veeck, if he desired.
- 4) The St. Louis Browns were abysmal; forcing Veeck to put up personal assets, and sell off the few good players he had to stay afloat.
- 5) He had misread his fellow owners. While they wanted to expand west, they did not want Veeck to be the first one, or even, an owner at all.

Veeck was out by late 1953, defeated for the first time as an owner of ball team. He bided his time with ownership of the minor league Miami Marlins, spots on TV, scouted for the Indians, work on California baseball, essentially, anything connected the National Pastime. He served this sentence away from ownership, and then, lucked into a stopping grounds opportunity.

Grace Comiskey died and willed the majority of the team not the namesake, and current operational man, Charles Comiskey II, but her daughter, Dorothy Rigney in 1956. A family squabble ensued; and relenting after two years, Mrs. Rigney sold her 54% team stake to Sport Shirt Bill and

a cadre of friends-investors, against a backdrop of legal wrangling going into 1959 season.

Bill again did his renovation plan – promos and gag gifts, sprucing and shining of quote, “a dun-colored roach pit (Dickson 2012, 229)”, personal media prostitution to get interest and the fans back. It worked to a then franchise record of 1.4 million souls at Comiskey Park. Meanwhile, manager Al Lopez pulled the right controls to get the Go-Go Sox in the World Series for the first time since “The Old Roman” stingily ran the team. (Charles Comiskey II was co-general manager in obtaining the talent that finally won that AL Pennant.)

The Sox acquired 1B Ted Kluszewski off waivers, the man of muscles and short sleeves to reflect those obvious talents. While his regular season was mainly about hitting near .300 with little power, “Big Klu” pounded 3 home runs in the 6 games against the Dodgers, hitting .391/.440/.826 with 10 RBIs for the Go-Go Sox.

However, the Sox overall offense crumbled after the game one shelling of LA pitchers Roger Craig and Chuck Churn. Thereafter, the Dodgers’ stalwarts Drysdale, Koufax, Podres, and Larry Sherry did what LA does: outpitch the opposing team and stifles their batters. The series hosted the largest crowd in World Series history in the L.A. Coliseum at 92,706.

Bill did not stay long as White Sox owner, part one, selling to Arthur Allyn Jr. his shares in 1961. Charles Comiskey relinquished control of his controlling interests the following season.

By then, Bill’s health and second family required more attention. He left for Maryland, at the suggestion of Jerold C. Hoffberger, the long-time Orioles owner and National Brewery magnate, turned Veeck on to a large estate in Easton, Maryland. Bill’s weight loss (50 lbs.) landed him at the Mayo Clinic for a spell, to determine if he was fighting a stage of cancer. Luckily, his illness stem from a bad habit, smoking, and resulting coughing fits that induced concussions (Dickson 2012, 248-249).

For Veeck, the time ahead generated a more reflective side. As Ed Linn, a highly-regarded writer, was brought in for a visit. From their similar backstories, vets of WWII, not tie-inclined, and fighting their enemies continually to get ahead (Dickson 2012, 253), the marriage of the energetic and creative men fell into place. *Veeck – as in Wreck* was born; a best seller that older fans craved, and owners duly despised for its realism and all-too-humorous inside baseball looks.

Bill, too, was prescient, “Sometime, somewhere, there will be a club no one really wants. And then Ole Will will come wandering along to laugh some more. Look for me under the arc-lights, boys. I’ll be back” (Dickson 2012, 253). He eventually made good on that promise.

Throughout the 1960s, Bill Veeck stayed active using his bona fides to talk on the sport, commentated on the *Wide World of Sports*, potentially

veying for another MLB franchise (the Senators), and talks of becoming the commissioner (or his friend, Hank Greenberg). Bill took up Civil Rights on his now peg leg; inserted his flair for words into the war in Vietnam; and followed up Veeck with *The Hustler's Handbook*, again, with Ed Linn.

There, Veeck and Linn looked back at the 1919 White Sox scandal and delved into the 1918 World Series. Due to the luck of his Sox ownership, Veeck stumbled upon notebooks by Harry Grabiner that revealed that Eugene Milo Packard may have fixed the 1918 World Series, involving the Cubs and Red Sox. The series had players wanting more of the gate, after game four, their bonus for playing in the series (Dickson 2012, 261-262).

Bill, ever the gambler himself, went into the horseracing business late in 1968 at Suffolk Downs in Boston, Massachusetts. The dilapidated track, said Red Smith, had "the stately charm of an abandoned noodle factory" (Dickson 2012, 267). The track got the million dollar facelift (269), Bill removed barriers, like a barbed-wire fence, to enhance appeal, replaced fake flowers, got the restrooms up to snuff, and still parted a sucker from his money, but with nicer atmosphere to encourage return visits.

It worked, purses increased to record levels, and the holding company made money, and politicians met the ever snarky Veeck – who lobbied to overturn a law concerning minors at the track, saying, "he wanted to start them off young" (Bill Veeck: *Baseball's Greatest Maverick* 2012, 270). His time in horseracing did not end well, as the Realty Equity Corp. put their hands on the cash flows, to the detriment of the operation. Without it, even a cash friendly track, was a bad bet for an investment. Veeck's three years in the paddocks did achieved one final end: *Thirty Tons a Day*, a memoir of horseracing, alluding to the production at the backend of horses.

Veeck's final stint as an MLB owner went back home to Chicago. He was prepared to take over from John Allyn, who got squeezed on payroll and Bill was ready to make good on a decades-long promise. The game though had changed. The cusp of free agency added even more money to the game – and Bill – as good as he was, was to find the new moneyed breed in George Steinbrenner and Gene Autry were not going to get out of his way. Moreover, he had casted barbs at many that still held deciding votes as to who would be a membered class of these elite sports moguls.

Veeck's financial structuring and partners caused concern – a way to get more equity and less debt, and reduce returns, especially to Bill – and, the deal was delayed several times before its consummation.

By the close of the deal in December 1975, the team was left in the lurch – no trades had been made – such that Veeck and his GM Roland Hemond were left to move on trades from the Diplomat Hotel's lobby at the Winter Meetings. Ever the showman, the fun began as Jim Kaat and Mike Buskey were swapped to the Phillies for Alan Bannister, Dick Ruthven, and

Roy Thomas. Ruthven was a Sox player for 2 days. Meanwhile, Veeck sent Roland Hemond out to make calls from a pay phone to keep the action moving. The ruse had its effect, as real calls were incoming – so that Veeck had swapped 22 players, 11 in, 11 out, at the meeting's end (Dickson, 290).

Veeck's moves aside, he came to the MLB party a bit exposed. The Seitz reserve clause decision was decided, upheld, and the owners retaliated with a lockout. Veeck threatened to open the Sox's Sarasota, Florida spring training camp regardless, until threats of suspension and lifting the franchise were made (Dickson, 269). The man long on ideas was now too short on friends and cash to budge his icy owner cohorts. (He found a way to get around the problem with non-roster invitees and minor leaguers not on his 40-man rosters, but just angered fellow owners with that legal maneuver.)



Outside of the legal battles, Veeck made his promo presence known again. He hired Harry Caray; invited fans to tear up the AstroTurf; signed Minnie Minoso again; and staged a beauty contest.

The White Sox were a fun, if uneven bunch for the remainder of the time Bill Veeck owned them. He employed 'rent-a-player'

getting 90 wins in 1977 and the moniker, *Southside Hitmen*; donned Bicentennial outfits, with Bill marching with the peg leg; wore actual shorts on the baseball field, a la softball; scrapped the bottom of the free agent barrel, as money was thin. Disco Demolition turned inferno and blew up, and nearly torched the remainder of Bill's and the Sox reputation on one awful night in July 1979. The creative idea came from Mike Veeck and WLUP disc jockey Steve Dahl – but Bill, the owner, paid the price of its failure.

Veeck held the Sox for five years, longer than any other franchise. He grew more infirmed in the 1980s, as forty years with a disability took its toll. His witty and wise spirit moved into writing columns in his final years. Veeck passed on January 2, 1986, and was inducted into the Hall of Fame in 1991.

3.4. A Franchise Exposé: The Montreal Expos

Their Canadian counterparts and rivals had just won the 1992 and 1993 World Series within fifteen years of their establishment as a franchise, using the 'buy all the high price talent' model. It worked for the time being, as Toronto has struggled ever since. (See Vol. II: Clinton.)

Montreal, meanwhile, went through a quarter century of judicious building to close calls with the best paper talent of any team in the National league, not once, but twice during the Reagan-Thatcher-Mulroney love fest. As Bill James noted in 1984, "The frontline talent was awesome (The Bill James Baseball Abstract 1984)".

The Expos were always close; with players that were *magnifique*. Put those late 1970s and 1980s stars: Carter, Cromartie, Dawson, Parrish, Raines, Wallach, Valentine, Rogers, or Reardon in Cubs uniforms circa 1984, these players (and the Cubs) win a world series without any doubt; at least, that was a youthful viewpoint of the author. All those Montreal teams lacked prior to that defining year for Chicagoans was a 2nd baseman (Sandberg), as James analyzed in the above abstract. The Expos were very good position by position, or very, very bad – as no one remembered who played second for those Expos teams who lived in America; certainly not this author.

Montreal 2B from 1979-1984

Season	Name	GS	AB	H	BB	HR	SB	OBP
1979	Rodney Scott	113	562	134	66	3	39	0.319
	Dave Cash	35	187	60	12	2	7	0.358
1980	Rodney Scott	128	567	127	70	0	63	0.307
	Tony Bernazard	30	183	41	17	5	9	0.289
1981	Rodney Scott	92	336	69	50	0	30	0.308
	Frank Taveras	17	87	14	7	0	4	0.221
1982	Tim Raines	36	647	179	75	4	78	0.353
	Mike Gates	30	121	28	9	0	0	0.280
	Doug Flynn	58	193	47	4	0	0	0.256
1983	Manny Trillo	31	121	32	10	2	0	0.331
	Bryan Little	32	350	91	50	1	4	0.352
	Doug Flynn	100	452	107	19	0	2	0.267
1984	Bryan Little	65	266	65	34	0	2	0.332
	Doug Flynn	78	366	89	12	0	0	0.267

Even Tim Raines, who started out in the minors at the keystone, got some games there, showing their ongoing desperation. Worst yet, after a few years of Doug Flynn, Rodney Scott's numbers were an upgrade, providing speed and some pop to boot. Often it is said, "You are as strong as your weakest link." Montreal had this glaring positional weakness, never quite solved; and exasperated by their never quite filled stadium, thus shorting the owner of cash, return on investment, and through 35 years of

ups and downs, the franchise left town before their stadium was paid off. Not because of 2nd base – but due to the “oh so close” nature that defined Montreal’s overall existence.

The operations people found talent a plenty, supplying a HOF catcher, a HOF centerfielder, decent shortstop, and aces taking the mound. Their shortstop, Chris Speier, was an average hit and glove man acquired by trade. Carter and Dawson were the gold mines at the heart of the offense. Steve Rogers, Bill Gullickson, and Jeff Reardon fronted the staff or closed games. Many teams would dream, as the author did, to have just one of these guys playing for them.

And that leads to the first point: the Expos’ players seemed good anywhere, but never were quite able to do it outside Montreal’s confines.

Year	Home Record	East Record	Overall
1979	56-25	55-35	95-65
1980	51-29	49-41	90-72
1981	38-18	39-23	60-48
1982	40-41	48-42	86-76

First, their stadium played big; and played fast – requiring 3 outfielders who ran well to offset the Astroturf hits and gap plays. Carter controlled the base paths, hit a few homers, called a good game and never shied from the media. The Astroturf carpet meant stolen bases were en vogue; tried a couple of times a night by those speedy outfielders.

But, the Expos, in away confines, were gap power short, stole less, and generated the poor results above and below. Most teams have an “away” problem – even the best ones. BABIP for 1979-81 reflects a problem of not getting the bounces they did at home. Even with more homers away, the lack of guys clogging the bases, reflects a one-trick pony offense when outside the *Big O*. In 1982, the bounces flipped (.286 to .282) and the record did too. Pitching obviously factored, so this represents just one-half of the equation.

Batting Split	BAbip	OPS	OBP	SB	HR	Win %
Away 79	0.284	0.708	0.314	54	75	0.494
Away 80	0.274	0.690	0.310	113	63	0.476
Away 81	0.251	0.647	0.294	57	42	0.423
Away 82	0.286	0.712	0.315	68	74	0.568
Home 79	0.299	0.747	0.325	67	68	0.691
Home 80	0.297	0.737	0.339	124	51	0.638
Home 81	0.276	0.723	0.338	81	39	0.679
Home 82	0.282	0.729	0.334	88	59	0.494

Second point: Management has to accept some blame. With four and five stars, they had to find the next acquisition that gets them over the hump. Sure, the National League was very competitive – Dodgers, Cardinals, and Phillies, all had their stars – but the Dodgers were weakening, and old, lineup wise, from their 1970s infield grouping; Phillies relied too on older free agent talent; Cardinals were the younger and faster bunch with the same stadium elements, but a livelier ballpark. They combated with Ozzie at short, Tommy Herr at second, enough pop in Porter, Lonnie Smith, Willie McGee, and Vince Coleman patrolling, and two or three top arms to defeat even the Expos. The Expos needed that one pitcher or a keystone guy, to make it happen, via trade: a tact they used frequently in their early days.

1979: Pirates. 1980: Phillies. 1981: Dodgers. 1982: Cardinals. Montreal battled them all, but lost the war, even as they won many battles.

The exciting Expos dismantled in the mid-1980s, trading the beloved 'Kid', Gary Carter to the World Series winning '86 Mets late in 1984. Thereafter, Andre Dawson skipped across the border to Chicago, garnering MVP honors for the lovable last place losing Cubs in 1987. (His merit for the award is another conversation.)

Considering those loses, the Expos felt pretty good with their 91-71 record. Yet, even with remaining solid players, Raines and Wallach, and the upcoming big cat, first basemen Andres Galarraga, a resurgent Dennis Martinez, the Expos still struggled to keep fans interested.

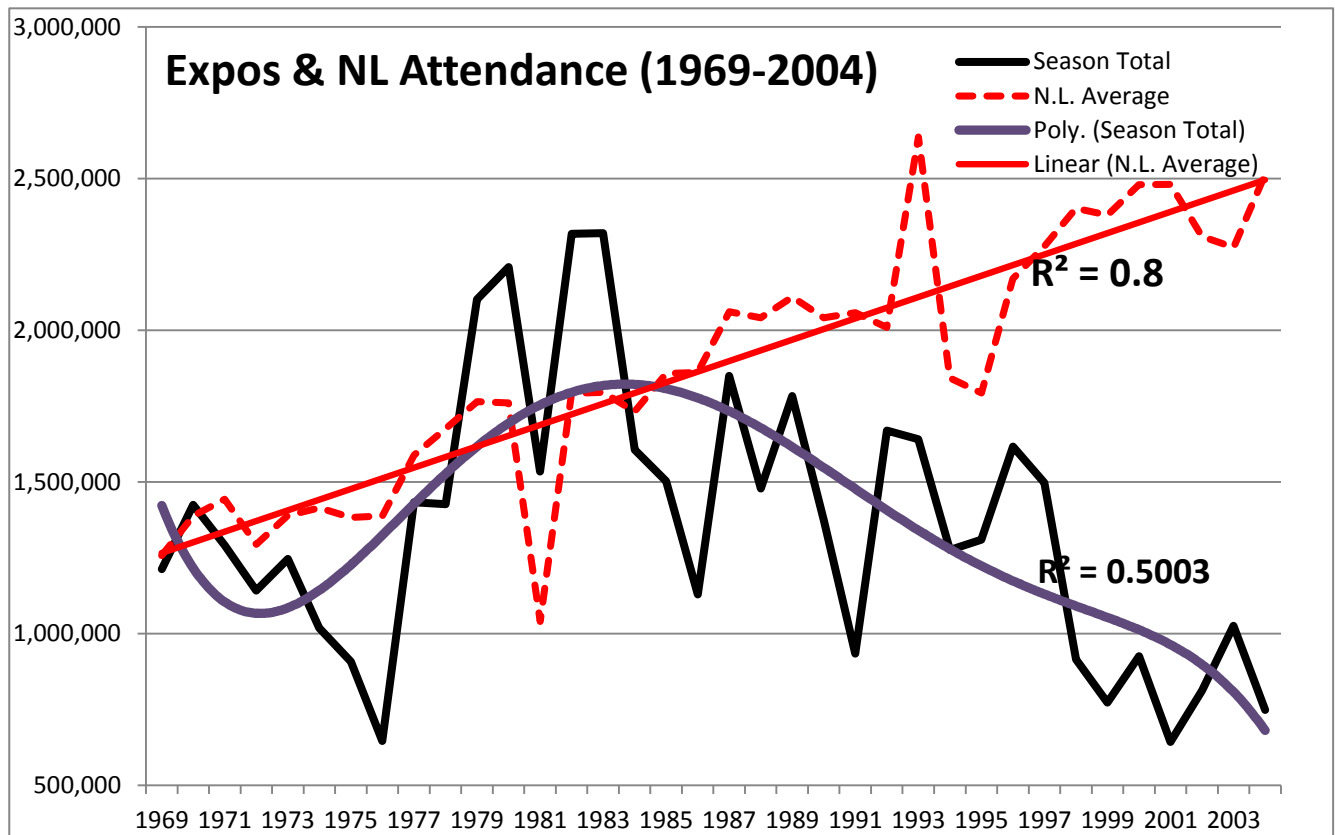
Their systematic franchise problems: 25% ballpark, 25% attendance, and 50% ownership/business management.

Stade Olympique was built to replace the too-long-a-temp-field in *Jerry Park*. The cavernous, and shadowy (affecting hitters), meant a not-ready-for-primetime park. It put fans too far away from the action; designed more for Montreal's hosting of the 1976 Summer Olympics, than its future ill-fated baseball usage. The *Big O* was located too far from downtown, hampering tie-ins to other activities, thus also ruining chances of generating revenues and successes, and firmer public support. (It housed the 110-yard long and wider field for Canadian football's Montreal Alouettes. These dimensions locked in the problems of a more intimate and watchable game.)

The stadium, featuring the first retractable roof, but was both an engineering marvel and nightmare for upkeep, functionality, and safety. As a result, the roof was revamped from initial designs. First, in 1987 with a Kevlar fabric attached to a 26-cable system meant to collapse into the enormous 556-foot tower built, scorpion style, onto the back of the park. But that idea did not pan out. Marty Noble, senior member of the BBWAA, sarcastically described the ballpark's unique appearance as: "the world's largest ashtray (Triumph and Tragedy: The 1994 Montreal Expos 2010)."

Fifteen years after the stadium's opening in 1976, a 55-ton concrete beam fell and crashed on walkway, pushing the 1991 Expos to the road for some home games. Later, in the spring of 1998, a \$26 million opaque blue Teflon coated Fiberglass fabric was hoisted above to solve the continued roof problems. In 2012, another roof collapse, measuring 8x12 meters (The Canadian Press 2012) happened before the stadium's current repurposing for European football by the Montreal Impact – a name that has a measureable bit of irony.

The eight years spent to get a mediocre and dangerous ballpark likely turned off this fringy and frigid-by-climate-alone fan base; undermined the legitimate and successful efforts to put a quality product on the field. The Expos were stung by their architectural hubris, spending \$1 billion on this marvel (Building Big: Olympic Stadium 2001). Thereafter, even while Montreal drafted well, put contenders on the field, no one came to the games consistently enough to prove this was *actually* happening. (See: Attendance in Montreal graph below.)



(Graph Analysis: By 1984, the Expos reached their peak predicted attendance, as their first dominate run ended in the National League. By 1994, it was all downhill, worse than the inception period (1969-1976). The NL had robust growth of attendees (even counting in Montreal) reflecting a business model truly going south in Canada.)

Ownership. While the Montreal Royals were a very successful minor league affiliate of the Dodgers (Jackie Robinson's first stop) and seven time winner of the Governor's Cup (1958 against Toronto), Walter O'Malley cut ties for efficient business reasons in 1961, transferring the affiliation to the Minnesota Twins. The minor Dodgers headed out west to Spokane, Washington. Thus, cutting costs to their far flung operations, in operating the AAA affiliate closer to LA, but leaving Montreal's hopes in the lurch. The Royals were moved to Syracuse, ending baseball in Montreal for a foreseeable future just as international air travel became sustainable.

In 1968, the Montreal English-speaking community leaders, Gerry Snyder among them, talked MLB club owners into granting a franchise for 1969. (Walter O'Malley chaired the NL expansion committee.) After some balking from interested parties (sans cash), the ownership fell to future billionaire of Seagram's distilling empire: Charles Bronfman.

With the approval, the battle against cold springs and summers of Montreal started, making it a necessity to build an enclosed park. Temporary digs were limited; or unapproved by MLB; so a haphazardly modified *Parc Jarry* handled the supposed short-term stay of three years. Eight seasons instead elapsed. '76 Olympics planning and venue builds superseded any MLB importance. Fans suffered most on frigid fall night games and lingering cold in spring, a persevering bunch the Canadians are. Attendance at Jarry Park showed a nascent franchise's typical woes: poor records, if exciting prospects for the future, hampered by an unforgiving atmosphere for watching baseball. The final opening of Olympic Stadium did not rev up attendance, taking two more seasons before eclipsing 2 million visitors.

Yet, by then, the team's scouting and development department acquired a sizeable amount of talent to neutralize park woes, and for a decade, the French salad days were both magnificent and heartbreaking.

Succès Exécutif D'équipe (Executive Team Success)

In 1969, Jim Fanning, took the reins as general manager for the new Expos. Fanning, a recent farm director of the Atlanta Braves in 1967 (Baseball America: Executive Database 2013) took on the enormous task of building a franchise from scratch.

Born in 1927, Jim grew up in Iowa, listening to the Cards. He served in post-World War II Germany, got out, and obtained a physical education degree by 1951. He loved baseball enough to take a tour of duty in the minors, signing with the Chicago Cubs in October 1949 (Sports Reference, LLC. 2013). Starting in 1950, Fanning played for 8 teams from 1950 through 1952. By 1954, he elevated up the moribund Chicago Cubs, getting cups of coffee there while Ernie Banks terrorized the National League. Fanning's MLB career triple slash: .170/.209/.184 in 149 plate appearances over four inglorious seasons bespoke that of AAAA player better suited for talent analysis than personal stardom.

As a decent field/no hit-no walk catcher, Fanning found a reliable enough travel plan in the minors, player-managing in 1958 for the Tulsa Oilers at AA, Dallas AAA in 1959 and 1960, and Eau Claire's C league in 1961. He left the Cubs behind, moving on to Kansas City A's, then the Milwaukee Braves organizations. Thus, he followed a well-worn path of the washout minor/major leaguers: play, player-manage, scout, run the farm, to eventual big league manager/executive.

Fanning's last stop in Eau Claire launched a quarter century working relationship with John McHale (King, Jim Fanning 2013). Fanning's already versatile resume grew from continued management of young talent, evaluating players, to creating the MLB scouting bureau in 1968, thus allowing him to acquire skills in a wide array of operations. All garnered from a post-secondary education to early travelling experiences abroad and through the minors.

His new friend, first basemen John McHale played for the Detroit Tigers, getting three at-bats on the 1945 world championship team. He was Midwesterner, like Fanning, born into a Catholic family in Detroit, Michigan in 1921 (Costello 2013). He attended Notre Dame, played center and defensive tackle in reserve for the mighty Irish football team that shutout Army 7-0 in Yankee Stadium, a place soon visited as a ballplayer.

McHale was signed by famous Detroit scout Aloysius "Wish" Egan, who expertly played the future economics degree holder, "the best time to approach a college boy on a bonus deal is right before Christmas when he needs the money (Costello 2013)" reflecting scouts were smarter than their farm boy/city dweller prospects; knew what motivated, and when.

McHale, enlisted into officer training, via the V-7 program, attended Abbott Hall at Northwestern University, while technically contracted to the Tigers. He got into a few games in 1943; then suffered a perforated ulcer than nearly resulted in death. He spent 3 months laid up in the hospital, losing his commission as an ensign, and received his medical discharge from service (Costello 2013).

McHale's executive career began earlier than Fanning's, in the 1950s, with the Tigers organization. He apprenticed as a farm director, then minor league operations, before elevation to assistant general manager with the Tigers by 1957 (Executive Database: John McHale 2013).

During those years in Detroit, talents such as Al Kaline, Harvey Kuenn, Frank House, Frank Bolling, Jim Bunning, Billy Hoelt, Frank Lary were signed and developed, but the results were counterpointed against the Yankee dynastic heyday. He swapped out nearly 60 players in two years; matched by now AL cohort Frank "Trader" Lane in the propensity to swap any man in an instant. (Remember: Economics major.)

McHale's hiring to oversee the Milwaukee Braves as GM and club president in 1959 after their back-to-back pennants must have excited. Not having to run the now perpetually bad operations in Chicago or Washington,

meant he landed at the apex of franchises. For seven years, John had the mature talent on the field, but never the prospects to come behind them. Trades and development only really produced one star: Joe Torre. Owner Lou Perini made the decision to move again the franchise to Atlanta, creating more difficulties to operations while the once plumb job, withered. By the time of the move, McHale was succeeded by former Orioles and Astros GM Paul Richards (Executive Database: Paul Richards 2013), who took over baseball operations for the now struggling-to-contend Braves.

With a stint in the commissioner's office, the close ties to Fanning grew stronger. McHale interviewed for the GM position in Montreal and got it. With the job, he invested in the Montreal adventure, gaining the CEO title and president of the organization. Thereafter, he hired his friend Fanning, and Gene Mauch, to manage the Expos, just 100 years removed from the first professional teams in America. For scouting, McHale & company hired Mel Didier as scouting director. This brain trust worked well in the decade ahead.

Before the Expos even played a game, Fanning targeted well his 1st franchise player: 25-year old right fielder Rusty Staub in Houston. But the trade turned on returning Jesus Alou and Donn Clendenon, both selected in the October 1968 expansion draft. Clendenon though threatened retirement. By April 1969, Clendenon's threats changed the trade to Jack Billingham and Skip Guinn to send south to Houston. Clendenon left town later on in another swap; joined the 1969 Mets for their first victory party garnering the World Series MVP accolade.

Meanwhile, Staub's racked up his best career numbers, spanning 23 seasons: smacking 29 homers, with a .302/.426/.526 slash line. A three year stay, in his peak, and a return in 1979, gave him the majority of his lifetime WAR (17.3 of 50.5 totaled). The moniker *Le Grand Orange* stuck. He provided Montreal's initial "draw", along with Mack Jones, Bill Stoneman, and Elroy Face during the latter's final season.

The field management of Expos fell to Gene Mauch, the volatile skipper who was the Phillies manager for nearly a decade. He got the blame for the Phillies 1964 collapse and ended a dream season. So Mauch took on the unenviable task of honing rookies and the castoffs from other teams into a competitor. Which, by 1973 the Expos were nearly a .500 club, a substantial feat in a bad ballpark. That year Montreal stayed in the pennant race until late September due partly to Fanning's trade acumen, but not without immediate reversals.

Fanning flipped Staub, at 27, for Ken Singleton, Tim Foli, and Mike Jorgenson. Staub's career in New York never produced as his time in Montreal did. LF Singleton had substantial value in his three seasons as an Expo (9.3 WAR); 1B Jorgenson played six seasons, 1974 and 1975 close to all-star levels (9.3 WAR); and SS Tim Foli handled the keystone for six seasons with various levels of success (2.8 WAR) from Staub's remaining

WAR of 13.8, a 7.8 WAR differential came from that trade. SS Foli landed Chris Speier from San Francisco to further reflect the importance of this move.

By the same token, Fanning sent out Mike Marshall, the record holder for most appearances by a pitcher, to obtain 34-year old CF Willie Davis to supplant a 4-headed carousel in center. Fanning had flipped CF Don Bosch to acquire Marshall, a steal of a deal done in 1970. So while Marshall had performed well in Montreal, Fanning decided he had enough bullpen in 1974 for the team to succeed.

It happened that Marshall went to Los Angeles where Alston had no problem abusing pitchers to achieve results. Marshall won the Cy Young award, but peaked, performance wise, at 31 years old. Fanning swapped 1B Singleton and SP Mike Torrez to obtain lefty pitching, but got burned by the mid-season retirement of Dave McNally of Seitz decision fame. Such is the reality of trades: win some, and lose some. The bad moves hurt much more than the satisfying good ones; and people tend to remember mistakes over obvious successes.

By 1975, the trading cycle could only take the Expos so far. The draft ran by McHale, Fanning, and Didier produced their best teams yet.



A Typical Situation: Le Stade Olympique de Montréal near empty (Wikipedia)

The best 2nd place team in baseball. The 1979 Montreal Expos commanded the old NL East for over two months, only to fall short to the *We Are Family* world champion Pirates by 2 games. In 1980, Expos were edged by 1 game as the Phillies were winners of it all in 1980. They were still primed to win – average batting age of 27.2 years old - and so, 1981 was destined as their last chance. The Expos had amassed numerous talents

from the trading described and in the early days of free agency. But their best players lay within the talent drafted throughout the 1970s.

Ace RHP Steve Rogers came through the 2nd phase June draft of 1971. He played his entire career as an Expo, garnering 158 wins, the franchise record. He links to Montreal's closest taste of glory, dashed in one pitch to Rick Monday of the Dodgers, an oft nemesis, of those Montreal teams. Rogers, was a late success to baseball, making his high school team as a junior. He vaulted to the top of high school heap, pitching to the semi-finals of the Missouri state tournament, losing to future Dodger ace, Jerry Reuss (King 2012).

Roger's talent grew, carried him to University of Tulsa, a college World Series appearance, and an undergrad in petroleum engineering. Despite those unique enough successes, coming to the wellspring in Montreal meant the field soon filled with slippery patches and oil-water relationships.

He landed on the Winnipeg Whips in the minors, a team smoked to a 44-96 record in his first season of pro ball (King 2012). Another year of beatings, this time in Virginia, and Rogers's record did not reflect readiness for the bigs. But, that changed in 1973 when his number was dialed up. It was time to bring his gas to the show.

Rogers put up numbers of both a seasoned veteran, and a rookie. His 1973 rookie year was phenomenal: 1.54 ERA and 10 wins (5.1 WAR) against 5 losses for a surprising 79-83 Expos team. In 1974, he came back to reality, going 15-22, but pitched 253.2 innings in 38 starts at just 24 years old. For the next decade, Rogers toed the rubber every 4th/5th day, and Montreal had their clubhouse leader and staff ace.

Most Wins by Pitchers of the Montreal Expos

Pitcher	Wins	IP	ERA	G	GS	CG	IP/Start*	CG %
Steve Rogers	158	2837.7	3.17	399	393	129	7.20	32.8%
Dennis Martinez	100	1609.0	3.06	239	233	41	6.87	17.6%
Bryn Smith	81	1400.3	3.28	284	193	20	6.64	10.4%
Bill Gullickson	72	1186.3	3.44	176	170	31	6.93	18.2%
Steve Renko	68	1359.3	3.90	238	192	40	6.77	20.8%
Javier Vazquez	64	1229.3	4.16	192	191	16	6.43	8.4%
Jeff Fassero	58	850.0	3.20	262	100	8	6.39	8.0%
Scott Sanderson	56	883.0	3.33	149	136	24	6.37	17.6%
Charlie lea	55	793.3	3.32	128	121	22	6.48	18.2%
Pedro Martinez	55	797.3	3.06	118	117	20	6.80	17.1%
Woodie Fryman	51	721.7	3.24	297	69	15	6.16	21.7%
Bill Stoneman	<u>51</u>	<u>1085.3</u>	<u>3.98</u>	<u>186</u>	<u>157</u>	<u>46</u>	<u>6.67</u>	<u>29.3%</u>
Averages	72	1229.4	3.43	222	173	34	6.6	18.3%

*Approximated by reducing IP by 1.3 IP bullpen appearances

Ellis Valentine (2nd, 29th overall) and Gary Carter (3rd round, 53 overall) were in the class of 1972. Both drafted as catchers, Ellis sported the better arm, and tools, but Gary, made the better career. Ellis Valentine

nevertheless was as talented as any player in baseball. Drafted out of Crenshaw High in Los Angeles, he rocketed up to the Expos by late 1975. Ellis exhibited all the tools scouts drool over: above average speed, raw power, hitting ability, fielding prowess, and of course, a powerful arm. The last one was his calling card throughout his career: able to throw out guys with absolute tracers to the bags. He made fools of many a base runner throughout the league.

Ellis, with a pork chop beard, a medium-sized fro, that complemented his 6'4" lanky build, generated substantial baseball power through Earl Campbell-like thighs. These stood out as did his buggy whip swing at-bat. By 22, he was a star for the Expos. Bob Dunn once called him, "The complete player" (Dunn 1977).

But even with Ellis's talent, at the dawn of free agency, the Expos did think about going for broke: adding Reggie Jackson to their outfield. Unsure their fledgling group would mesh, dominate the National League, and appeal to fans, Jackson tempted sorely. Bob Dunn wrote for *Sports Illustrated* in August 1977:

"Anxious for a big-time star to lure disenchanting Quebecers to their new ball park, last winter the Montreal Expos offered free agent Reggie Jackson some \$3.5 million to play right field in Olympic Stadium for the next five years. They invited Jackson to Montreal for a visit one cold weekend, and wined and dined him at the city's most elegant French restaurants, but Jackson said non, merci.

'Don't worry,' the Expos consoled their fans, 'we'll have an outfield of Valentine, Dawson and Cromartie.' Try selling Valentine, Dawson and Cromartie to fans already turned off by the Expos' penchant for trading away such quality players as Rusty Staub, Mike Torrez and Ken Singleton. 'Let's hope the Stanley Cup playoffs never end,' said one disgruntled Montrealer. 'That way we won't have to watch the Expos at all.'" (A Bargain, And Bye-bye Basement: For \$85,000 Montreal got an exciting outfield and at last the Expos aren't last 1977)

Valentine made just \$35,000 that year, roughly \$125,000 in 2014 U.S. currency, or just 2.5-2.6 times the average per capita income of Americans, at present. During his lone appearance at the 1977 all-star game, Ellis, Dave Parker, Reggie Smith, and Dave Winfield put on a pre-game throwing clinic, showing off, as they could. Felipe Alou, then Montreal hitting coach, reflected to Jeff Pearlman at *Sports Illustrated*, "There's a plateau where you can't throw the ball any harder and you can't be any more accurate...That was Ellis Valentine (Pearlman 2001)."

In 1980, Ellis was hit by a pitch thrown by Cardinals journeyman pitcher Roy Thomas. The injury broke his cheekbone in six places. After his recovery, Ellis employed a half-cut football face guard to protect his jaw and cheek area. But by the end of 1980, with various injuries to his face, hip, hand, and wrist, he was sidelined during the Expos last gasp at the pennant.

It was his last full season as an Expo at only 25 years old. Ellis hit the last home run at Jarry Park and first one at Olympic Stadium. His nova-like career ended at 30 for the Texas Rangers. He now works as a behavioral health counselor and instructs youngsters in baseball training. He has posted several videos on *Youtube* instructing youth ball players on how it's done.

Contemporaries of Gary Carter at Catcher (WAR)

Season	Gary Carter	Carlton Fisk	Darrell Porter	Bob Boone	Jim Sundberg	Johnny Bench	Thurman Munson
1968						5	
1969						6.1	0.3
1970						7.5	5.5
1971		0.6				4.1	4.1
1972		7.3	-0.4	0.1		8.6	3.5
1973		3.9	3.6	2.1		4.7	7.2
1974	0.5	2.8	3.3	-0.5	4	7.8	3
1975	3.3	3.1	3.7	1.1	1.6	6.6	6.6
1976	1.3	4.2	0.3	1.9	2.9	4.6	5.2
1977	5.3	7	2.5	2.1	5	5	4.9
1978	5.7	5.9	4.2	3.6	5.3	4.5	3.2
1979	5.9	0.8	7.6	3.4	3.2	5.6	2.4
1980	6.5	3.9	2.4	0.3	3.6	3.3	
1981	3.8	2.8	1.5	-1.2	4	1.1	
1982	8.6	3.3	2.7	3.5	3.4	0	
1983	7.1	4.3	3.9	1.8	0.5	1.1	
1984	7.4	1.5	1.6	-0.9	3.2		
1985	6.9	3.3	2	1.8	1		
1986	3.5	-1.7	0.8	1.7	1.1		
1987	1	3.1	0.6	1.1	0		
1988	0	2.6		3.2	1		
1989	-0.3	3.3		2.4	0.6		
1990	1.8	4.9		0			
1991	1.2	1.9					
1992	0.1	0.4					
St. Dev. (Overall)	2.85	2.07	1.87	1.45	1.64	2.37	1.89
St. Dev. (Peak)	1.50	1.99	1.70	1.44	1.31	1.52	1.51
Total WAR	69.6	68.6	40.3	27.5	40.4	75.6	45.9
All Star (5 WAR)	8	2	1	0	1	8	5
Very Productive (2+)	11	15	9	7	8	13	10

The 1970s was a great decade for catching talent (as seen above). The faces behind the mask most years were usually rather unsung grinders, but with Fisk, Bench, and Munson, the guys behind the plate were now stars, thanks, in part, to TV's evolving sports empire. The 1975 World Series put

Fisk's mug on the map outside of Beantown. Bench, the machine gun arm, the power, the aw-chucks country charm, merited all the credit received in carbureting Sparky's engine to two titles. Thurman, was less cute, more blunt, and nicknamed Tugboat, or 'The Walrus', maybe because of a Beatles-like 'goo goo g'joob' mustache. New Yorkers, in the '70s, were a rough bunch (if not from *Wall Street*) and loved Munson's backbone and chutzpa towards Reggie in those first championships won on the cusp of free agency.

North of the NYC, Gary Edmund Carter became the media superstar of the Expos, as Prime Minister Pierre Trudeau joked Gary was more popular, and more electable. Carter was another Cali guy, with golden curly locks, a warm, alluring smile that teenage girls and educated women could dream he would hold their doors; and give up their digits to for a nightcap. Carter's camera-friendly face impacted nicely the Expos' gate as the 1970s evolved into the decade of the backstop from the States into the Quebec province.

Born in 1954, Carter's father, Jim, worked for a time at Hughes Aircraft Company, the tech-growth industry then in Cali. Gary's life started out typical suburban middle class. He, and his brother, Gordon, naturally excelled at all types of sports. Gary won the fledgling NFL punt-pass-n-kick contest at the LA Coliseum in 1961. Older brother Gordon garnered a minor league looksy from the Angels. But, the Carter boys lost their mother, Inge, a top swimmer in her early days, to leukemia at just 37 (Costello 2012). Gary was just 12.

From the loss, Jim took on more responsibility, as did both boys. Gary did not disappoint, becoming a 3-sport star in Fullerton, California, National Honor Society member, and chased by a 100 college scholarships looking for their next QB star, including the UCLA Bruins. By happenstance, a knee injury in his senior year pushed Gary towards a career in baseball over football fame. (Irony: being his knees would be strained most as a catcher.)

His natural athleticism appealed as Montreal kept their plans to draft quiet: "But scout Bob Zuk, special assignment scout Bobby Mattick, and farm director Mel Didier looked at the ruggedly built teenager (6-feet-2, 205 pounds) and envisaged him behind the plate. Zuk also craftily downplayed his interest in Carter, which enabled Montreal to draft him earlier than other teams expected (Costello 2012)."

Carter rapidly ascended the minors, getting to double AA at 19, AAA at 20, never hitting for high average (.250-.260), but displaying an eye (.350OBP) and good power (15-25 HRs) in the pitcher-friendly International League parks. Even as his personality was outwardly positive, and a bit grating (see below), Gary waivered on his beliefs in a spiritual power that does no harm. As Rory Costello quoted his daughter Christy, "[Expo John] Boccabella's personal influence on Carter was even stronger. The veteran was a man of deep religious faith who attended Mass daily and had led Sunday services for the Expos. Carter, who had lost his faith after his

mother died, found it again. As his daughter Christy recalled in 2013, 'John Boccabella led Dad to Christ and he accepted Jesus in his heart.'" Carter harnessed forgiveness in light of the loss of his mother; and later, Carter read up on UCLA legend John Wooden's insights into life, practice, and achieving lasting success. Both must have worked their magic on Carter.

In late 1974, Gary was called up to Montreal. His first big league homer came off Steve Carlton on September 28, 1974 as he victimized the HOF lefty 11 times total in his career, more than double anyone else. (The Kid enjoyed lefty starters: Jerry Reuss (4), John Candelaria (5), and Dave Dravecky (4) can all attest to that fact. (His OBP and SLG averages were 30-40 points higher against southpaws. He feasted on the Cubs (41 HR, .477SLG) and Phillies (45, .501), playing out of the "old" NL East.)

After three productive, if learning curve seasons, one spent in right field, Carter was operating as both defensive stopper and the offensive backbone – the team had an identity; and a face of the franchise by 1978. Jonah Keri, author of the best-selling Montreal Expos biography, *Up, Up, and Away*, wrote this about Carter:

"Gary was always available to the fans,' recalled Marcia Schnaar, an administrative assistant who was hired in the Expos' inaugural year and stayed until the last day, 35 years later. His agent told him, 'These are the people who pay your salary; be there for them.' But I didn't see it as forced. It was genuine. He enjoyed talking to people. Especially all the little boys and girls who came to see him.

Those encounters stuck with his admirers. With team employees, too. Soon after Carter broke into the majors, he [struck up a friendship with batboy Daniel Plamondon](#), Carter helping Plamondon with his homework, Plamondon teaching a receptive Carter the basics of spoken and written French.

Years later, Scott Abramovitch got to know Carter briefly, serving as a batboy himself during the '92 season, Carter's comeback year in Montreal.

'Here's what blew my mind,' Abramovitch recalled. 'I see him again five years later. He remembered my name. He remembered my family. He wanted to know everything. That's the kind of guy he is. People talk about someone like Bill Clinton, the charisma he had, the way he used to connect with people. Carter had that same ability.'" (Keri, *Farewell to the Kid* 2012)

Carter's amiability, while real and remembered, did not always endear him to teammates, or others. His overtly 'Cali' or positive nature was not seen as natural by the boys. Keri continued, quoting an old interview given by Andre Dawson, "He knows how to promote himself. He knows how to sell himself (Keri, *Farewell to the Kid* 2012)." Cardinals and Mets star and current Mets broadcaster, Keith Hernandez, reiterated the take on Carter: "'We all disliked Gary when we played against him,' Keith Hernandez told *The New York Times*. 'He was just a little rah-rah varsity collegiate type,

even though he didn't go to college. But I respected him as a player. And when he came to New York, I appreciated him, too.' "

From 1977 to 1985, only Mike Schmidt generated greater WAR (65.2) in all of MLB. The Expos best beyond Carter: Andre Dawson (8th - 42), Tim Lincecum (38th - 26.4) fWAR for hitters, and Rogers clocking (5th -34.1) for pitchers behind the legends Carlton, Guidry, Ryan, and Blyleven. (Rogers gets forgotten in the top pitching conversation because of when (and where) he played, much like Blyleven did, until the latter's hall of fame nod.)

Gary's statistics across the board, and abilities on both sides of the ball – defense tops – made him an elite package. Again from Rory Costello:

"Carter remained one of the best in the game at stopping enemy runners. From 1974 through 1976, he threw out 49% of would-be base stealers (49 of 99). That ratio remained at 40% from 1977 through 1984 (481 of 1189). Larry Bowa, who stole over 300 bases in the majors, offered extra insight in 2003. 'This guy put a little fear in you when you were on first base even if you got a good jump...A lot of catchers were on ego trips, they didn't want you to steal, so they would call just fastballs...I respect Gary Carter because he would call breaking balls. He was not intimidated by any base stealer. He would call his game.'" (Costello 2012)

Carter received hall of fame honors in 2003; stayed connected to the Montreal franchise in their unsuccessful bid for a new park: Labatt Park (pictured below in mock up). His lasting on-field glory came as a Met in 1986 – succeeding where many of his Montreal brethren did not. He started a foundation to help at-need and autistic children in Florida. Carter would succumb to an aggressive form of brain cancer in 2012 at just 57 years old. He will be always known as 'Kid' to those who watched him play – opponent or not.

Labatt Park: The concept in 2000 that new owner and art expert Jeffrey Loria attempted to sell. Montreal said *non merci*. (Okunowski 2012)



Class of 1973, RHP Jeff Reardon came in as the 527th player selected, but did not sign with the Expos. Instead, he was landed via trade to Montreal for Ellis Valentine in 1981. Reardon immediately paid dividends for the Expos, becoming their closer for the next five plus seasons.

Reardon earned the nickname *The Terminator*, like Arnold, from his assured defeat of rallies compiling more saves (367) than walks (358) in 880 games. Reardon, Massachusetts born and bred, developed through the Mets minor leagues, moved into middle relief, before trekking to Montreal.

After those successes north of the border, Jeff got traded just south to Minnesota in February 1987. Again, an Expo put on a World Series ring, closing out game seven against the Cardinals: the pinnacle of his career.

Reardon was struck by personal tragedy in 2004 with the death of his son, Shane, to an overdose. Reardon's grief, spiraled to depression and medications, then, coupled with his own health problems, a heart stent for blocked arteries. The day after Christmas 2005, he was arrested while in a drug-induced fog that precipitated an attempted armed robbery, without a gun. In the end, Reardon was acquitted of all charges (Weinbaum 2006).

SS Gary Roenicke, 8th overall pick in 1973, made it to the majors by 1976. He was traded in a 3-for-3 deal to the Baltimore Orioles, garnering back SP Rudy May and SP Bryn Smith. SP Rudy May helped the 1979 Montreal Expos before ending his career, and, in Smith's case, his value came in the midst of the Reagan administration for the Expos. Roenicke plied together several good seasons for the Orioles, and Don Stanhouse, a utility player, with both teams swapping substantial value in the trade.

OF Warren Cromartie's skills graded well as the 1st round-5th pick in 1973 2nd phase June draft after he had rejected the Padres and A's first round drafting. While talented, he struggled to stick in the majors, after being rushed up too quickly, as his speed and fielding were way ahead of his batting skills. Likely as not, his insertion into lineups provided fans something to watch. (Montreal development plan brought up young speedy OFs to the bigs for the attraction as much as their talents. They did succeed a great deal in grooming players in just a 2-3 year development phase.)

Cromartie started out playing for the Quebec Carnavales with his 1979 Montreal teammates Larry Parrish and Ellis Valentine. After a brutal 1975 MLB September call-up, Cromartie went back to Denver Bears next year, getting a great taste of elite baseball, as the Bears dominated at 86-50. The Bears won the 1976, 1977, and 1981 American Association titles. (As soon-to-be-Cardinals manager Vern Rapp, at 48, got 1 base hit for the Bears, achieving a-hit-in-four-decades feat.)

Andre Dawson, drafted in the 11th round in 1975, pounded minor league pitching to a .339/.396/1.001 sabermetric dream. Five tools – lethal CF arm, fleet a foot for a 6'3" man, a brutal bat masher with a nice glove –

got to the majors barely a year after the draft. He anchored the Montreal outfield for a decade; moved later to Wrigley for health (knee) reasons.

LHP Dan Schatzeder came out of Denver, Colorado, the Expos American Association Affiliate, achieved ten wins for the 1979 Expos at only 24 years old. He was landed in 1976 in the 3rd round of the June Draft.

With the new, and soon-to-be troubling stadium (called a "white elephant" (Costello 2013)), a horrible 1976 season record, luck shone brightly on the Expos for their June '77 draft. They landed their biggest haul to date: Bill Gullickson (2nd overall), Tim Lincecum (5th round), and Scott Sanderson (3rd) all contributed very soon to the Expo success template.

Both Dawson and Cromartie go 1-2 in *The Sporting News* rookie of the year voting by players in 1977. Buttressing this talent with the aforementioned Ellis Valentine, who made Dawson's arm look average, the Expos had 23 year old players with upside aplenty across their outfield.

To manage this bunch, Dick Williams, a successful but extremely hard-to-play-for manager came onboard. Williams reflected old school in the way a Justin Beiber (who's that now?) represents a flaky, here-today-gone-tomorrow mentality had in the 21st century. Dick's way was one part successful, but also two parts divisive. People skills were never Williams's strong suit, but winning typically was in his short stops.

Williams rode Cromartie hard, converted him to a 1st baseman (because speed demon Ron LeFlore was brought to town in 1980), but got plenty from 'Cro', as, a candy bar was known in Montreal. Williams clashed constantly with Steve Rogers, the team's player representative, and the heartbeat on the mound. When in rhythm, Rogers was wonderful to watch. But batting, was another story, as Williams recounted Rogers bonehead batting mistake in *No More Mr. Nice Guy*. Rogers took the blame, but it went deeper than that in Montreal.

Williams badmouthed his ace, typical, sarcastic reverse psychology, tell him *he's bad, he'll pitch good because he's now mad* stuff. But, Rogers was not a fool – engineering degree – and Dick's ad hominem attacks just made matters worse. Respect – top down leadership skills – lacked, even as other pitchers thought Rogers was a bit too dramatic while on the mound, but ignored his obvious results.

Williams was shown the door quickly again. Field management for parts of three seasons fell to Jim Fanning, who was never successful in his prior stints as a minor league skipper. Meanwhile, player-management strife of the 1970s spilled over to the 1980s: an omen of things to come.

During the 1981 strike shorten season, Steve Rogers, Bob Boone, Doug DeCinces, and Phil Garner represented the players. John McHale was the deciding vote on the split-season that assisted Montreal to its only playoff appearance. (Steve Rogers now: Serving as special assistant to the

MLBPA executive director, Michael Weiner (who recently died of brain cancer); tasked with fiduciary responsibilities of dues and benefit plans.)

Once the season resumed, the Expos overcame the prior two seasons curse, getting to the playoffs based on their 2nd half record of 30-23 in edging out the Cardinals by a ½ game. They first battled the veteran Phillies, winning the series 3-2 behind 17 2/3 innings in two starts from Rogers who defeated Steve Carlton twice, 3-1, 3-0. Gary Carter, Andre Dawson and Chris Speier provided most of the series offense, Carter 2 homers, Dawson six hits, Speier scoring 4 runs with 3 RBIs. Rogers got two RBIs to help his cause before going on to Dodger Stadium.

In the NLCS series, the Expos were defeated by the Los Angeles Dodgers, 3-2. After Ray Burris had dueled Fernando Valenzuela for eight innings in game five, Steve Rogers toed the rubber in the 9th inning on two days rest on a crisp Montreal day with 36,491 attending (Retrosheet.org 2013). Rogers retired Steve Garvey and Ron Cey, keeping the 1-1 tie. Rogers then gave up the home run to Rick 'Red White and Blue' Monday on a belt-high, down Broadway fastball. The Expos threatened in the ninth, so Fernando was pulled for Bob Welch, who retired the Expos playoff run on a Jerry White ground out to second baseman Davey Lopes. This last playoff game was the closest of the series, at 2-1, and so it stung the most. This Expos heartbreak was to be their playoff last.

Thereafter, John McHale's management problems only grew as player's cocaine use, Tim Raines, for one, made for poor performance and bad headlines. "We felt we should've won in '82. When we all woke up to what was going on, we found there were at least eight players on our club who were into this thing. There's no question in my mind and Jim Fanning's mind -- he was managing the club that year -- that cost us a chance to win (Chass and Goodwin 1985)".

Attendance stagnated in Montreal's expensive and unappealing ball yard. The Canadian dollar fluctuations, high rents and maintenance costs made the stadium an expensive non-performing acquisition they could not just trade away. The artificial turf, as is now known from research, was dangerous and destroying the very players they valued the most, most noticeably mentioned: Andre Dawson.

Adding to theses costly woes, Montreal drafts that had landed good talent almost yearly, did dry up for a spell. Charlie Lea and Tim Wallach rounded out the last of healthy draft supply, as the flow came to a trickle for several seasons. Only Andrés Galarraga signed as an amateur free agent in 1979 at 18 came on strong, but only much later. The draft stars were gone until the next front office took over.

In 1981, Montreal selected, but did not sign: 18-year old Mark McGwire.

In the end, McHale and Fanning gave nearly twenty years to the Expos, working with poor and then overrated facilities, tight budgets, on-field managers that players collided with, off-field labor disputes, and personal foibles that robbed them of success and taxed their minds until both left baseball operations by 1986. In 1990, the team was sold by owner Bronfman to a 12-member consortium. McHale and Fanning were not perfect operators of the franchise, but they left a legacy to the idea that good Canadian baseball is achievable with skill and pluck.

1981 Montreal Expos: Pieces of You

The Epic 1981 NLCS Series (**Clockwise**: The Scorpion Tower; Fated Pitch to Rick Monday by Steve Rogers; Monday Celebrates; Dawson Despairs.)



Moneyball 1.0 in Montreal?

Enter Dave Dombrowski and Dan Duquette. Dombrowski was a wunderkind working for Bill Veeck's Sox operation in the late 1970s. By 25, Dombrowski was the Sox farm director. Assistant GM at 26, as young as the talent he was responsible for evaluating daily. With a 1983 playoff run by White Sox due to recently drafted and fielded talent, Dombrowski was destined for high demand in the baseball business over the next thirty years.

At 30, in 1986, Dave moved to the Expos for the next challenge: farm director to VP, head of player personnel in just 3 years under new club president Claude Brochu. Dan Duquette, two years younger, was another sharp analytical mind ready to turn the Canadian ship around. In 1988, Duquette was named the Expos director of player development.

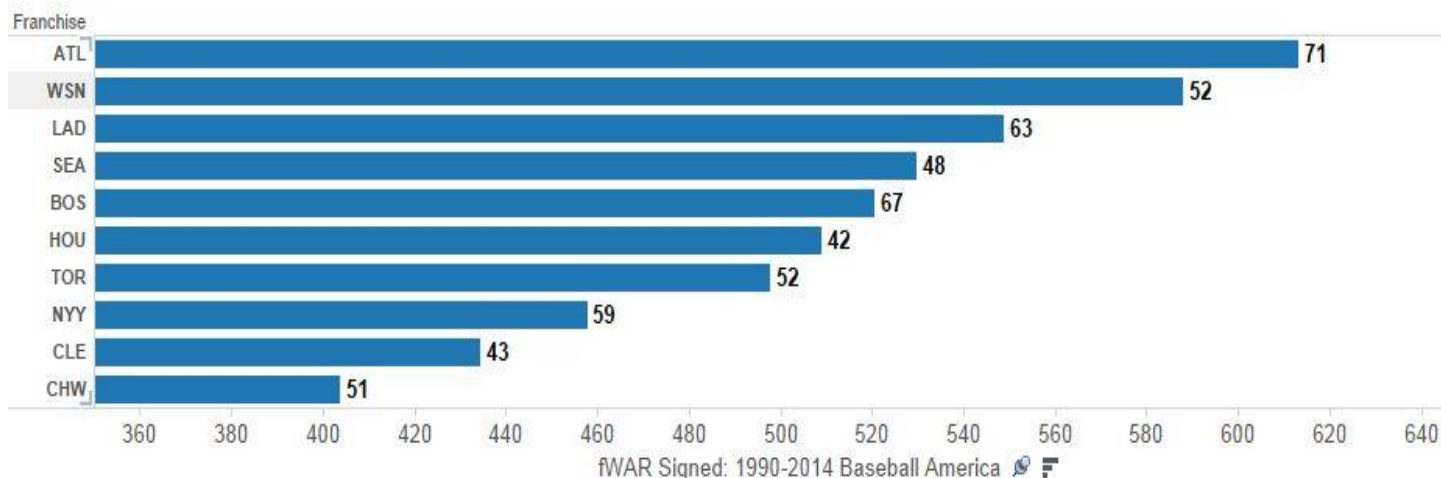
Both men handled the drafting of Marquis Grissom, Bret Barberie, Charles Johnson, Rondell White, Gabe White, Cliff Floyd, Mark Grudzielanek, Kirk Rueter, Jose Vidro, Brad Fullmer, and Javier Vazquez, who all came through the development pipeline by 1994. Their assistant scouting director: Fran Wren, moved on to the Atlanta Braves, landing top dog status there.

In the *Macrosabermetrics* section ahead, analysis shows these late-stage Expos never lacked for talent, a few examples:

In November 1984, Larry Walker signed as amateur free agent.

In 1985, Montreal selected The Big Unit, Randy Johnson, 36th overall, developed him in their minor leagues for four years, only to ship him off to Seattle for rental arm LHP Mark Langston, who left in free agency. (Atlanta drafted The Unit in 1982.) Johnson won just 3 games as an Expo. Langston: 12 in 24 starts in 1989 for a competitive, but yet another 2nd place team.

In 1987, Delino DeShields, John Van Der Wal, and Greg Colbrunn were mid-tier talents from the draft. Compared to other franchises, the Expos were hitting frequently on their amateur and June draft finds and developing them. From 1990-2014, the Expos/Nationals, compiled substantial fWAR on their prospects listed on *Baseball America's Top 100*. Only Atlanta signed more productive talent, resulting in a stretch of 14 division titles in 15 years.



1990-2014 BA Top Prospects: Montreal Expos/Nationals System

<u>UDFA Prospects</u>	<u>fWAR</u>	<u>June Draft Prospects</u>	<u>fWAR</u>	<u>June Draft Prospects</u>	<u>fWAR</u>
Larry Walker	68.9	Javier Vazquez	56.3	Delino Deshields	23.9
Vladimir Guerrero	56.5	Cliff Lee	47	Cliff Floyd	23.4
Orlando Cabrera	25.9	Ryan Zimmerman	34.2	Jason Bay	20.1
Ugueth Urbina	11.1	Grady Sizemore	29.3	Milton Bradley	19.2
Mel Rojas	3.9	Marquis Grissom	26.8	Jordan Zimmerman	13.5
Wil Cordero	3.2	Brandon Phillips	26.7	Brad Wilkerson	11.9
		Rondell White	24	Stephen Strasburg	11.1

1994 Expos, Meilleure Équipe Du Baseball

As mentioned, a new consortium ownership took over in 1991 from the deeper pocketed Charles Bronfman. With that, the Expos were no longer fronted by a true money man, as local business members put up \$10 million for a slice after a prolonged search for a single owner went nowhere. Any losses to these reluctant members were dire – being basically, only “millionaires.” The city and Quebec province kicked in \$33 million to the baseball kitty. Claude Brochu was assigned general managing partner of this group, kicking in his \$2 million investment (Borawski 2004).

Such ownerships have rarely worked out well, as various personality types can drive any sane baseball management crazy: so-called self-made money man, the control freak, the meddler, the politician, the backstabber, the gossip, the negotiator for power and control, and, the penny-pincher(s), all do their worst to battle for a piece of supremacy. Usually, a one-man ownership has one or two of these personality quirks inherent, but the more people involved will bring out more of these disruptive notes. Human nature at work; bedevils good operations; and forces decisions.

Dave Dombrowski left Montreal after the 1991 season. He was hired to oversee the Marlins operations by 1993. In only four years, the Marlins won the pennant and World Series; he then was ordered to sell off the talent there. Gary Hughes, director of scouting for Montreal, left too for the Marlins, rising to VP of player personnel; Whitey Lockman, a special assistant to the GM, departed to Florida; and John Boles, director of player development in Montreal, left for the Florida Marlins’ ship.

Duquette bolted too in January 1994 – going to the money-is-not-usually-the-problem, pennant-hungry Red Sox. He hired over Ken Qualls, director of minor league operations in Montreal to be his coordinator in baseball development and administration. Obviously, both these men were abandoning ship and taking their stalwarts to better fishing waters.

The Montreal front office thereafter was a series of short stints as money to run operations dwindled as did home attendance. These

machinates took place even while an eager and talented bunch rounded into form out on the field.

Duquette, who'd taken over the acquisition of premier talent to get the Expos back to contention, had done so with a *Moneyball*-like expertise that was reminiscent of Fanning's best days. Andre Galarraga was swapped for RHP Ken Hill on Christmas day 1991. Delino DeShields, a former hot prospect, was swapped for HOF-to-be Pedro Martinez. Both these moves positioned the Expos well for their final shot at 1st place.

Felipe Alou, a long-time Giant player, Expo coach and minor league manager, had been installed by departing GM Dan Duquette. Felipe got the lifelong dream (and nightmare) of coaching his own son in the majors. He took over the talented and youthful bunch that dominated for nearly two seasons of baseball. 1993: The Phillies were just a bit better early on.

The 1994 Expos were the best team in the either league – with an improving Pedro Martinez, a bullpen of Mel Rojas and John Wetteland, supported by yet another homegrown set of toolsy outfielders in Marquis Grissom, Moises Alou, and Larry Walker. As announcer Steve Stone stated, "They turned doubles into outs" (Triumph and Tragedy: The 1994 Montreal Expos).

As the team was running out to an ample lead of 6 games (74-40), a player's strike tied to the installation of a salary cap and elimination of arbitration rights, pull the plug on the season. This resulted in a \$16 million direct loss in Montreal (Borawski 2004). Brochu, likely at the direct behest of the shaky financial consortium, went into 'fire sale' mode when it made the least sense.

The newly-hired front office under Kevin Malone was forced to make bad baseball business decisions, if you were intent on bringing in fans and revenues. Canadian Johan Keri, author of *The Extra 2%: How Wall Street Strategies Took a Major League Baseball Team from Worst to First* wrote in 2010:

"The biggest blow was one that rarely gets discussed, so I was pleased to see *Triumph & Tragedy* do it: The spring training 1995 fire sale, in which new GM Kevin Malone was ordered to dump Larry Walker, Marquis Grissom, John Wetteland and Ken Hill in a span of a few days. Also gave MLB Network a chance to show me saying the words 'John Wetteland for Fernando Seguignol', my face curling in disgust at the mere thought.

The team was never the same after that — even though, as Expos broadcaster turned Team 990 morning show host Elliott Price noted — you have to spend money to make money, and the Expos could have kept that core together, made a run at the '95 pennant, and still traded them at the deadline if it didn't work (Keri 2010)."

The dismantling was as follows:

Ken Hill was sent back to St. Louis in April 1995 for 1-win Kirk Bullinger, 2-win Bryan Eversgard, and Mendosa-hitter DaRond Stovall. Hill still had 4 very productive seasons left in his arm. (St. Louis did not receive any of them.)

John Wetteland landed in New York for their first title since the *Space Shuttle's* piggyback ride on a 747; or the *Starship Enterprise-D* going where no spaceship had gone before. John's salary for 1994 Montreal Expos: a "sky-high" \$2.25 million. He was traded for cash and the immortal Expo 1B/OF Fernando Seguignol, who received the league minimum, coming likely to Olympic Stadium on a 747 plane.

Larry Walker made \$4,025,000 during 1994. He was granted free agency, and signed by the new hitter's delight franchise: the Rockies. His talent was not even recouped.

Marquis Grissom was traded to the Atlanta Braves for Roberto Kelly, Tony Tarasco, and Esteban Yan. Kelly stayed one month before going to Los Angeles with Joey Eischen for Henry Rodriguez and Jeff Treadway. *Oh Henry!* did get his best year in Montreal in 1997. Tony Tarasco was in Montreal one season, later shopped for Sherman Obando who played his final big league game in July 1997; then going overseas to Japan. Yan was sold off to Baltimore, and went on to a 33-39, 5.14ERA career.

Grissom was diced up because of a huge salary – \$3.75 million in 1994 – but luckily never performed again to his 1992-1994 levels. Serviceable, but never the spectacular and speedy outfielder he was in an Expo uniform.

Jeff Fassero acquired through free agency was jettisoned in 1996 for Mariners prospects LHP Trey Moore, RHP Matt Wagner, and C Chris Widger. Only Widger produced substantive value, in 1999, but a year later, he was gone to Seattle again. Fassero pitched until 2006.

LHP Butch Henry came via trade from Colorado for Ken Bottenfield. October 1995, he was put on waivers, where Dan Duquette's Red Sox claimed him. He had injuries that sapped his career duration, but Henry served a swing starter purpose for Boston in 1998.

A 25-year old LHP Kirk Rueter, after 4 productive years was packaged with Tim Scott to acquire RHP Mark Leiter, who stayed in Montreal for one season, before going to free agency.

Moise Alou, surprisingly (but with his father there), was kept until free agency, making \$3.05 million in his last year as an Expo. Alou played for Dombrowski's Marlins; the 1997 World Series champion in their 5th season as a franchise. In being let go, his departure gave the Expos yet another supplemental round draft pick. That strategy tragically backfired for the Expos' future, as none turned into MLB players of note.

Montreal Expos Draft in 1997	Picks/WAR
Supplemental 1 st round Draft Picks	7
Total bWAR (1S)	0.6

Lastly, and most importantly, Pedro Martinez, the 'Dominican Dandy' of the early internet age, acquired in a steal from Los Angeles for 2B Delino Deshields, left in a lopsided trade to Boston.

Pedro got off to a near perfect start, taking a perfecto into the 8th inning of his 2nd start for the Expos. Some chin music played awoke the savage beast in Cincinnati's Reggie Sanders. A full-on brawl ensued, Sanders was ejected, but the legend and legacy of Pedro was born that day, at just 22 years old. Pedro had arrived and brought out the ire in many of his opponents. (Don Zimmer: meet Pedro, the altercation.)

In the shortened year, Pedro racked up an 11-5 record (lifetime .687 winning %) and 2.5 WAR. The next two seasons for Montreal were workmen-like, going 27-20, with 2.5-3.0 strikeout/walk ratio with intriguing glimpses to the dominating Pedro to come. (He threw nine perfect innings, giving up a hit in the 10th to San Diego in June 1995.)

The 1997 season Pedro led the National League with 13 complete games (his career high), wiping out 305 hitters, while walking only 37. He led the league with a 1.90ERA (2.39 FIP).

But his days in Montreal were up; traded to the eager Red Sox who parted with pitchers Carl Pavano and Tony Armas, Jr. They signed Pedro to 6-year, \$75,000,000 deal with an option year at \$17.5 million. GM Dan Duquette's best move of his truncated Boston reign was reacquiring Pedro, and likely the best assistance given to his replacement: Theo Epstein.

Pedro provided an essential piece to the puzzle for the Bo Sox in 2004 after posting seasons of 19, 23, 18, 7, 20, and 14 wins. Four times he led the American League in ERA with sub-2.30 ERA during the most offense-friendly era since 1930s. He never lost more than nine games in a season while in Boston, most times, registered under five losses. He punched out hitters at a rate above 11.5 during his time in Boston, never walking more than two per nine. His WAR in Boston: 53.8. Career: 84.0.

By then, the Expos were in full skimp-on-talent-acquisition mode. They sold off, or most usually, just let talent walk for a song, or compensation picks. This was just a short-term financial reprieve (the lack of losses), over making long-term investments for the teams' betterment. Or as an anonymous insider stated: "It is easy to be critical about other people's money (Triumph and Tragedy: The 1994 Montreal Expos 2010)". The self-made millionaire owners were unwilling to put more in to operate the franchise they had bought only a decade earlier. This opened the door for the final, one-man owner: Jeffrey Loria.

Another substantive problem: TV revenues were (\$25,000) per game compared to large market teams like the Dodgers (\$250,000). Add to that, the Montreal team split market share with their American League counterparts, the Toronto Blue Jays. The battle for such revenues,

maintaining poor facilities (stadium falling apart), made cost-cutting measures seem the best way – to not lose more money. But, it undermined what success could be had as it embittered the fan base. The panic sell-off likely scared anyone interested in buying and making it work. In concert, currency fluctuations between Canada and the U.S., meant the team was troubled until its demise in 2004. (A Bill Veeck, in his prime, may have been the solution to a turnaround. Certainly would have been entertaining.)

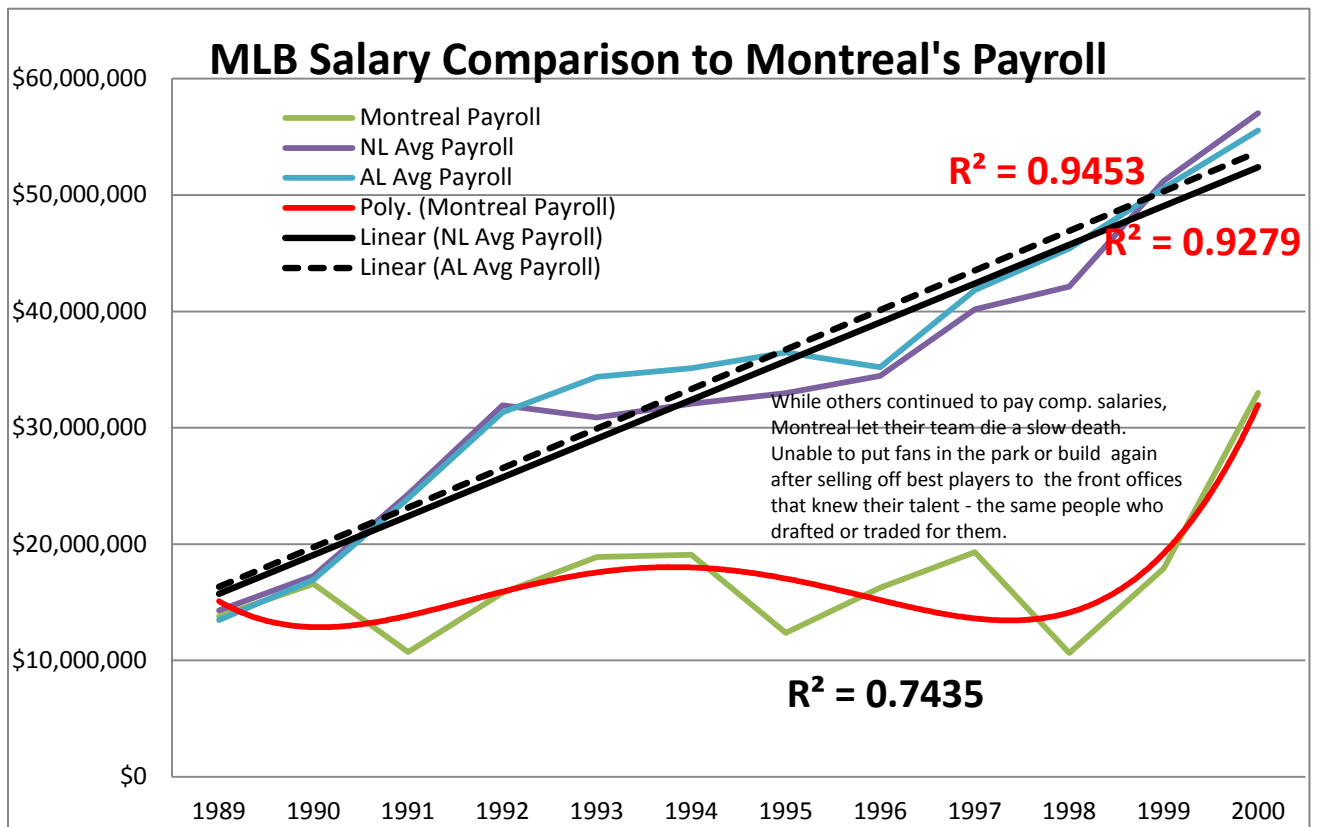
When at *Baseball Prospectus*, Jonah Keri ranted, like a fan does, on more than one occasion about the ownership, and MLB, regarding the Expos situation:

“Montreal didn't let the Expos down--MLB did. As in any city, fans came out to support a winner, then dwindled in number when the team lost. As one terrible ownership group transitioned to another, Expos fans endured endless assaults on the viability of their team, their stadium, their players, their city and themselves, from Major League Baseball and their team's owners. As word spread of a possible move, fans staged rallies, voiced their opinions, showed up to cheer their team. Eventually--long past the point at which most rational people would have thrown in the towel--Montreal baseball fans decided they'd had enough of being toyed with and laughed at.” (Keri, *Au Revoir, Mes Amours: Saying Goodbye to the Expos* 2004)

“Seven years of awful owner after awful owner badmouthing the city, the team, the ballpark and the fans later, MLB took over the team, planning on pulling the plug after the 2002 season. The league may have meant well when it tapped Omar Minaya (mmpf! umpf!) as a lame-duck GM for the lame-duck franchise, but other than picking up Troy O'Leary for nothing, Minaya's done little to... (ummf!)

Sorry, Omar's just a little squirmy. You see, he's probably a good guy and all, but what does he know from the heart-wrenching lunacy that is Expo fandom? Yeah, OK, his former employer, the Mets, once employed Junior Noboa too. And sure, Minaya's trying to make his bones and earn a more stable GM job somewhere. But all he's done is rearrange deck chairs on *le Titanic*.” (Keri, *Soyons Expositifs!: Planning the Miracle* 2002)

Minaya sold off future stars Cliff Lee and Brandon Phillips, further twisting the knife into the mortally-wounded Expos franchise back.



By the turn of the 21st century, the Expos changed owners, to art dealer Jeffrey Loria. Who then, in essence, swapped the failing asset in the Expos for the Florida Marlins franchise, selling the Expos to MLB's 29 other owners for \$120 million. Loria took that cash and bought the Marlins for \$158 million from John Henry; who took over the Red Sox for \$700 million.

MLB operations ceased in Montreal on September 29, 2004, losing to the aforementioned Marlins, 9-1. 5,416 fans attended that game. And 35 seasons of exciting and tumultuous Canadian baseball were given farewell and adieu.

Jonah Keri, on an Expos' experience worth remembering circa 1993:

"Riding an unbelievable comeback, the Expos surged from also-rans to contenders in a span of a month, setting up a summit with the Phillies at the Big O. In another testament to their ability to pack the stadium given the right circumstances, 45,757 crazies showed up for this game. Trailing 7-4 entering the seventh inning (this may not actually be true if you examine the data, but ask any Expos fan in this era which inning was Magic Time, and invariably they'd say the seventh), the Expos tried to mount a rally, putting two on for rookie pinch-hitter Curtis Pride. Pride responded by smashing a double to the gap, scoring both runners as the Expos tied the game that inning. They'd go on to win 8-7, though their quest for the division title would eventually fall short. (Gary Carter and the Meaning of Memories)"

Pride, who was deaf, felt their appreciation through the turf.

3.5. Macrosabermetrics: Two Models, Player Valuations and GMs

Runs: Allan Roth, Dick Cramer, Bill James and Pete Palmer Formulae

Much of the story of baseball began with the innovative inclusion of statistics to formulate what a player, or team, would produce either offensively or defensively. From Chadwick's first innovative box scores, the comparing of skills in players has slowly evolved from the 'tally statistics' to 'rate statistics.' But even in this sport, heavily wrapped up in the totaling of all things statistical, the baseball magnates and front offices were slower to adopt more definitive and accurate measures of a player's worth. Instead, they relied on their late 1800s and early 1900s *best* measurements that even traditional fans now look askance when mentioned. As such, we still have those traditional box scores. But now, yearn for better scales of measurement. (One-game snapshots are not a proper way to gauge and capture what a baseball player *is*.)

But as time moved forward, the ability to breakdown the game into bits and pieces in order to evaluate players led many men to a new dogma, a religious altar of statistical analysis. Their path is strewn with complicated formulas to arrive at the orthodoxy of, "what did this player actually contribute to the team?" The names known in the world of experimental baseball statisticians: Tom Boswell, Bill James, Pete Palmer, Ted Oliver, Alfred P. Berry, Allan Roth, Earnshaw Cook, Dick Cramer, and Steve Mann to name a select few of the sabermetric and (pre-sabermetric) adherents as Chadwick too, the 19th century innovator, was. Their work is the foundation for new analysis – paving the way for a new generation with faster computers, simulations and modeling, most of all, greater access to a wider array of information. But, it is important to revisit their ideas: to reflect how these analysts got to their *aha! moment*.

Amongst the various incarnations of formulas to further describe baseball are *run scoring* theories. Various men have developed their formulated packages to relate to statistical fanatics just how runs are created and tied them to specific events on the field.

In "Branch Rickey's Equation Fifty Years Later" written in July 2005 by Dr. Ray C. Fair of Yale University's *Cowles Foundation and International Center for Finance*, and Danielle Catambay, also of Yale, revisited a study done for Branch Rickey by Allan Roth in 1954. Rickey's study determined that on-base percentage was an important part of offensive production and a measure of isolated power was developed in the study. The overall goal of Rickey's analysis reflected what was important to both offense and defense in relation to games in the baseball standings. Fair's and Catambay's overall assessment is positive for the article's conclusions, reached long before current 'stat heads' made their quantum leaps.

In the 1970s, a wide array of men formulated other equations for runs scored. The Runs Created (RC) formula of Bill James is a model of elegance that is mistakable for Dick Cramer's Batters Run Average (BRA). (This author did it.) Both use two statistics, primarily, as the driving forces for scoring:

On Base % = ((Hits + BB+ HBP)/ (At-bats + BB + HBP + SF))

Slugging % = ((Singles + 2* Doubles+ 3* Triples+ 4*Home Runs)/At-Bats)

Where: BB = Walks, HBP= Hit by Pitch, SF= Sacrifice Fly (can typically be omitted and still achieve good results)

These two parts are then multiplied together for the Linear Regression of Runs vs. Cramer's BRA. Bill James' model added stolen bases, caught stealing and sac flies to the mix, but the statistics prior to 1951 are unavailable for most caught stealing information. (When this was written, this daunting box score/play by play task was under build to completion at *Retrosheet.org*, and by others in that field. The data set is more complete now.)

According to Dr. Amir D. Aczel (*Complete Business Statistics*, Chapters 10-11, 1999), simple linear regression contains two parameters: an intercept parameter and a slope parameter. This Linear Regression is given by the equation:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Linear regression model assumptions:

- The relationship between X and Y is a straight-line relationship.
- The values of X are assumed fixed; the only randomness in the values of Y comes from error term ε .
- Errors (ε) are normally distributed with a mean 0 and constant variance (σ^2); the errors are uncorrelated.

Multiple regression model assumptions:

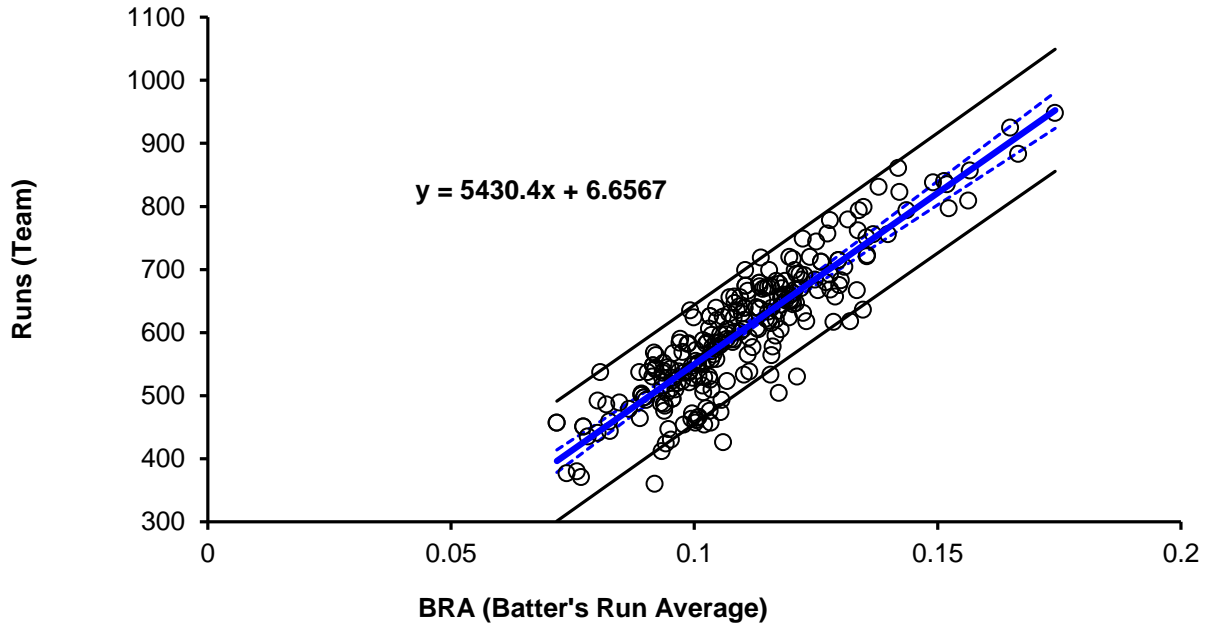
- Whereas, a k-variable multiple regression model is given by:
- $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon$
- Where, β_0 = intercept, and each β_i , $i = 1, \dots, k$, is the slope of the regression surface.

For each observation, the error (ε) is normally distributed with a mean **0** and standard deviation (σ); and is independent of error terms associated with all other observations. Normal distribution plus non-correlation equal independence.

X_j are fixed quantities, we assuming that we have realizations of k variables X_j and that the only randomness in Y comes from the error term, ε .

These statistical regression ideas were inspired by the work of Sir Francis Galton who, coincidentally, was a cousin of Charles Darwin (Aczel 1999, 437). From this statistical principle, much of baseball can be analyzed for linear patterns and weight factors. As J.C. Bradbury writes in *The Baseball Economist*, "The main advantage of regression analysis is not that we can generate correlation between two variables. The most useful aspect of this method...is its ability to accommodate more than one explanatory factor. By including other important determinants of an explained variable, we can know the added, or marginal, impact that each explanatory variable has on the value of the explained variable (Bradbury 2007, 238)."

Graph 3.2.1. Taft Era: 1908-1921



Over the course of various eras, the accuracy of this equation can be assessed:

Table 3.2.1. Statistical Results of Cramer's Formula

Batter's Run Average (Cramer)				
ERA	Taft	Coolidge	FDR	IKE
Observations	256	224	224	234
R ²	0.7930	0.9006	0.9220	0.8547
Adjusted R ²	0.7921	0.9002	0.9216	0.8540
SE	47.75	33.81	30.87	31.58

The Adjusted R² shows a high correlation (or fit) to actual runs produced. And the accuracy has improved from the IKE era (1950-1963) to modern day offenses. One possible reason the formula is less accurate in the early days of baseball: stolen bases (SB) and caught stealing (CS).

A different offensive paradigm existed, therefore, more variation and success at generating runs. In looking at the records kept in the early 1900s, base runners were consistently thrown out at a pace non-conducive to scoring runs. In 1914, 1915, 1920 and 1921, there are numerous recorded instances where teams were caught stealing more than they were successful at stealing bases. (This includes the Federal League records of 1914 and 1915.) Given this trend, the years where the caught stealing number is unavailable (in this era), one can potentially surmise base running was not decidedly any better.

Also, if a team's success rate is below 66%, it is assured that a negative affect will be seen on the runs scored by the team. In this author's opinion, only

a success rate of 85% or greater provides much, if any, substantial benefit to a team in amassing runs to win games. Further analysis in the *LBJ Era* chapter relates to the running of 1980s St. Louis Cardinals working well. With this said, any percentage below 60% will amass significantly negative runs totals, thus throwing off the accuracy of prediction of Cramer's equation in the **Taft Era** of baseball; the last one where stolen bases were decidedly 'king.'

Dick Cramer sold the Oakland A's the first computerized statistical service, *Edge 1.000* (Palmer and Thorn 1984, 51). Even in the 1970s, those frugal and statistical A's were ahead of other teams. Cramer's influence is later seen in Pete Palmer and John Thorn's book on statistics in baseball, as a whole chapter is dedicated to his research on the clutch hitter, and coincides with the so-called birth of *Jamesian* Sabermetrics.

With the conception of Palmer's Linear Weights, an even more elaborate, if relatively easy to apply to individual players (as other formulas were not so versatile in doing then) developed. Its basis is the utilization of factors applied to each significant baseball event: the home run, double, walk or stolen base, to name just a few. With this equation, both the individual and the team runs could be determined from contributions made via these events. However, changing values from season to season initially confounded their expected analysis. But their statistical results were superior to others' efforts. (Something correctable in hindsight as the ability to handle 'Big Data' is no longer an issue as it was then.)

Palmer's formula assigned values to each event, where:

$$\text{Runs} = A*(\text{Home Runs}) + B*(\text{Triple}) + C*(\text{Double}) + D*(\text{Single}) + E*(\text{Walk/HBP}) + F*(\text{Stolen Base}) + G*(\text{Caught Stealing}) + H*(\text{Outs Made})$$

This generates a multiple regression equation, where the y-intercept is set to zero in this case. The statistical results were as follows:

Table 3.2.2. Palmer's Linear Weights

Linear Weights	American League (1936-2005)	National League(1936-2005)
Observations	782	764
R ²	0.9329	0.9157
Adjusted R ²	0.9321	0.9145
SE	28.4365	27.2430

Once again, both the R² and Adjusted R² are very high and matched well with the formulation as applied. The ability to predict runs scored based on what the event or on-base average multiplied by slugging average means, at least, is that there is a reasonable projection to determine what a lineup will score, if healthy. (Risk assessments of player's health factor into this overall equation at a level that has been studied that of age and prior injury history probability.)

As will see, this strong statistical foundation can be applied to multiple avenues of baseball events: namely, the structure of the game can be modeled from financial implications to the fans desires for championships.

Developing Two Models: Financials and Fans

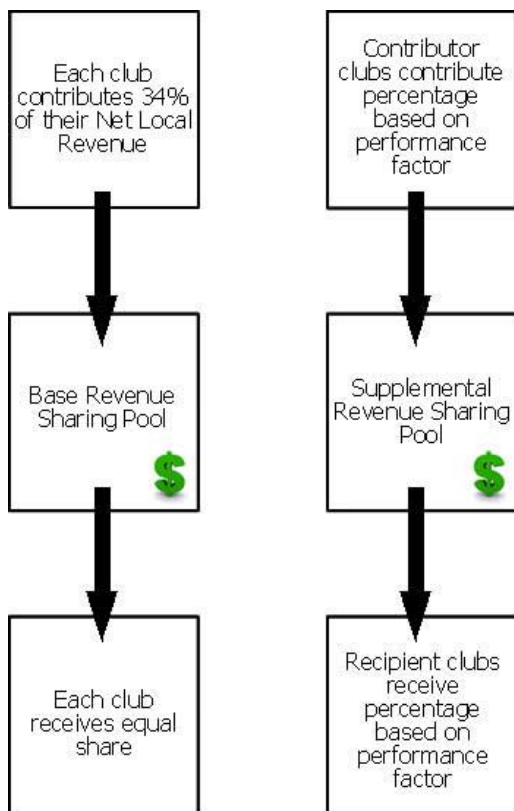
From run scoring above to knowing the meat in the seats, the focus of fans has changed during the growth into the 'Big Data' era. Some of this data, regarding the finances of MLB, is available from various websites such as Forbes.com, Bizofbaseball.com, Fangraphs.com and MLBTraderumors.com and Cot's Contracts. Michael Ozanian, Maury Brown, Wendy Thurm, Tim Dierkes, and Jeff Euston provide much of the particulars at each of these websites listed. Ozanian has published at Forbes yearly revenue receipts and projected franchise valuations based on his compilation of data for two decades. Brown has written and reported information regarding salaries of players and on a wide array of baseball business-related topics. Thurm does excellent work at Fangraphs, providing analysis of the confusing CBA changes, revenue-sharing analysis, and explaining luxury taxes. Tim Dierkes, at MLBTraderumors.com, posts on the daily nature of contract signings/rumors along with his team of analysts. Lastly, Cot's contracts (managed by Euston and Baseball Prospectus) created a simple format for analysis of salaries long-term. Others too provide coverage in this growing area which can be called *Macrosabermetrics* – the top down benefits/cost analysis (BCA) of operations in the sport.

Even with these considerable resources, baseball financials are far from completely accessible, or transparent, down to line item details. In August 2010, leaked financial information on the Angels, Mariners, Marlins, Pirates, Rangers, and Rays appeared at the *Deadspin* website. The documents, mainly 2007-2008 consolidated reports, showed money flows and balance sheets of these teams; gate and concessions and television inflows; revenue sharing received in small market teams; various minor league expenditures and scouting; and resources dedicated to player development. These are summarized below.

By the numbers (Biertempfel and Cohn 2010)					
A look at the financial figures released by Deadspin.com that detail some noteworthy income and expense categories for the Pirates, compared to four other Major League Baseball franchises for the 2008 season:					
Category	Pirates	Angels	Marlins	Rays	Mariners
Gate receipts	\$32,129,368	\$103,209,000	\$20,985,000	\$39,013,069	\$66,324,000
MLB revenue sharing	\$39,046,312	(\$14,747,000)	\$47,982,000	\$35,345,277	(\$16,174,000)
MLB central fund	\$20,306,730	\$27,191,000	\$31,298,000	\$19,778,648	\$28,132,000
Local broadcasting	\$18,700,434	\$42,967,000	\$15,900,000	\$13,444,475	\$64,365,000
Concessions	\$8,283,870	\$16,516,000	\$2,268,000	\$9,551,348*	\$11,240,000
Total income	\$145,993,437	\$237,869,000	\$139,647,000	\$160,961,576	\$216,200,000
Player salaries	\$51,040,233	\$142,138,000	\$29,739,000	\$56,018,335	\$119,408,000
Player development	\$23,182,677	\$16,339,000	\$29,970,000	\$21,900,693	\$15,534,000
Total expenditures	\$124,203,035	\$226,615,000	\$100,433,000	\$146,759,370	\$223,872,000
Profit (after taxes)	\$14,408,249	\$7,088,000	\$29,462,000	\$4,016,163	(\$4,533,000)
*Includes parking revenue					

These numbers were never known before; even with all the emphasis of websites listed above which leads to the first analysis of this section.

The whole of baseball can be looked at through various reports and data collected. Since 1998, 30 teams have existed. This sets a starting range for this analysis. Most revenue and salaries are accurate within a few hundred thousand or a million per season over this span (some data points were off – 2004 Montreal Expos and Mariners, from a review). All other data (attendance, wins, slugging%, runs scored, etc.) can be pulled from Baseball-reference.com, Fangraphs or the *Lahman* database. *Baseball America* is used for top prospects turning into talent. *The goal*: to see what teams do over a prolonged span to win; and tie it to numbers such as revenues, attendance, run scoring, prospects becoming productive, and runs allowed. This develops a financial model, a macro level view of the game; to go with the fan model, winning games and WS titles.



This model/analysis will set aside a very salient part of the game: that of revenue sharing. Revenue sharing has contorted the financial playing field since it was installed with the CBA in 1996, after ownership's approval in 1994. Local team revenues are pooled (31-34%), then divvied up, with small market teams – definition of this is unclear, but comparable to population and television viewing area size – getting larger chunks of revenues back. Additionally, MLB has central fund that supports smaller teams based on a performance factor which likely stems from MLB national television contracts (Fangraphs, 2014). (Wendy Thurm's flowchart of revenue sharing money is pictured left.)

Since 2002, information has been slim on application of revenue sharing, but it is substantial part of small market teams' financials as seen in the above table. The Pirates and Marlins have exploited this to a greater extent than any money made off club gate receipts. The Marlins, for example, have, "received close to \$300 million in revenue sharing [between 2002 and 2010] (Thurm 2012)."

This shared amount, and a publicly-financed new stadium where the locals are on the hook for \$2.4 billion in total debt, likely make *Wall Street* types blush with delight. The stadium deal bond payments for 50% of debt (\$1.2 billion) will not start until 17 years after an initial \$91 million borrowed (Hanks 2013). Or as top *Yahoo!* sportswriter Jeff Passan derided in July 2012:

"Here is how the con worked.

The Florida Marlins owners whined, and they brayed, and they swore up and down that they couldn't afford the new stadium necessary to raise their payroll from embarrassing levels and compete annually. And they got it, the vast majority on the taxpayer's teat no less, this gleaming new gem from which they would fatten their pockets by taking all of the ticket and concession and parking and advertising sales, every last cent, no matter how unseemly that felt." (Passan 2012)

The Marlins found a way to "pass go" and collect monopoly millions without ever going to anything like jail. It should be noted Jeffrey Loria, Marlins owner, once held the Montreal Expos before swapping franchises with John Henry (then Marlins owner, but now, Boston Red Sox) to move south to retirement country. His ownership in baseball has never been without controversy.

This instance points to a business model that operates full throttle in baseball. Whether it's a welfare system, a tax shelter, bait-n-switch tactics (build up anticipation of winning, then sell players off) or other more tolerable motifs, it makes the Yankees spendthrift model look a bit more 'normal.'

But as will see, even with this revenue sharing monster, it has not balanced out mistakes on fielding a winning team.

For our (1998-2013) twin models, these variables are important to the grand scheme of things:

- Home Attendance
- Revenues (Adjusted)
- MLB Player Salaries
- Wins by franchise
- Runs Scored
- OBP
- SLG
- Runs Allowed
- DICE/FIP ERA
- BA Top 100 Prospects

From these variables (some dependent, others, independent) several linear and non-linear graphs will point to how well or how badly franchises do on a variety of important tasks and builds up the framework of the financial and baseball fan models. The graphs 'outliers' generally provide the most discussable points, either to a franchise's benefit, or to its visibly poor efforts.

Though such analysis is never ending for the baseball front offices on a yearly basis, this data set focused on the span of time (and usually two front office tenures) to plausibly show what existed: the reality in the numbers.

Assets & Revenues: Home Sweet Home



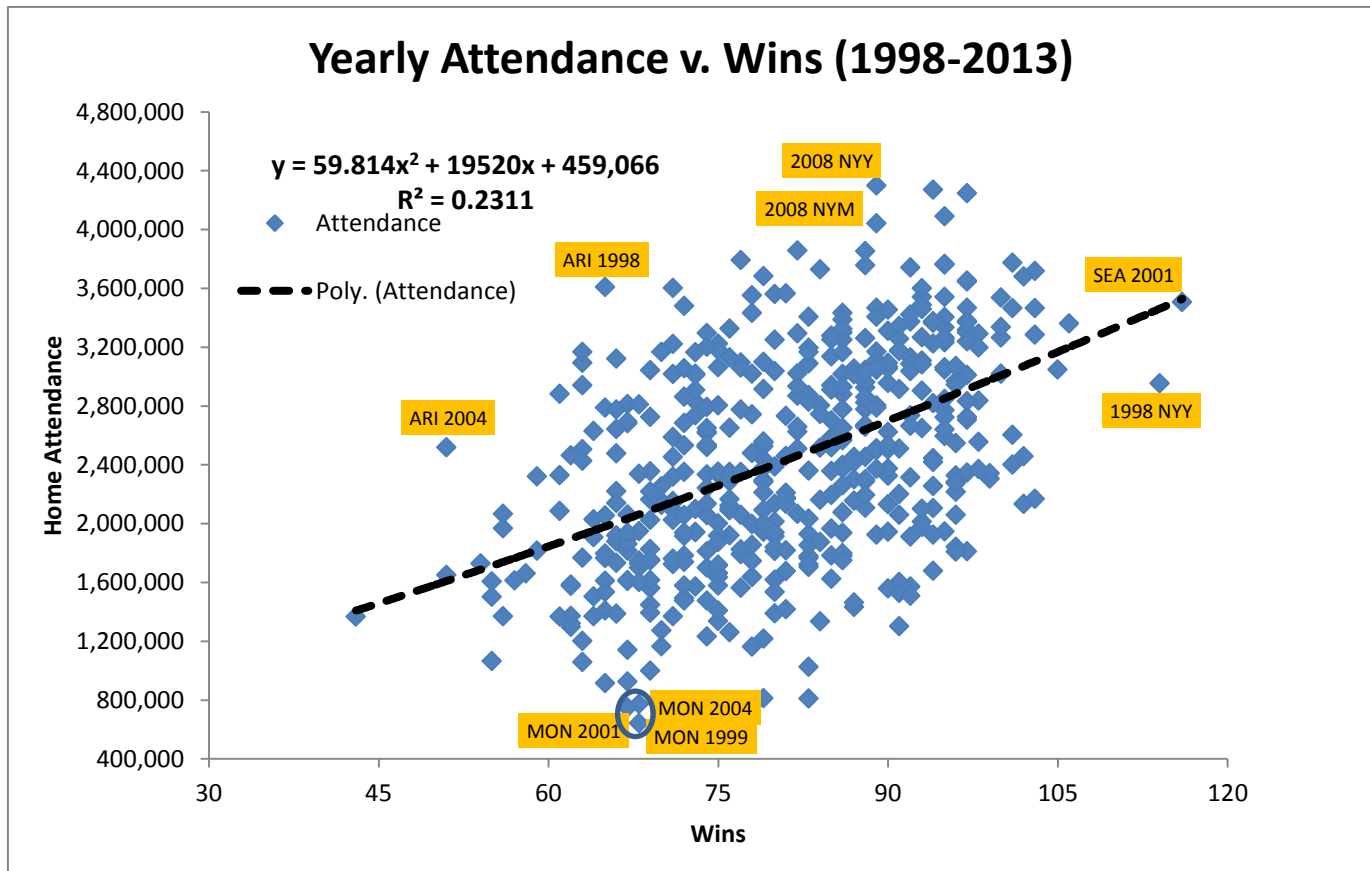
¹Home Attendance, Popularity and Wins

Home Attendance vs. Wins

First up is the measurement of Home Attendance versus Wins of the span of 16 seasons. How teams continued to raise payrolls towards the quarter-billion dollar mark that either made fans blush with pride or frustration, depending on the results of the season. *To clarify again: correlation does not imply causation.* Just because a team wins does not induce a fan's attendance.

The general idea is that over a span time (which could vary from fan to fan, and team to team), fans will come because they feel winning (or a good time) can be had in seeing more successful outcomes; or at least, exciting losses. So winning tends to promote people's likely attendance to sports venues in America and around the world in sports like football (both types). We do love winners – we laud praises and build entire entertainment empires on the concept of a brand *that wins*. So, it is very plausible that such is true. Else, business folks would not continue to work to build, or buy into, such winning teams.

Attendance is but one measure of how strong or weak such a brand is in relationship to winning over a prolonged span. What the graphs below reflect is a weak R^2 -squared (23.1%) in a season; and a modest R^2 -squared (43.4%) for winning predicting home attendance over that span of time as fans likely adjust expectations accordingly. Exceptions exists; and a few highlighted teams are storied below.



In A Small Country: The Montreal Expos give you a fair idea of how poor attendance can correlate and predict one's future. Those three teams circled reflect what happens in gutting good players (Vladimir Guerrero, 2003), slashing payroll (1999:\$17.9M actual), operating a bad ballpark for fans, and allowing weakly capitalized ownership. The last two seasons saw 22 home games at Estadio Hiram Bithorn in *San Juan, Puerto Rico*, capacity 18,264. And Puerto Rico wanted the franchise relocated there. Instead, to Washington *Le Expos* went.

Snake Biting: The 1998 Arizona Diamondbacks made a 3.6M attendance splash in their first season in the bigs. Newer entertainment – the BOB (Bank One Ballpark) – was setup to handle a dry summer heat. And the team was not too bad either for an expansion type, and moreover, they wasted little time building themselves a winner. 1999 D-backs won 100 games making an astute trade of 22-year old Karim Garcia for 30-year old LF Luis Gonzalez, which paid off big: 30 fWAR versus a player that never generated any positive WAR. Traded for 3B Matt Williams, giving them leadership and production, if a bit pricey for the time frame. Free agent signed Steve Finley (18WAR). Biggest of all free agents: the 'Big Unit' Randy Johnson racked up 5 seasons of 8 fWAR or more. They acquired Curt Schilling as the superb #2 SP along with long-time Cubs 1B Mark Grace to complete this group of veterans. This is the *anti-youth movement team building*, as no player was under 30. But it worked in spades.

After winning the World Series in 2001, against the Yankees, the D-backs franchise went back to the playoffs in 2002, losing to the Cardinals. The big pitching guns got hurt – Johnson and Schilling – and so, the rebuild was on. Nevertheless, 2004 ARI attendance showed a positive effect from WS glory.

The Twin Towers of 4M+ fans: the New York Yankees and Mets. The Mets saw 2006 season ended so close to the promise land, with Carlos Beltran caught looking on strike three. **2007:** 1 game out. **2008:** front office traded for SP Johan Santana (giving up soon-to-Milwaukee CF Carlos Gomez) in the hopes Johan deals it off the hump with David Wright and Jose Reyes as the young thumpers. Willie Randolph lasts ½ a season as manager, then Jerry Manuel nearly gets them home in the final year at Shea. Whether it was nostalgia purposing, or winning enough, the final games at Shea meant plane sounds were grounded. **2009:** Both Yankee Stadium III and Citi Field opened in the midst of the financial crisis hangover experienced in America, and owner Fred Wilpon, the latter a 'victim' of Bernie Madoff. Yankee Stadium II closed out in 2008 in record fashion. The Yankees faithful celebrated in the winningest of all houses.

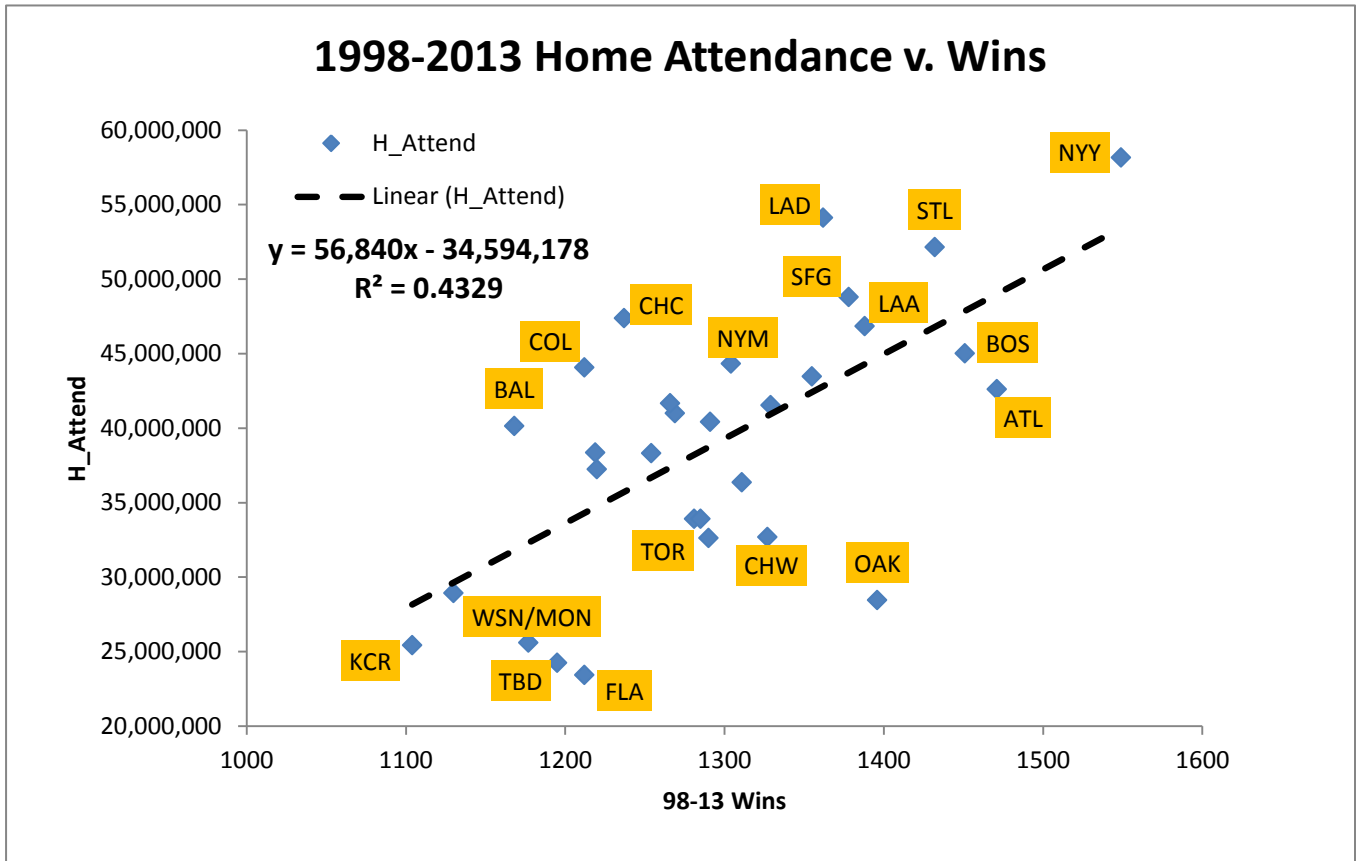
Seattle Super Fanatics: 116 wins generated their 2nd best attendance ever. From 1997-2004, the fan base went as the wins did. 90 wins equals 3,000,000 people visiting Safeco Field. Thereafter, no 90+ wins, less people.

This second graph below shows cumulative totals for the span. A few modest observations can be made. Teams above the line, are more successful at attracting fans (or booking paid attendance figures) than ones below the regression line. Factors influencing could plausibly be: fan base loyalty, ballpark amenities and charm, large market TV/ national broadcasting (which fuels loyalty), small market population, bad ballpark, smaller ballpark, isolated franchises, frequently moved franchises, and warm climate/alternative entertainment opportunities.

Over a span of time, stark differences in ball park attendance do develop. This table reflects the disparity between the winners and losers on attendance.

Biggest Attendance Differences (1998-2013)

<i>Difference from Model</i>	Pos. Team	<i>Difference from Model</i>	Neg. Team
11,666,273	CHC	(16,297,255)	OAK
11,295,065	LAD	(10,872,052)	FLA
9,769,558	COL	(9,085,172)	TBD
8,344,086	BAL	(8,142,068)	CHW
5,338,646	STL	(6,703,660)	WSN
5,067,730	SFG	(6,406,269)	ATL
4,796,686	NYM	(6,119,284)	TOR
4,693,537	NYY	(4,530,516)	MIN
4,289,350	SEA	(4,308,819)	CIN



The easiest to recognize is fan-base loyalty as the Cubs, Cardinals, Dodgers, Giants, Yankees, Mets and the Rockies minimally meet this criteria. Seattle, as discussed, had their heyday. Add large market factors (New York, Chicago, Los Angeles); ballpark amenities or charm (Yankee Stadium II/III, Dodger, Coors, Busch, Camden, and Wrigley) one can surmise the positive effects. Baltimore set the standard for new build stadiums. Every new park tries to emulate the *Camden effect* – or the *Wrigley/Fenway old-time design effect*.

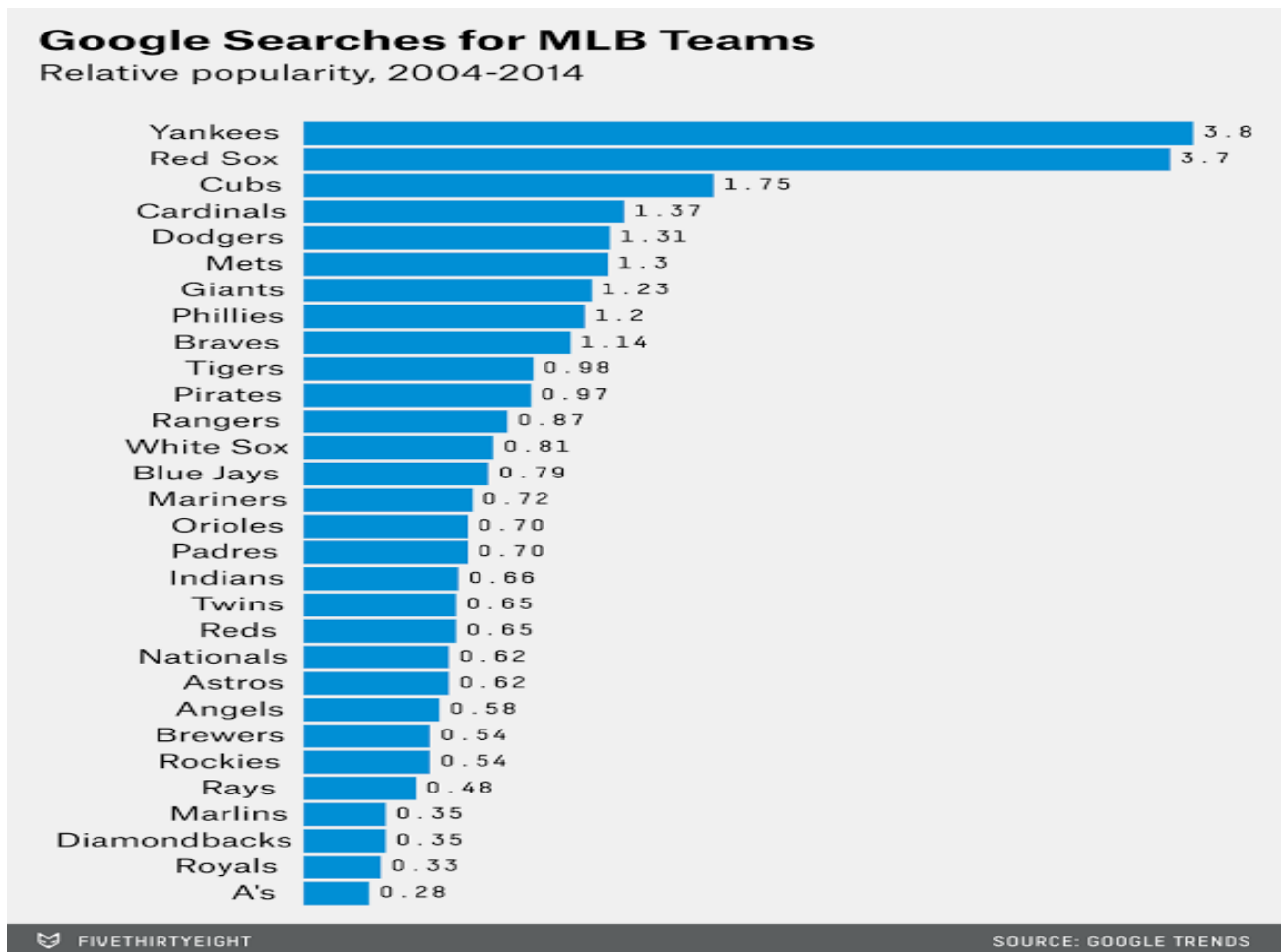
The Cubs have been on TV since *Uncle Miltie*. WGN reached a nationwide audience, and so, their promoted brand, whether 'lovable losers' or 'bleacher bums', surpassed what any winning projected on Cubs attendance records. Yet, they've attended more playoffs (4) in this span than in their prior 53 seasons (2). (Now, WGN is done carrying Cubs games after 2014. *TV Money* calls.)

The Rockies have the MLB attendance record (4,483,350) set in 1993, their inaugural season. In the backyard of the *Mile High* fan base of the Broncos, and well, it is clear to see why they draw. Coloradoans love sports; and Mary Jane too.

Missing is Boston. Their large fan base cannot all fit into Fenway. Exclusive seating though has merits as revenue is not lacking in Beantown.

On the other end, Oakland provides the very worst of attendance scenarios: old, bad, small ballpark with clubhouse sewage issues; TV market shared with the mighty Giants (recent winner of two World Series, a newer, amenity-laden park, a \$70M/year TV deal); and also, these Athletics are very successful in winning versus this regression. They clip their coupons to stay ahead: call it a *waste not, want not* business model.

A recent Nate Silver *Google Analytics* study (Which MLB Teams Overperform in Popularity? 2014) provided this view of popularity of MLB teams based on searches for the team, and coincides with the prior and future analysis. Notice below the big market representation versus the small markets. Even adjusted for TV market size (the table below), the change is slight, but there.



Team	Popularity Factor	Team	Popularity Factor	Team	Popularity Factor	Team	Popularity Factor	Team	Popularity Factor
ANA	0.35	CHW	0.88	HOU	0.48	NYN	1.95	SFG	1.87
ARI	0.39	CIN	1.53	KCR	0.72	OAK	0.42	STL	2.29
ATL	0.97	CLE	0.83	LAD	0.79	PHI	0.83	TBD	0.55
BAL	1.34	COL	0.71	MIL	1.24	PIT	1.57	TEX	0.63
BOS	2.95	DET	1.02	MIN	0.72	SDP	1.33	TOR	0.54
CHC	1.90	FLO	0.47	NYM	0.67	SEA	0.79	WSN	0.53

Again on the downside, the *Loria Ghost Fan Effect* – the Marlins and Expos/Nationals – exists. Loria ran Montreal 1999-2002; owns the Marlins from 2003-present. In Montreal, the wheels were off the truck going in as this Ivy Leaguer (Yale, Columbia) bought gladly into this problem. The other minor investors failed to answer cash calls in 1999, leaving Loria to amass majority ownership of a depressed valued team. Once in charge, Loria attempted to push a new stadium deal in socialist Canada, but got nowhere because Olympic Stadium was yet to be paid off (2006). He desired a very lucrative media deal, asking a premium for a non-premium product. These instant and unreasonable demands were just seasoning for this Canadian goose to be cooked.

Loria, John Henry, and Bud Selig then simmered the water, set the table, and attempted a dinnertime okeydokey on Minnesota fans, slicing them out of the league, with Carl Pohlad's mealtime acquiescence gained for a reported \$150M tab (after buying the Twins for \$38M, 17 years earlier). But the retraction scheme failed as contractual obligations surrounding the stadium kept the Twins alive but the Montreal goose on the plate. Meanwhile, Loria, gaining the franchise swap with Henry, trucked off Expo team assets (down to software and printer cables) to Florida and got a \$38.5M interest-free loan from MLB. Henry bought Boston Red Sox; and attempted to hire Billy Beane from Oakland for a Brad Pitt-like salary.

The Expos, needing a *Beanesque* GM, were run temporarily by MLB personnel – shopped their remaining young talent for beans as Farid Rushdi at *Bleacher Report* wrote: "Omar Minaya treated the team as though they had no future. During this period of uncertainty, Minaya traded away minor leaguers (and future stars) Jason Bay, Brandon Phillips, Grady Sizemore, Cliff Lee and Cliff Young away for basically nothing (Rushdi 2009)." The Montreal goose, always a talent giver, gave up her golden eggs to the very end. (See: Montreal section.)

Even new ballparks built for both ongoing franchises did not turn around the problems immediately. In Washington, they shared a large market with Baltimore and Camden Yards. Only since in being really bad led to drafting really good (Bryce Harper, Stephen Strasburg), have the Nationals come up to par, spending quite a bit to compete, and posting decent attendance. Playoffs are now a welcomed, reoccurring theme in the nation's capital. But, would the Nationals have amassed such talent with Cliff Lee around in 2009? Likely not.

Down in South beach, their fan fickle nature is one part sun and salsa nights, two parts, ripped away players and replacing them with rookies that will succeed, *eventually*, only to be flipped for more potential. Call this technique: *flash baseball team ownership*. (The Marlins have yet to win a division, but have two World Series due to the wildcard setup. Yet, this fan base is not fooled by its owners. As H. Wayne Huizenga and Jeffrey Loria both sold off players, by the baseball bushel (1998, 2012), before the ink dried on player deals made.)

Alex Remington at *Fangraphs* wrote in July 2011 about the travails of the Marlins and their less-than-intrepid owner:

“The Marlins have the worst attendance in baseball. In fact, for the sixth straight year, the Florida Marlins have had the worst-attended home games in the National League. That’s an indignity they share with the last team that Jeffrey Loria owned, the Montreal Expos, who were last in the league in attendance for *seven* straight years from 1998-2004...The Marlins’ home attendance is so bad that the team recently conceded that they have no hopes of filling their stadium at any point for the rest of the year: [they’ve closed the upper deck of Sun Life Stadium](#), for reasons of cosmetics and pride — it will provide ‘a better ambience,’ said a team spokesman. But the real reason is that they don’t want to have to pay security personnel and support staff to cover a part of the stadium that absolutely no one buys tickets for.” (Remington 2011)

The new stadium in South Beach does not pack them in; and costs into the billions for this public-funded affair that is financed until...2045.

Tampa took a bad financial route at the start, spending top dollar for 30 and older players – Wade Boggs, Jose Canseco, Greg Vaughn, Fred McGriff, Juan Guzman, Roberto Hernandez, and Vinny Castilla. In 2000, the Devil Rays had 5 players paid over \$5,900,000. *By comparison*: In 2014, the highest paid Tampa Bay *Ray* with a long-term contract is Evan Longoria at \$7.5M salary that will increase to \$11M in 2015; David Price is paid \$14M through arbitration; Zobrist: \$7M. The prior tactics did not put warm, moneyed bodies into the Trop’s cheap seats.

Tropicana Field was built to entice the White Sox – who threatened to leave Chicago, and their numbers above still reflect why – and so, the 1990 build completion came 8 years too early for the Devil Rays to swim happily in to the park. So instead, the “Rays” moved into a lightly-used and renovated stadium that used an old fixed roof design. The team has never surpassed 2 million attendees since their tepid opening season at 2.5M (compared to the D-backs and Rockies launches). Their recent on-field successes actually acerbated the regression difference. They never drew when bad, predictive; improved, they still do not draw much, non-predictive, statistically. Much like Oakland, Tampa does more without resources: the *evaluative, flip \$10M players business* model.

The Toronto Blue Jays, after winning back-to-back World Series in the *Skydome* with 4,000,000 plus fans screaming, seemingly are no longer the most popular kid in the big northern country. To quote Nate Silver:

“But [the] extent to which a team’s popularity expands may have a lot to do with how well the team is run — and how often it wins. The Toronto Blue Jays theoretically have a whole country to themselves — but they are unpopular relative to the size of the Toronto market itself, let alone as compared to the population of Canada. The correlation between a team’s Google search popularity [as seen above] and its number of post-season appearances since

2004 is .62, a fair amount higher than that between its popularity and its market size (.38).” (N. Silver 2014)

The Blue Jays were passed by AL East opponents. Even when they sport a large payroll, the team has underachieved. It’s most visible role: trading good pitching arms (and prospects) to other teams in recent years. Mid-2014: Hope springs with Toronto 38-26; 5.5 games ahead. Attendance down 150K (34G).

Atlanta seems a bit similar to Boston, *win-wise*; but parallels both Florida teams and Arizona, climate and economic-wise. Atlanta successfully won in a mid-size market, with a superstation (TBS) for television; and *branding* effectively with winning ways. Turner Field opened in 1997, post-Olympics. Yet, after yearly post-seasons trips (1991-2005), the fan base dwindled away, below 3,000,000, right after the 2000 season. Recessions hit in 2001, and 2007-9, hard, contributing to fans’ absence. But since their travails resulted in only 1 World Series title, the fan base loss reflected lost interest (.97 – Silver).

As a transplanted team – 1966 – it spent 25 years with little success. Then, a breakthrough, that has lasted longer than anyone not named the Yankees. However, it’s a southern team, akin to Florida (Miami) and Tampa, as there is good weather, water close, and adventures aside from baseball, and Georgia football. Arizona, too, never matched its initial 3.6M souls put in the stands. The difference there: they have not won consistently enough to be an ‘outlier.’

But plausibly, this difference is a matter of economic plights. The graph below shows the synchronization of the real estate markets in Florida, Arizona, and Atlanta versus Bostonian housing. Atlanta, Phoenix, and Tampa dance around the same levels of market value. Miami bubbled more severely, and rose faster out of the depths of the Great Recession. Boston: actually little movement, with a positive increase in real estate value from the midst of the Great Recession.

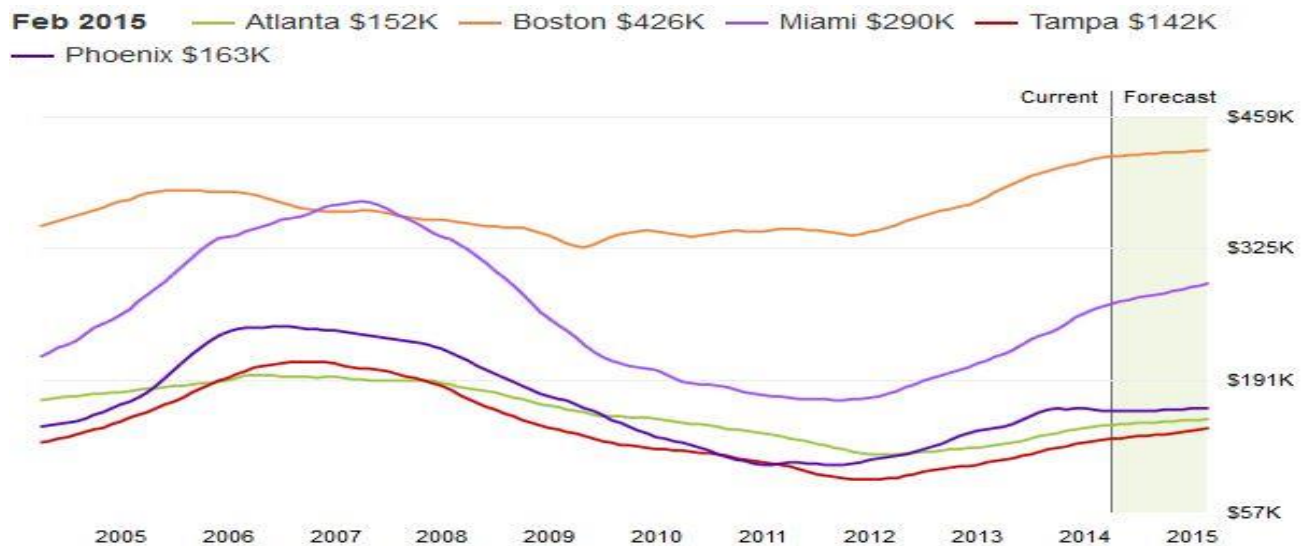
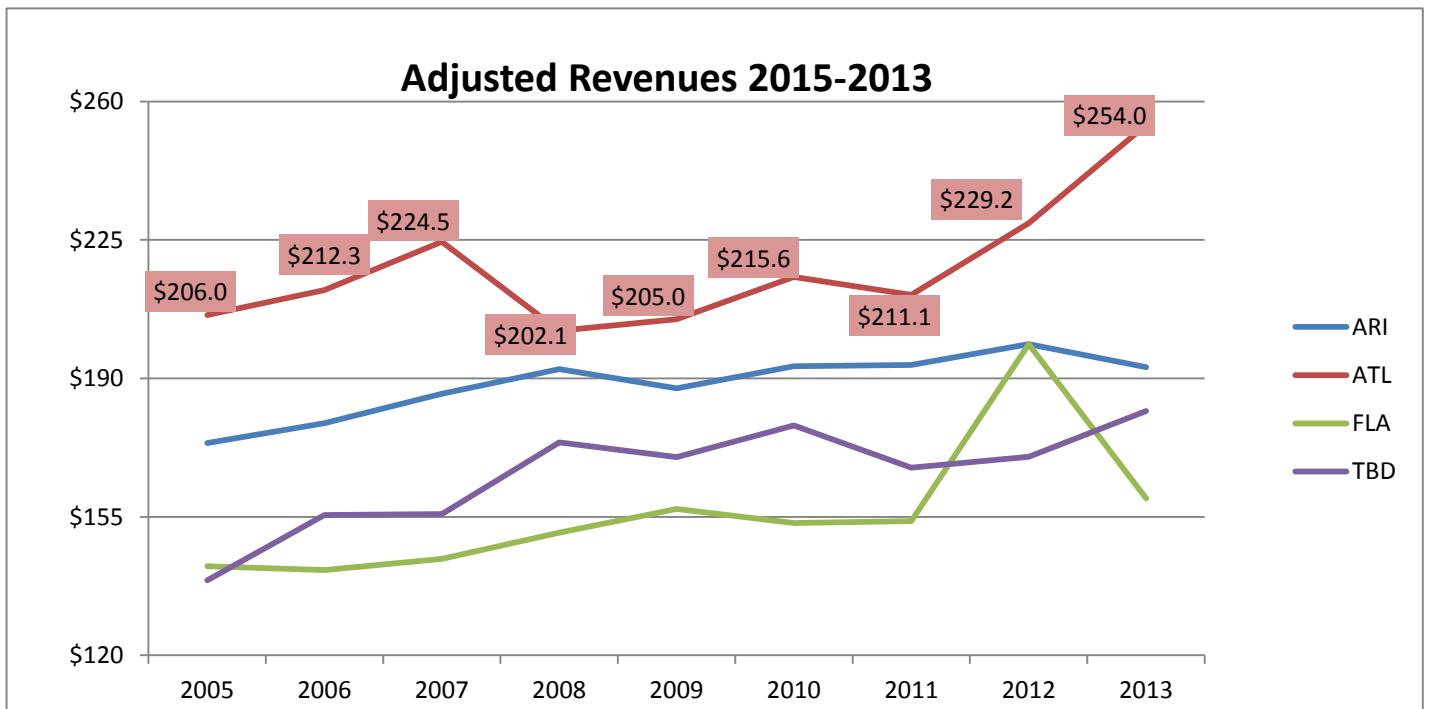


Figure: <http://www.zillow.com/atlanta-ga/home-values/> (2014)

The linkage: People that used their houses as ATMs until 2007; thereafter, they could no longer afford the prices at ballparks, so they made rational choices to shift spending to more essential items. As the flipping of homes stopped, wealth creation too, went south, literally. The more severe the fall (Miami, displayed above) the more affected attendance more likely than not. And so the dead last Marlins could employ this excuse aside from the *Loria Ghost Fan Effect*.

But as the graph below shows, the Braves revenues in 2008-2009 were below the 2005 team's adjusted revenues, broadly following the housing market. Arizona and Tampa Bay also stagnated, while the Marlins took their subsidizing brethren's cash and reported revenue increases (and made \$29M after tax).

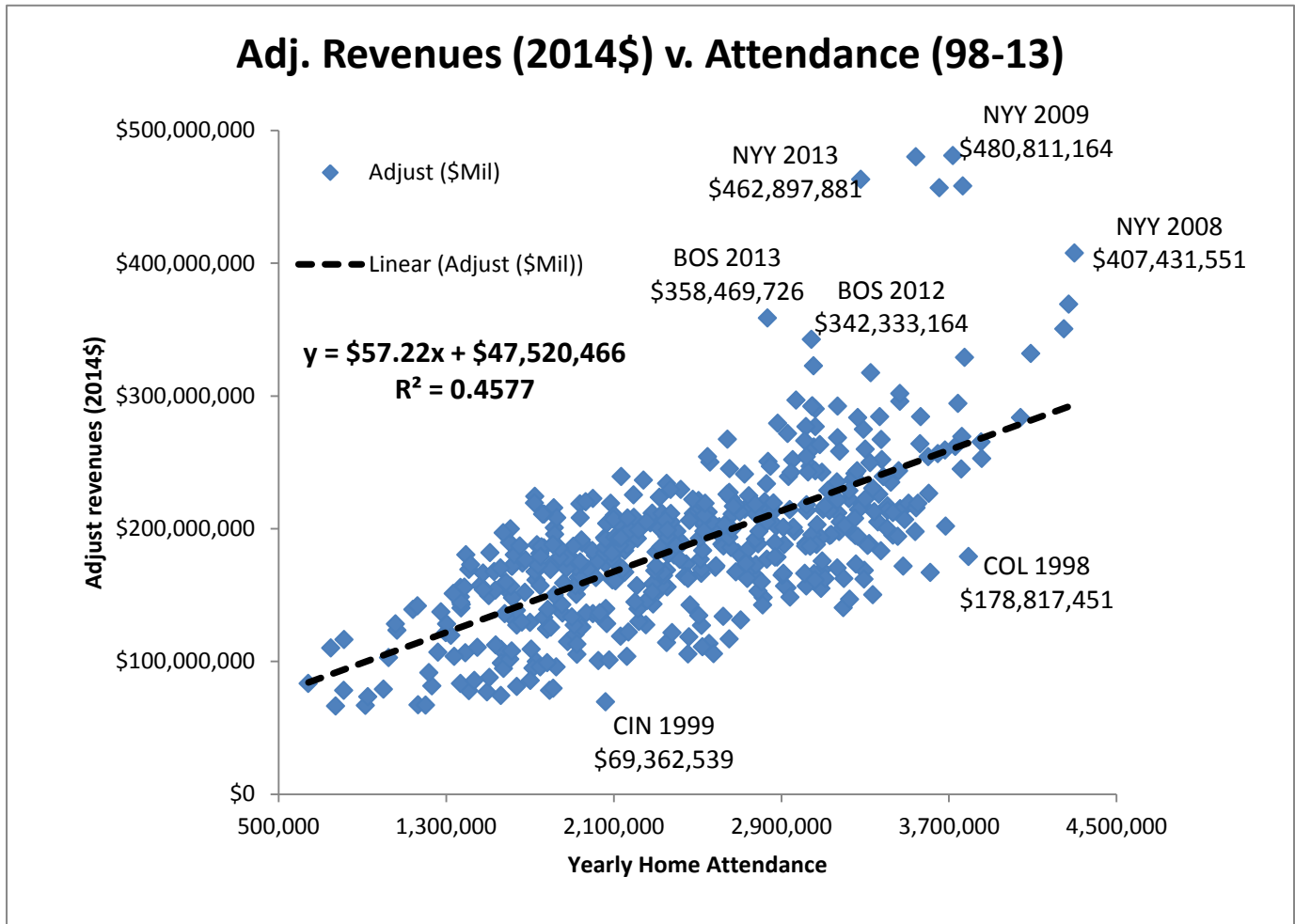
In Atlanta, they might fall under *spoiled-by-goodness and belt-tightening issues together effect*. Their 2010, 2012, and 2013 seasons landed in the playoffs, but they did not register a breakthrough to World Series. The home attendance hovered between 2.3-2.5 million fans, with playoffs generating an income boost. (A mature TV contract, lacking upside, adds to this stagnation.)



Atlanta's strategy to solve this problem: A new stadium deal was approved for Cobb County, just north of Atlanta. So a two decade old park is jettisoned soon after the lease expires in 2016. A proposed \$350M Turner Field renovation was not approved by Atlanta's mayor, leaving the new stadium option as 'the out.' The team cited transportation issues, parking issues, and location of their fans with respect to Turner as reasons to abandon the park. Yet, the new park plan has been noted for transportation flow, parking design, and anticipated cost outlays that are not targeted much to solve those aforementioned problems. (The Braves project to build the park to 42,000 capacity: call it the *restrict capacity and raise ticket prices* model.)

Adjusted Revenues vs. Home Attendance

One should suspect too a team's revenues are closely linked to their fans home attendance as money flows in from a variety of sources: ticket sales, concessions, merchandising, and now, most of all: television deals, local, regional, and the MLB-negotiated. Therefore, the correlation and prediction model is substantial like the 'win factor' is to garnering revenues.

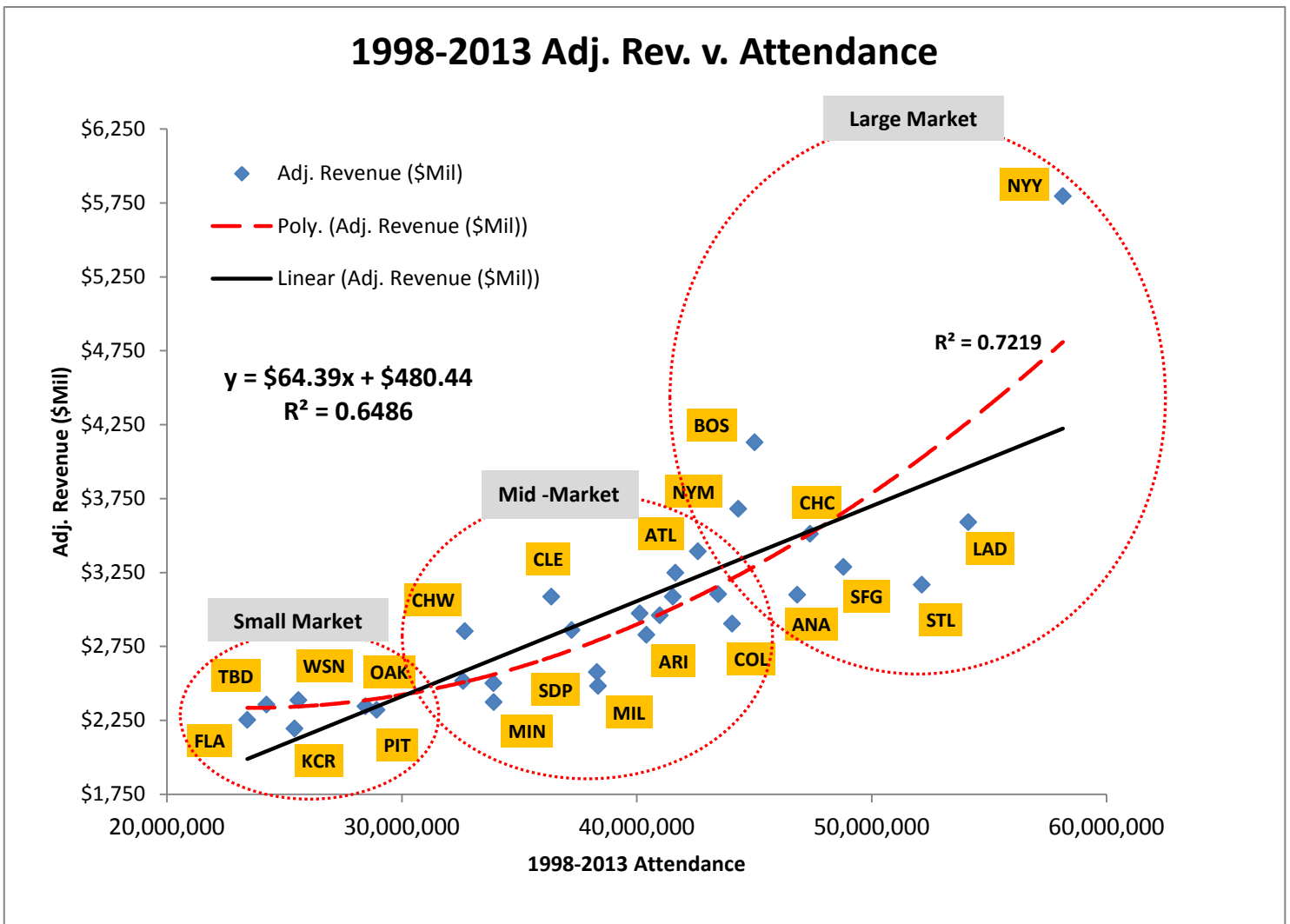


The above graph reflects Adjusted Revenues (2014\$) from 1998-2013 to home attendance. As one should suspect, the Yankees pulled in much to their coffers; roughly, \$100-120M more than the Boston Red Sox.

If one eliminated the labeled Yankees and Boston teams from the calculation, the R-squared calculated moved slightly higher to 46.2%. The standard error changed most significantly from \$44,502,564 to \$36,542,704. P-values are significant, on the order of 1.65×10^{-65} even after 11 teams were removed. Again, these northeastern juggernauts have ballpark charm, mystique; enormous TV deals (NESN, YES); rabid fan bases; and winning yearly to promote. Boston's breakthrough as World Series winners (3) in the past decade balanced the Yankee run in the late 1990s, and the more recent 2009 title out a bit. But in terms of revenue pies, *Yankees Win!* can be seen here.

The Biggest Revenue Winners

Year	Team	Revenues	Attendance
2009	NY Yankees	\$ 480,811,164	3,719,358
2012	NY Yankees	\$ 479,877,738	3,542,406
2013	NY Yankees	\$ 462,897,881	3,279,589
2010	NY Yankees	\$ 458,056,211	3,765,807
2011	NY Yankees	\$ 456,530,782	3,653,680
2008	NY Yankees	\$ 407,431,551	4,298,655
2007	NY Yankees	\$ 368,907,942	4,271,083
2013	Boston Red Sox	\$ 358,469,726	2,833,333
2006	NY Yankees	\$ 350,429,334	4,248,067
2012	Boston Red Sox	\$ 342,333,164	3,043,003
2011	Boston Red Sox	\$ 322,379,368	3,054,001



A better reflection of the differences is reflected (above) in the adjusted revenue totals versus the total attendance amassed over the sixteen seasons.

Easiest to recognize are the small market teams – call them the *Gang of Six*. To put these revenues in perspective, the Washington Nationals franchise, even with their woes in Montreal, still had more cash (\$2,384M) for their team operations than the stagnant but successful Oakland A's (\$2,343M), if *Forbes* data collection is closely accurate. Though, all of MLB subsidized the Expos' existence for *at least two of those seasons*.

Those two franchises share another similarity: television market split with a close neighbor (Baltimore and San Francisco). Local TV market size influences teams' ability to amass revenues, and thus creating and enforcing team branding efforts. As RSN TV deals grow into the billions, and last decades, this factor will have positive effects; but will encounter viewer resistance via new media platforms as portable forces could undermine these deals. (Vol. II, *Reagan Era*.)

Of the mid-market teams, Cleveland, Atlanta, and the White Sox have outperformed the regression. In Atlanta and Chicago, they jumped in early on TV revenues in the 1990s; succeeded too in appearing in the playoffs; and in the Sox case, leveraged some "large" market muscle, even if a ballpark design victim and splitting media with the ever more popular Cubs. Cleveland was happy too in the 1990s. Minnesota, San Diego, Milwaukee, Arizona and Colorado did not benefit according to the regression. Minnesota moved into Target Field in hopes of improved attendance; the others had minimal success in post season (often a lucrative event for revenues), and so, they fight on to change their plights.

The large market teams are really the Yankees; and all the rest. St. Louis and the Dodgers could move revenues upward (the Dodgers now have through a massive TV deal), and the Cardinals, through ticket prices at the park. St. Louis's regular post season attendance keeps Midwestern people loyal to their brand. The Royals (and the Cubs) being generally bad has made this too an easy task. San Francisco is another big market winner of late, and so, they have increased their fan base. They too have a modest TV deal that works out; a park that promotes; and moneyed Silicon Valley clientele that does not hurt their coffers.

Adjusted Revenues, Park Attendance, Television Market and Popularity

The effect of large market forces on revenues is significant as *physical and remote* attendance both provide substantial dollars per viewer of the end baseball product. The methodology used to determine market size was tied to recent TV market surveys on market size, and overall households in those reports. **Note:** the census population size in 2000 and 2010 would make good backwards adjustments to markets for this time frame discussed, however, such adjustments move us further from the goal of reflecting a simple correlation.

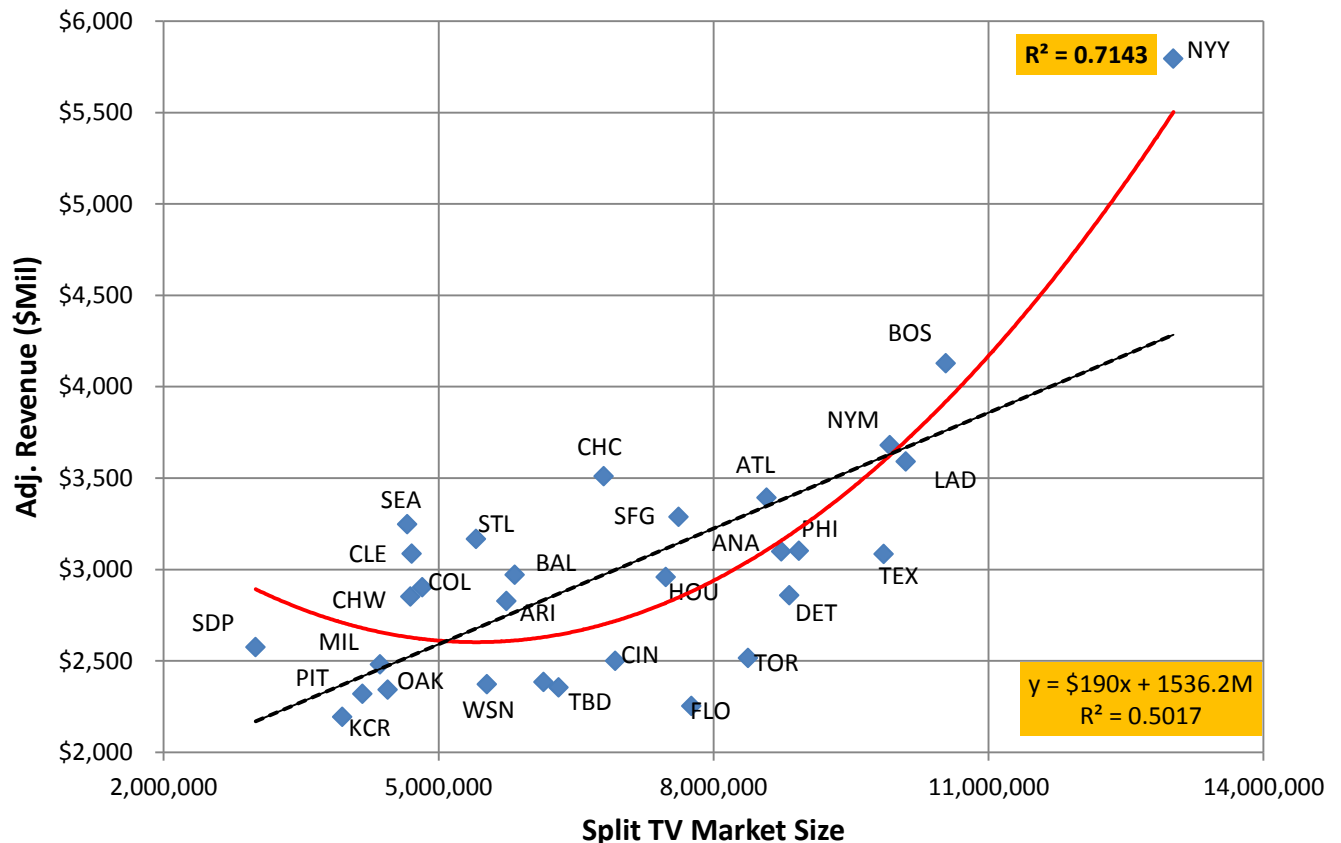
Such adjustments can be extremely precise (yet tell nothing) or extremely inaccurate (and possibly, tell us something else.) So, I went with others have done to define *Designated Marketing Area* (DMA), made logical additions of secondary markets (75-100 miles from the major city) and split market shares for multiple team cities (LAD, ANA, SFG, OAK, NYY, NYM, CHC, CHW, WSN, BAL) based off team attendance share over the period. (Washington was measured

against Baltimore since 2005.) By no means is this the perfect or ideal way – as fans could attend both parks; watch both teams regularly; and so forth. But it is one methodology to use.

Multiple regressions were run, each tweaked as factors were added and fine-tuned. The overall results were:

Regression Statistics		1 st Model	2 nd Model	3 rd Model
Reg Results	Multiple R	86.94%	87.17%	88.9%
	R Square	75.59%	75.99%	79.01%
	Adjusted R Square	73.79%	74.21%	76.59%
	Standard Error	\$366.06M	\$363.10M	\$345.92M
	Observations	30	30	30
X-value	TV Households/Split TV Market	\$160.14	\$111.61	\$122.88
	98-13 Attendance	\$47.31	\$49.75	\$40.19
	Popularity Factor			\$21.34
P-value	TV Households/Split TV Market	0.001878	0.001486	0.000614
	98-13 Attendance	0.000017	0.000004	0.000220
	Popularity Factor			0.072323

2nd Model: Adj. Rev (98-13) v. Split TV Market Size Variable



Here are the results of the 3rd Model, including Silver's *Popularity* study:

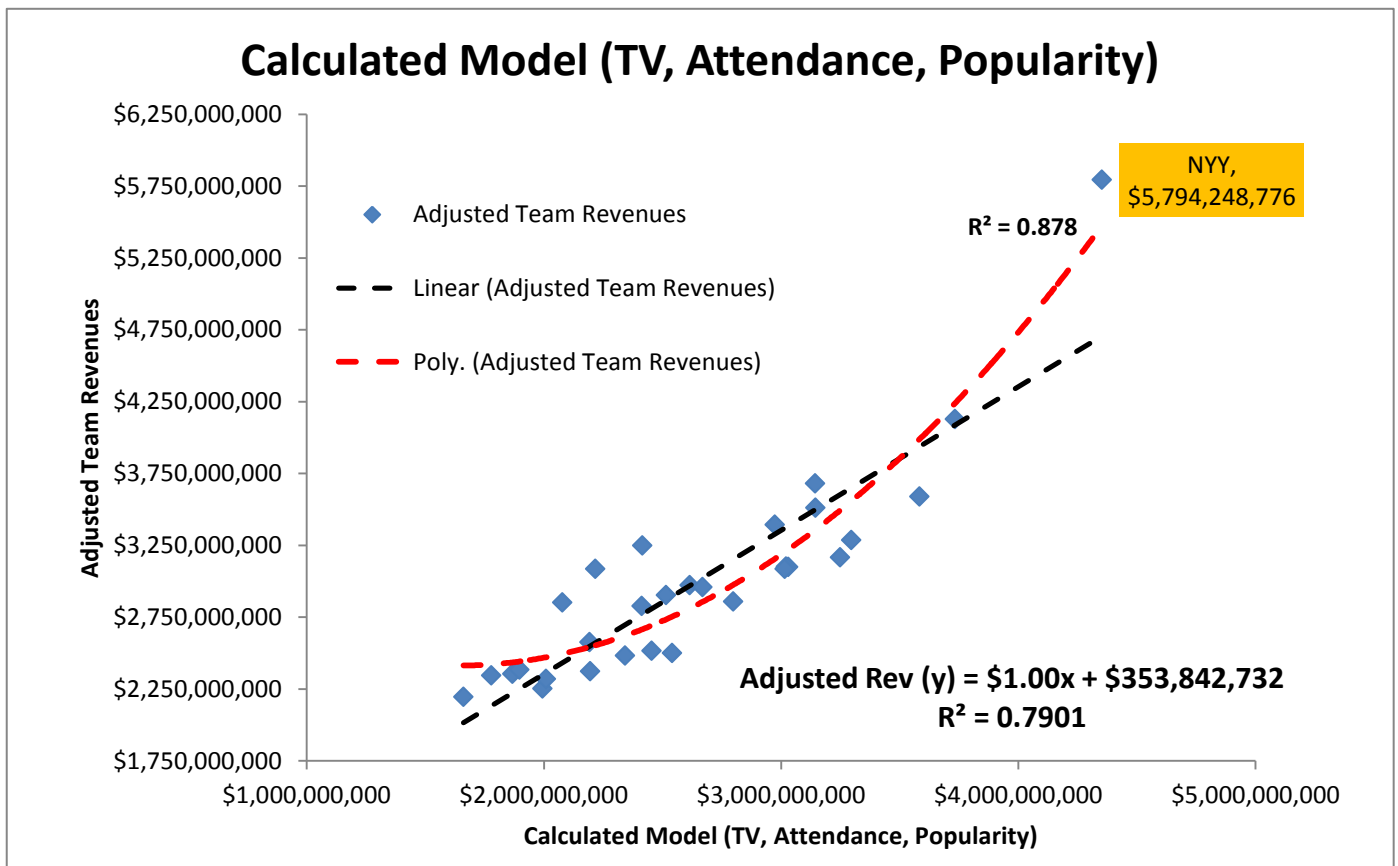
Team	Popularity Factor (1000000)	Split TV Market Size	98-13 Attendance	Adj. Revenue (\$Mil)	Split TV	Attend%
ANA	3,500,000	8,737,767	46,835,275	\$3,098.63	LAD	53.6%
ARI	3,900,000	5,739,000	40,422,557	\$2,826.93	ANA	46.4%
ATL	9,700,000	8,578,000	42,610,996	\$3,392.01	NYN	56.7%
BAL	13,400,000	5,829,386	40,138,871	\$2,971.21	NYM	43.3%
BOS	29,500,000	10,534,500	45,021,375	\$4,128.16	SFG	63.2%
CHC	19,000,000	6,800,389	47,383,009	\$3,510.17	OAK	36.8%
CHW	8,800,000	4,691,691	32,690,256	\$2,850.95	CHC	59.2%
CIN	15,300,000	6,928,000	33,908,871	\$2,500.38	CHW	40.8%
CLE	8,300,000	4,706,000	36,364,740	\$3,085.18	BAL	48.7%
COL	7,100,000	4,820,000	44,065,297	\$2,901.67	WSN	51.3%
DET	10,200,000	8,825,000	37,236,649	\$2,858.64		
FLO	4,700,000	7,759,000	23,423,687	\$2,251.95		
HOU	4,800,000	7,480,000	40,990,967	\$2,958.56		
KCR	7,200,000	3,950,250	25,434,456	\$2,193.50		
LAD	7,900,000	10,096,233	54,116,784	\$3,589.39		
MIL	12,400,000	4,361,920	38,362,053	\$2,481.10		
MIN	7,200,000	5,526,000	33,914,534	\$2,372.24		
NYM	6,700,000	9,922,486	44,321,693	\$3,679.72		
NYN	19,500,000	13,017,014	58,144,311	\$5,794.25		
OAK	4,200,000	4,442,639	28,457,020	\$2,342.62		
PHI	8,300,000	8,932,180	43,469,197	\$3,101.80		
PIT	15,700,000	4,168,000	28,931,994	\$2,318.56		
SDP	13,300,000	3,003,500	38,309,380	\$2,574.50		
SEA	7,900,000	4,656,000	41,654,442	\$3,246.88		
SFG	18,700,000	7,618,361	48,798,887	\$3,286.54		
STL	22,900,000	5,407,750	52,139,156	\$3,166.16		
TBD	5,500,000	6,310,000	24,244,290	\$2,354.89		
TEX	6,300,000	9,857,000	41,538,972	\$3,084.68		
TOR	5,400,000	8,374,500	32,609,965	\$2,515.57		
WSN	5,300,000	6,143,434	25,602,684	\$2,383.96		
Avg.	10,420,000	6,907,200	39,038,079	\$2,994.03		
St. Dev.	6,254,780	2,358,914	8,792,181	\$702.93		

The popularity factor was adjusted to scale up correctly. Overall, a fan, during this period, added over \$40 *per visit* to the ballpark; at home, television watching placed over \$120 in the ownerships coffers; and popularity through searches was consider a plausible \$21 factor (say buying merchandise like a hat or t-shirt to support one's team.) Of course, this is but one interpretation. The p-

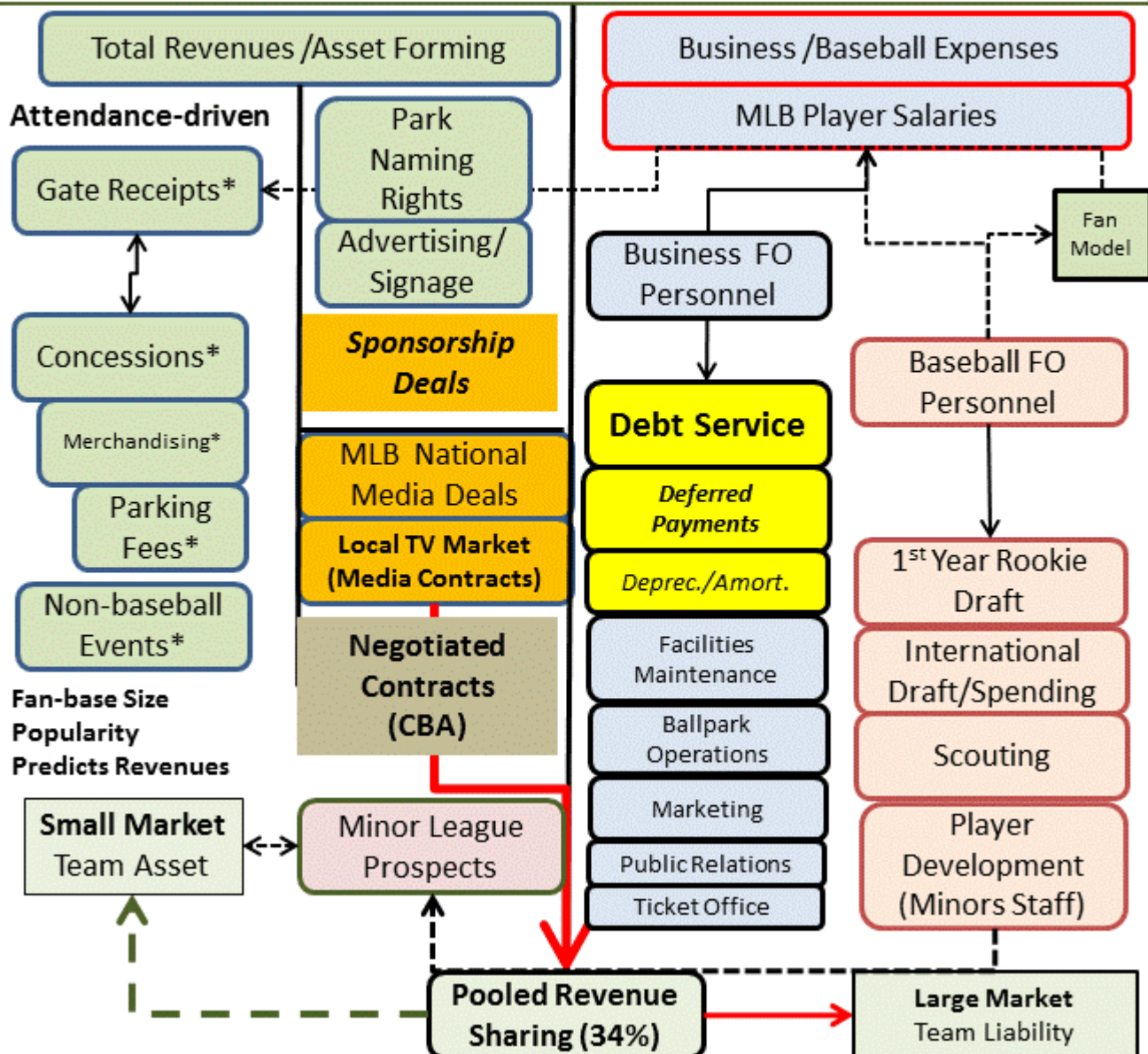
values are significant at 95% confidence level in all but the popularity case (.072323) which was adjusted based on the order of magnitude.

Again, the Split TV market size was roughly based off a 75-100 mile factor. The Padres calculated to the smallest TV market, excluding cross border Mexico viewership that plausibly moves them to the size of Oakland, or the Nationals market, and a bit closer to the linear regression for this single factor. The Orioles may also be in a much larger TV market, moving close to the Houston size range, as their market extends further south towards the Raleigh, NC area. The actual blackout viewing areas for all 30 clubs likely coincides with *jerrymandering* tactics based off RSN (regional service providers) of cable or dish television dispersions in a local area. To accurately reflect this is beyond the scope of this analysis.

Nevertheless, the correlative factors registered nearly an 80% r-squared for this 3-factor model. This reflects a very solid model for revenues based off all the prior information. Whether this can predict much in the future will be greatly affected by television's adapting business model. Learning from radio and print, who fell victim to outdated business models, TV has an easier path, in theory, based off content and a needy customer. For TV, the preferred output device and connection method of the consumer (the back of the supply chain), are the challenges. The sports content adaptability comes from the segments, insights and graphics, instead of the product changes. Whether media uses an open or closed response to threats to revenues and profits will determine fates. The consumer will find ways to gain their media fixes; or, they will shift their choices.



FINANCIAL MODEL IN MLB



The above represents an overall model for the financial side of baseball. Revenues are tied to home attendance, local television markets, popularity and deals made in other areas, while concessions, merchandising, and parking fees come via fans spending desires. Revenue sharing data is available for some seasons, but as noted, not for all seasons in the recent span. The smaller market teams gain subsidies from the larger market teams, on a schedule negotiated in the CBA and determined by MLB commissioner's office in New York.

A key asset too for the small market teams is their drafting and development of prospects (near bottom). The valuation of these assets make or break whether they can compete on the *Fan* model (to the far right) with the

likes of the Yankees, Red Sox, Dodgers, Angels, or even, the Cubs. Further analysis of this indirectly-tied-to-asset/revenue side-of-the-model is discussed in *prospect valuation* section. A linear regression was done for the salary variable and prospects and ties in well to this overall framework.

To the opposite side, salaries do highly correlate to winning more games; are driven by front offices that are divided (listed as such in most major publications/online) into baseball operations and the business side. The baseball operations department takes the most visible blame – GMs, scouting, player development and player acquisitions – while the business side operates more behind the scenes, but has greater influence from team to team, year to year. The marketing/media heads, PR, the legal department, MLB park operations, and the various aspects to getting fans to the park with attention to details, making it a memorable experience, win or lose, must happen. Those positions do not necessarily operate for acclaim, aside from keeping happy who signs their checks: ownerships, whether they are individual, corporate, or group held.

Below lists many of the powerful sponsors in MLB. Included are many of the most recognizable businesses, with \$100B or more in sales, or trillions in assets (Bank of America), dwarfing the relative size of the National Pastime. These partners provide most of the lucrative advertising and signage deals one sees at the ballpark, creating revenues. To go with naming rights deals for new facilities (and often changing names – see: *Clinton*), the flow of monies to ball teams ties heavily into branding – the winning – one installs. Teams recognized as good bets for quality seasons add brands easily. Some other brands, like Anheuser-Bush are MLB-wide, but also have long, intimate connections (the Cardinals).

Official Sponsors of MLB Advanced Media

(MLB Advanced Media, LP. 2014)

Anheuser-Busch	Gatorade	Pepsi-Cola
Bank of America	General Motors	Qualcomm
Bayer	(Chevrolet)	Samsung
Church & Dwight	Head and Shoulders	Scotts
EMC	MasterCard International	SiriusXM
Ford	Microsoft	T-Mobile
Freecreditscore.com	Nike	U.S. Army

Official Sponsors of MLB Properties

Alka Seltzer & Alka	Frito-Lay	MasterCard International
Seltzer Plus	Gatorade	Nike
Anheuser-Busch	General Motors	Pepsi-Cola
Bank of America	(Chevrolet)	Scotts
Bayer Advanced Aspirin	Gillette	SiriusXM
Church & Dwight	Head & Shoulders	T-Mobile
Firestone	Kellogg's	Taco Bell

Summary: Business Model and Its Future

MLB has grown substantially in the past 25 years in absolute terms of revenues generated, fixed assets acquired (stadiums), and media deals that put baseball on a seemingly stable footing for years to come. Commissioner Bud Selig, for all his detractors, has affected the game most positively on this, the most important aspect for owners: the business operations of the sport. Thus, his twenty year reign as commissioner has not been in vein in that regard.

With 30 teams since 1998, nearly all have reached the post-season. Teams have garnered media benefits, either by subsidy, or leveraging the weight of their market sizes. The game has extremes though. The powerful Yankees with their large market continue to buy the top dollar talent as Masahiro Tanaka's addition proved. Yet, smaller markets, like the Pirates and Oakland, and now a mid-market Washington, seem able to compete through frugality and sound business and baseball decisions. Their recent post season attendance and rosters going forward look less hampered by longstanding prior woes in the case of Pirates and Nationals/Expos.

Others though, particularly San Diego and Kansas City, seem unable to make that last jump. The Padres have a stadium that plays against them – or rather – they refuse to adapt to its nature, either by add speed merchants or moving fences in to level the playing field against opponents. Or more importantly: draft, acquire, and pay accordingly. Kansas City never seems quite confident or able to either make that last acquisition, or stick with a prospect build to success. But they must adapt; or continue their woeful ways.

The CBA will be reopened after the 2016 season. Issues such as free agent player signings, qualifying offers, service times on arbitration, and international draft schemas will undoubtedly be hot issues to discuss. Recent extensions to young players, which curtails free agent salaries, may find itself under fire.

Enormous TV deals are linked to recent court/FCC decisions on net neutrality and how cable/multimedia conglomerates will package such plans to consumers. The coming years could see one's favorite sports team focusing substantially more on making RSNs work out to their revenue advantage than on any successful baseball team plan. As Jim Crane, Houston owner, found out in dealing with Comcast Houston, such efforts can ultimately be in a court's hands.

Salary escalation in baseball is nothing new. Since free agency began, rising free agents costs have been a ripe topic for the discontented, and a defensive situation for those satisfied. The prior two topics will create only more of this particular topic's discussion as some teams will mimic large-market behaviors, and risk more dollars in hopes of getting that last piece to the puzzle.

Prospects found in international markets provide fresh avenues for both large and small market teams. The Oakland A's landed Yoenis Cespedes; Dodgers corralled Yasiel Puig; and other teams are in this talent market from Korea, Australia, to the Caribbean islands, and Europe, at some future time.

The Fan Model: Just Win Baby

The *Fan Model* is about what actually fuels a team to win – the runs scored and allowed; the statistical factors that generate both objective and subjective ratings surrounding players, but are tied also their market value, long-term. It is called the fan model because what does a fan come to see: winning baseball which results in playoffs and championships. They do not come to see returns on investment, assets, or equity; the best \$/WAR efficiency; net working capital increases; book or market value maximized; or how much profit an owner retains after the books have been thoroughly massaged according to GAAP principles or IFRS guidelines. Those things are relevant; but are mindless minutia to a fan on a 90-degree sunny day drinking a cold one and eating Dodger dogs.

They do come to see whether Mike Trout can produce more runs and exciting plays than even Willie Mays, while moving the Angels back to the AL West title; or whether Clayton Kershaw will put up Cy Young-worthy numbers to lead the Dodgers back to the World Series after a quarter century plus absence. The 21st century fans do like their numbers, a plenty, as the business side has bled over to create so many new statistical measures, one is hard pressed to catalog and correlate them all. But once you are winning regularly, with a realistic post-season chance regularly occurring, do the diehards in fan bases actually care about owners' profits; player's salaries; the size of a television deals; or advertising revenues from stadium rights?

Not as such; until these factors visibly influenced a team's winning culture.

Even the modern fan will go back to OBP, SLG, FIP, ERA+, OPS+, RC, HRs, RBIs, BA, RISP, Won-Loss, and WAR too, the cacophony of stats that will appease some, and irk others. But it becomes less about dollars and more about baseball players in a view from the bleachers while drinking Old Style in Chicago too.

If transported back four score in time, modest fans were not able to access the plethora of documents related to who got what and for how long (no free agency either). The financials were deemed private enough. Obsessive-like curiosity was not there; privacy had a firm enough home. Even newspapers when they got bits and pieces, or allowed access to such items, had no clear visioning, or structure to the game's financials. (Still hard – but motivated enough – one can get at the information that is publicly available; or become Eric Snowden.) But most importantly, those modest fans *then* could get only batting averages, RBIs, Wins, ERA, saves, and that's all that really mattered, to them.

One too does not know what to care about until you likely tell them, some might suggest, is what drives current awareness (unless your job requires it). All most fans knew about was what the print and radio media told them to care about; add the ballpark visits, the interactions with players, and that was at the limit of knowledge and caring and relevant stories. If you lived too in New York, you got a media market keen to prop up the Yankees in down years, which were few and far between. The other newspapers did their battles to promote the club – most favorable statistics did that too – alongside the *feel good* player puff pieces. The fan model *then* focused on what seemed statistically relevant; crude measures, if matched against the present abilities of big data captures.

This is not wrong, just different. (What we know changes exponentially.)

So, what *now* drives the make-up of this fan model?

The variables tweak as additional technology narrow gaps in information. Such information helped people working in baseball (if possessing substantial simulations, modeling, statistical backgrounds) and changed what matters. For example, one looked at fielding %, attempts and errors as crude ways to measure fielding prowess. Now, *at least* 68 defined zones, tracking of hit ball speeds, landing spot precision, and scouting done by fans and statheads alike on a fielder's abilities inform as pro baseball went Big Data, big time, by 2014.

Project Scoresheet Scoring System Batted Ball Location Codes Diagram

Copyright 1989 Project Scoresheet Inc.

BATTED BALL LOCATION CODES consist of the batted ball TYPE *plus* LOCATION. Batted ball type codes are: G=Ground Ball, L=Line Drive, P=Pop Fly, F=Fly Ball. For bunts, put a "B" before the appropriate code (e.g., "BG" or "BP").

The LOCATION CODES used are as follows:

OUTS -- the sector where the batted ball is fielded. EXAMPLES: 63/G6M, 7/F7, 3/P3DF, 8/L8S.

GROUND BALL HITS to the OUTFIELD -- the sector where the ball goes *through* the infield (i.e., 3, 34, 4, 4M, 6M, 6, 56 or 5). EXAMPLES: S7/G56, D9/G3, S8/G4M.

GROUND BALL HITS to the INFIELD -- the sector where the batted ball is fielded *or* stops rolling. EXAMPLES: S3/BG23, S6/G56D.

LINE DRIVE, POP FLY OR FLY BALL HITS -- the sector where the ball first drops (*not* where it rolls). EXAMPLES: S8/L8S, S6/P56D, D7/F7LD, T9/F89XD.

HOME RUNS -- the sector where the ball leaves the field. EXAMPLES: HR/F7D, HR/F89XD. Score inside-the-park HRs like other base hits (E.G. HR8/L8XD).

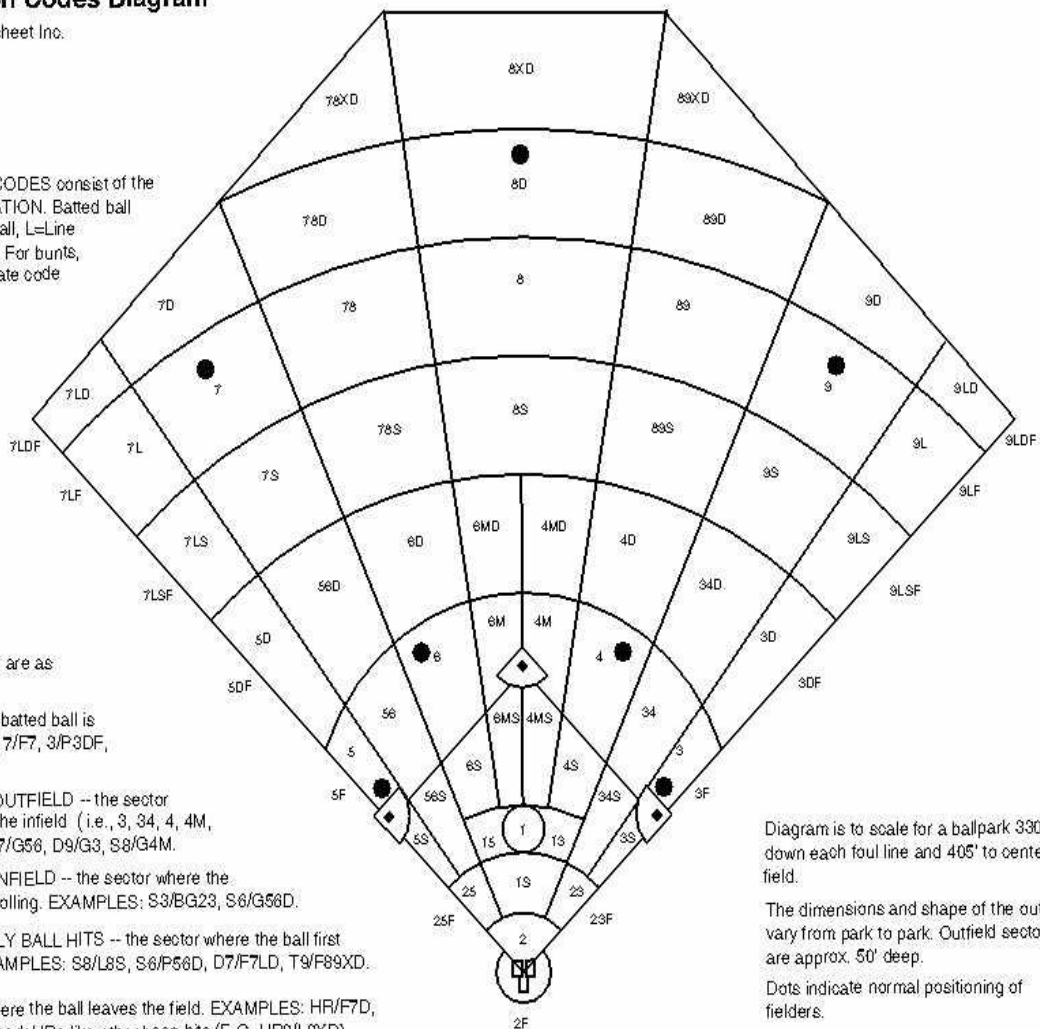


Diagram is to scale for a ballpark 330' down each foul line and 405' to center field.

The dimensions and shape of the outfield vary from park to park. Outfield sectors are approx. 50' deep.

Dots indicate normal positioning of fielders.

The Big Data project: *Retrosheet.org* has cataloged historical data from box scores and accounts, improving databases on players from the pre-transistor days. They have shared their results to improve the knowledge in the game.

Recently, Mitchel Lichtman recounted his ties to fielding measurement developments over the course of 30 years in *10 Lessons I Have Learned about Defensive Statistics* (May 2014):

“One of the first things I developed in the mid-’80s was a zone-based defensive metric (I don’t know that I called it anything in particular at the time), using the *Project Scoresheet* batted-ball location data. At around the same time, I had heard that Sherri Nichols and Pete Decoursey, two other early baseball researchers, were doing the same thing. They called their metric defensive average, not to be confused with the traditional fielding average.

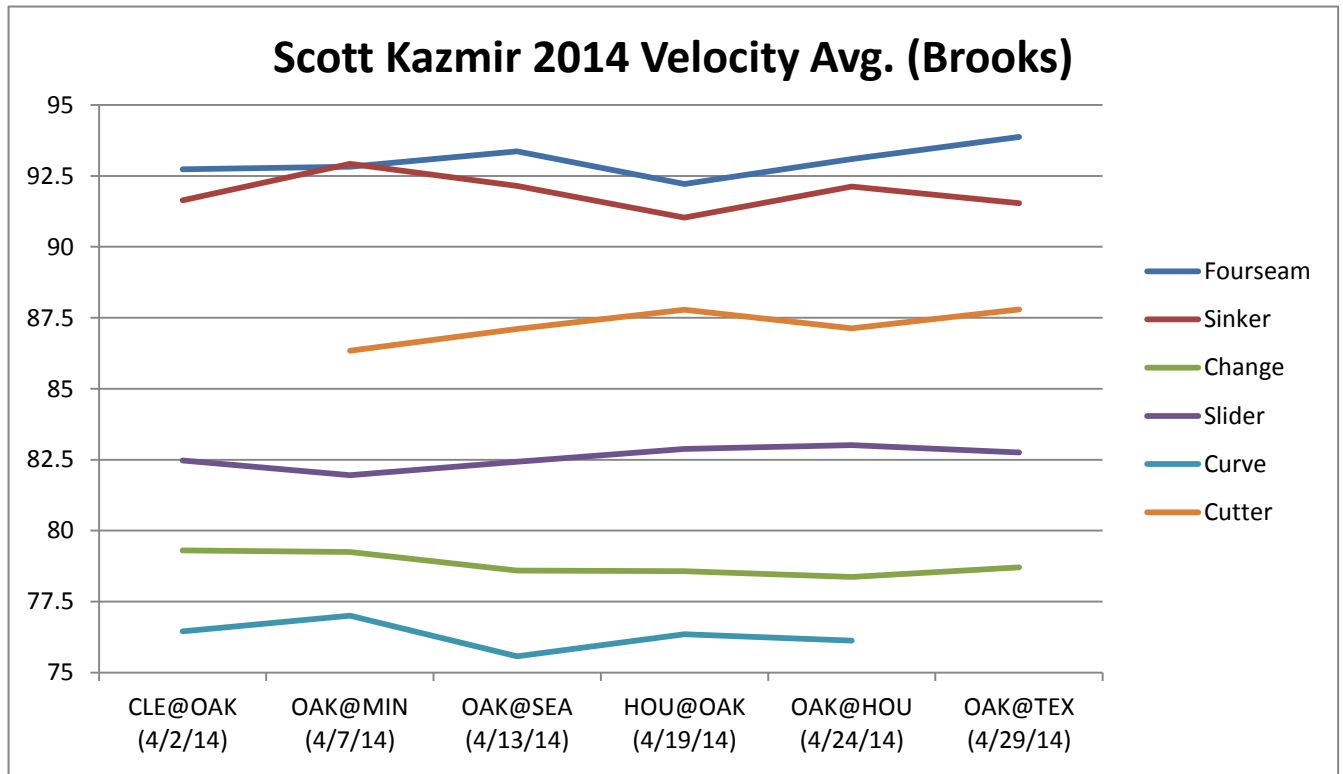
A few years later, STATS, in 1989 or 1990, came out with its own Zone Rating (ZR) and presented it in its first annual Baseball Scoreboard. I think that all of us developed our own version of ‘zone rating’ independently, as neither Nichols’ nor my work was disseminated broadly, and in fact, few people knew of their existence. Remember, this was all pre-internet, or at the very least, at the beginning of the internet, when a lot of baseball research was being shared and discussed on Usenet and other little-known “electronic bulletin boards” and the like.

Around 2000, I think, STATS came up with an Ultimate Zone Rating, whereby it assigned different values to catches or non-catches in various locations on the field for each fielder, rather than using one single zone for each fielder (and some shared zones). The assumption was that not every ball in a fielder’s zone was equally difficult to catch even though ZR treated them all the same. That might seem obvious today, but as with every new discovery or invention, it was apparently not so obvious at the time, and was considered somewhat of a breakthrough in defensive evaluation—at least by me.

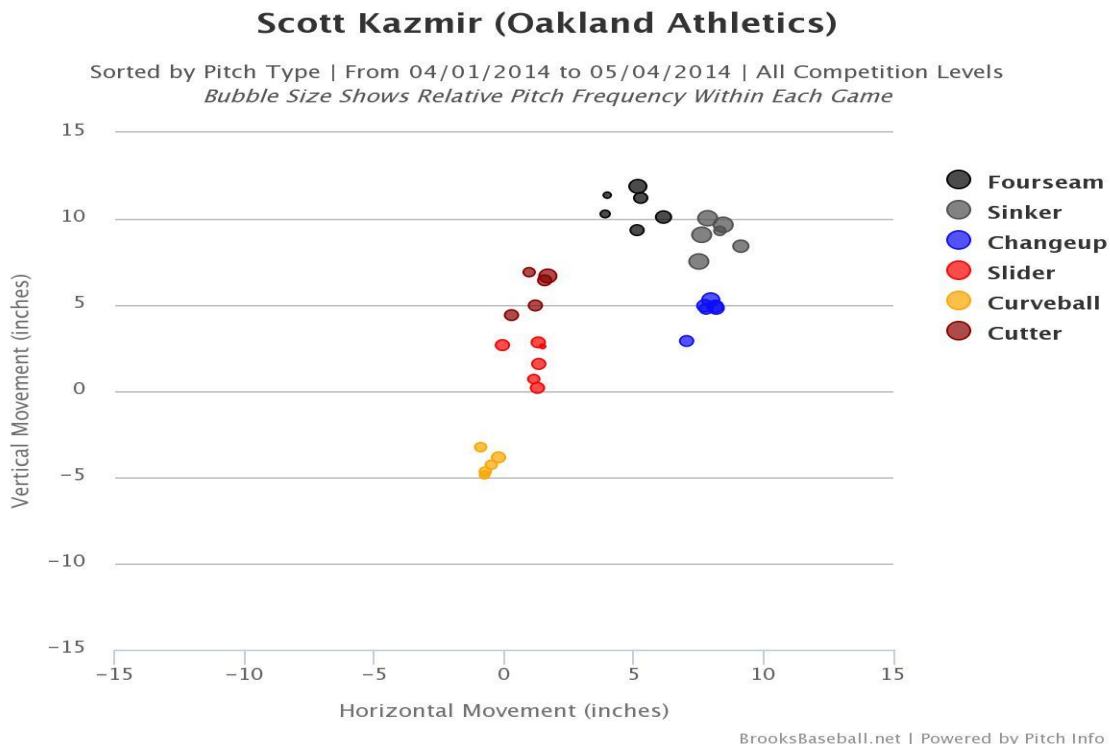
For some reason, STATS abandoned this methodology after its initial presentation in the Scoreboard, and it was never heard from again, until John Dewan resurrected a modern, more advanced version, the plus-minus (PM), and eventually defensive runs saved (DRS), with BIS almost 10 years later. So the credit for the original Ultimate Zone Rating, goes to STATS and not to me. I loved the concept and enthusiastically ran with it. I also kept the name, which was eventually shortened to UZR...

For some reason, my version of UZR has gained a lot of traction over the years and is often considered the de facto modern sabermetric defensive metric, despite the fact that there are many equally good and similar ones, including John Dewan’s DRS, David Pinto’s PMR, Humphrey’s DRA, Shane Jensen’s SAFE, Sean Smith’s Total Zone, and others. I have to give John Dewan and everyone else at the original STATS company a lot of credit for never claiming that UZR was their original idea (which it was).”

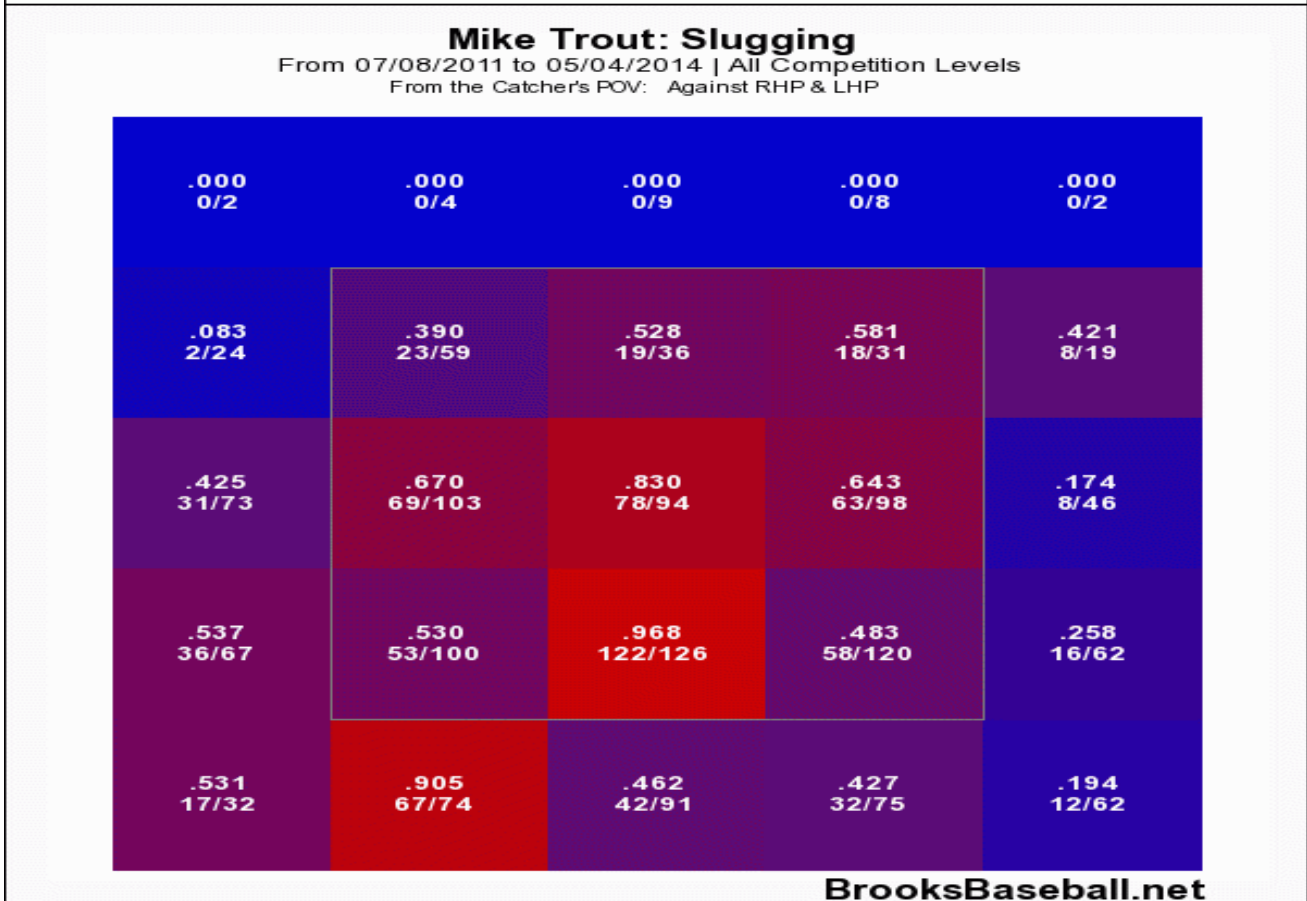
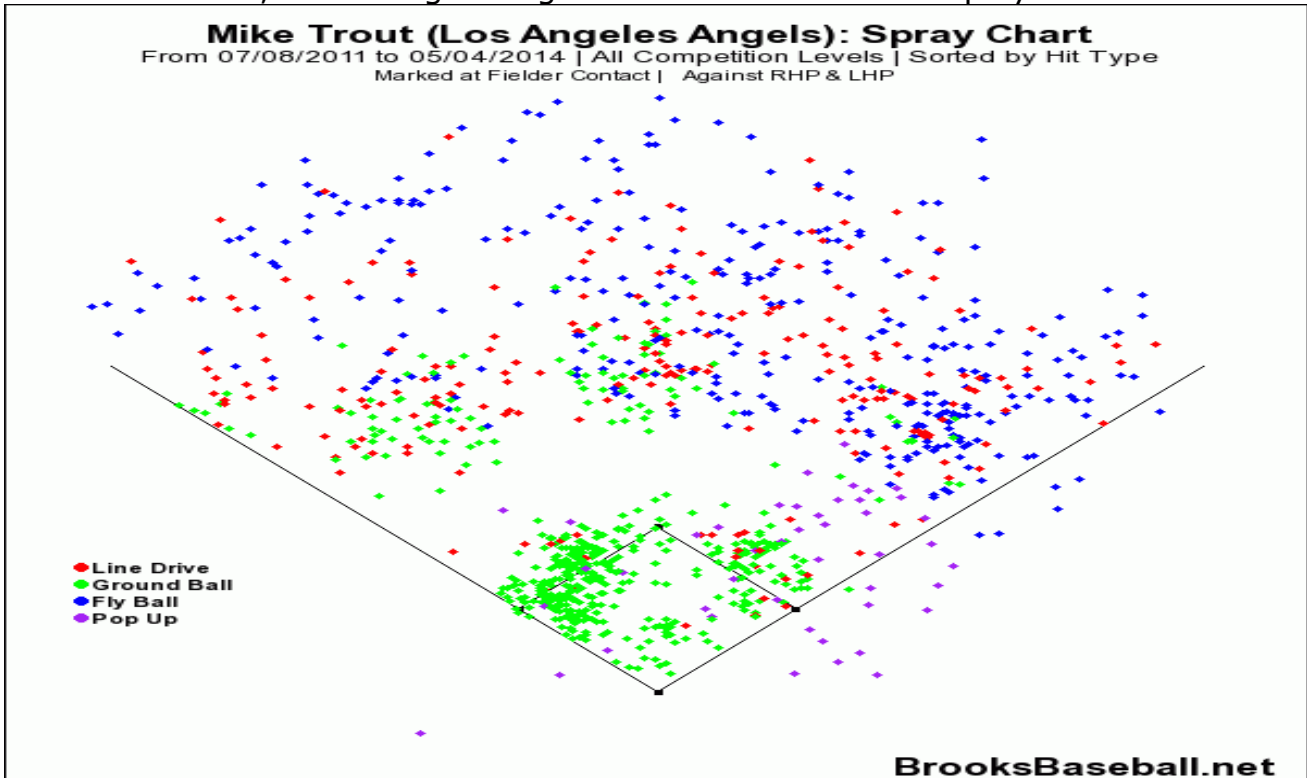
As Lichtman stated, fielding went through phases in the sabermetric community; and has likely a couple more leaps left before a standard is reached.



Pitchers too are dissected from video mechanics, release points, 2-dimensional movements per pitch, speed of pitch (the 3rd dimension), and the outcomes at the plate – location and results on each batter – as discussed in *Taft. Brooks Baseball* and *Fangraphs* provide a treasure trove of data since 2007.



Hitters get the same big data treatments. The following two charts, from Brooks Baseball, reflect big data gathered on the best MLB player in 2014.



Moore's law applies to this growth of data analytics, deriving much out of the computing age's formation and explosion (1968 – Intel; 1975-1976 – Microsoft, Apple; 1984 – Cisco; 1998 – Google) and influences baseball intimately as 2014 brought for a whole new age of tech on the baseball fields.

As this author noted in the preface, fantasy/ rotisserie baseball took off in the 1980s-1990s. Quickening access to data (even raw datasets) was the start of understanding the game on new levels. From those data bytes, a greater statistical appreciation grew, and exploitation of it was bound to come about – even if the genesis of it was *The Wall Street cum Freaks and Geeks* crowd.

One such tool, designed for fantasy play, was Player Empirical Comparison and Optimization Test Algorithm (PECOTA) developed by Nate Silver in 2002-3 while working at *Baseball Prospectus*. His system was marketed for the fantasy baseball crowd – such as this author was then – but the uses are prevalent for standard baseball evaluations. Using comparisons to historical players and their production by age, similarity scores (Bill James, once again) and Gary Huckabay's *Vlad* forecast model at *Baseball Prospectus*, Silver created yet another model for players.

From *Wikipedia*, PECOTA's broadly defined model parameters include:

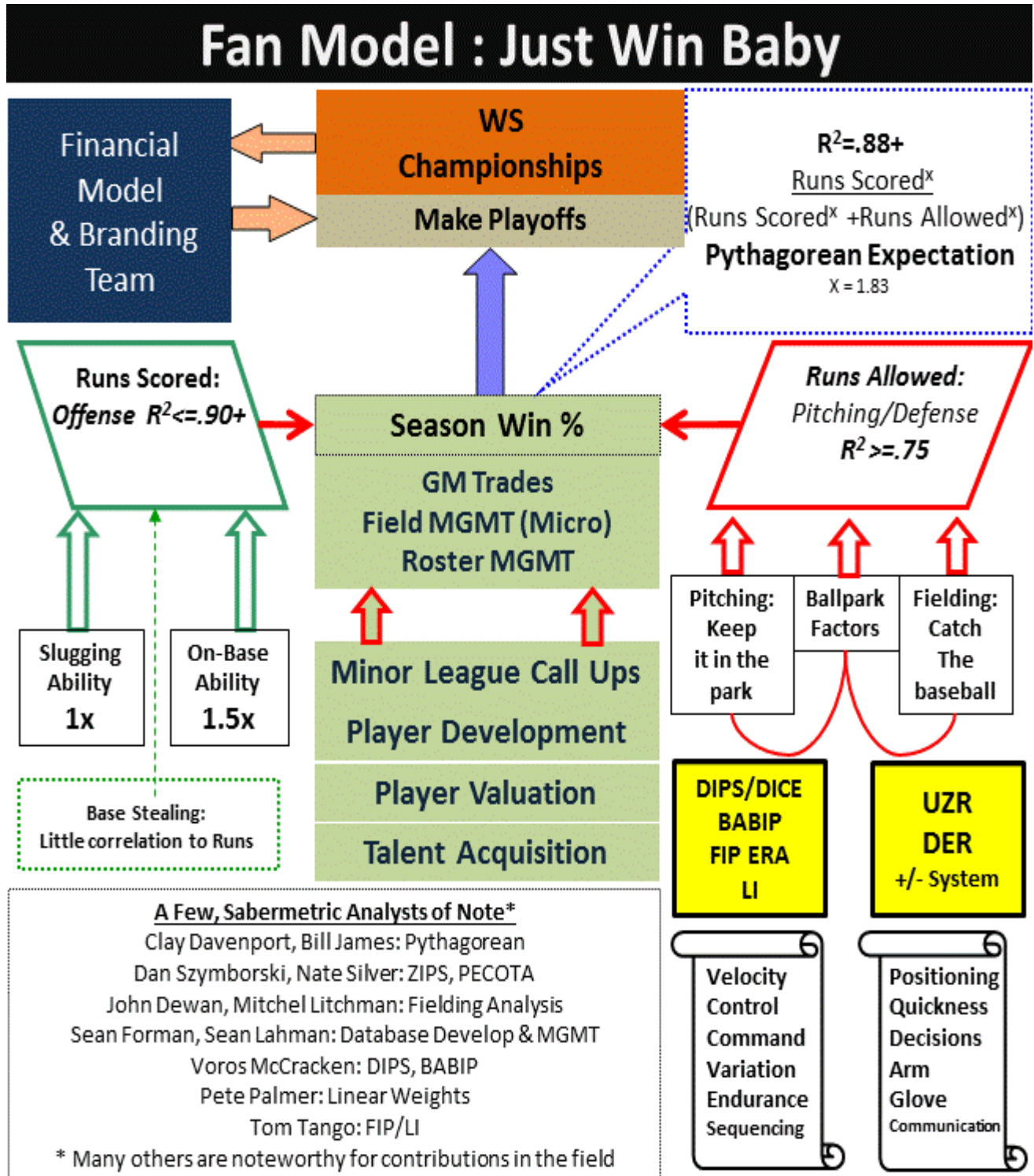
1. Production metrics – such as batting average, isolated power, and unintentional walk rate for hitters, or strikeout rate and groundball rate for pitchers.
2. Usage metrics, including career length and plate appearances or innings pitched.
3. Phenotypic attributes, including handedness, height, weight, career length (for major leaguers), and minor league level (for prospects).
4. Fielding Position (for hitters) or starting/relief role (for pitchers). In most cases, the database is large enough to provide a meaningfully large set of appropriate comparable tracks. When it isn't, the program is designed to 'cheat' by expanding its tolerance for dissimilar players until a reasonable sample size is reached.

Since *Moneyball* came out, this continued advent of statistical redefinition came through this simplistically-stated cycle: from Clay Davenports' EqA and DT, to WARP, VORP, Win Shares, PECOTA, wOBA, and WAR, thus moving towards a firmer, measurably precise era. (Apologies for comparing in one broad brush.) Pitching came through a redefinition due to Robert "Voros" McCracken splitting events into controllable (BB, K, HR, HB); versus balls in play (BABIP) uncontrollable circumstances, creating DIPS. This seminal step created *FIP ERA (Tango)* that is now much more an accurate reflection of what a pitcher's value is. Together they measured of whether he keeps balls in the yard, runners off the bases, and reduces the outs his defense has to get him per outing (even as such outings get shorter and shorter as we have noted in the *Pitching* section.)

Bullpen effectiveness is tied to a *Leverage Index* (LI). This reflects the stress depending on the score deficit/surplus, outs, runners on, and top or

bottom of inning factors. Many more ways pop up daily or monthly on *Fangraphs*, *Baseball Prospectus*, and other popular sites to reassess statistical importance of factors.

Thus, a fan model just ties the *Macro* factors together (below):



From prior discussions, the fan model above breaks down to one primary task and three second-level, significant to all franchise-improving tasks:

Overall Wins: Runs Scored/Allowed (Pythagoras winning% equation)

- Runs Scored – OBP, SLG, SB (wOBA, Linear Weight event measures)
- Runs Allowed – FIP, DIPS, BABIP, LI, DER, UZR, Ballpark Factors
- Player Acquisition and Development – Draft success, prospect rankings and valuation, and this talent moving up for rostering or trading

A Brief Detour to Microsabermetrics and Tactful Discussions

Below these specified measures and important tasks lie many Microsabermetric factors such as: event sequencing probabilities (Markovian); pitch type usage, velocity, movement, strike zone (locating) and pitch counts/leverage indicators; contact rates, swing-rates (in and outside the strike zone); fielding shifts and hitter spray patterns; injury factors/age curves; platoon splits; bullpen usage and best design; and optimal lineup construction, to name a few in their broadest strokes.

These *micro* factors (loosely identified above) have been analyzed in different books (Cook), articles (James), and now, by websites (*Baseball Prospectus* and *Fangraphs*) over the past fifty years. Most reach their own conclusions based off the knowledge and data available in their timeframes.

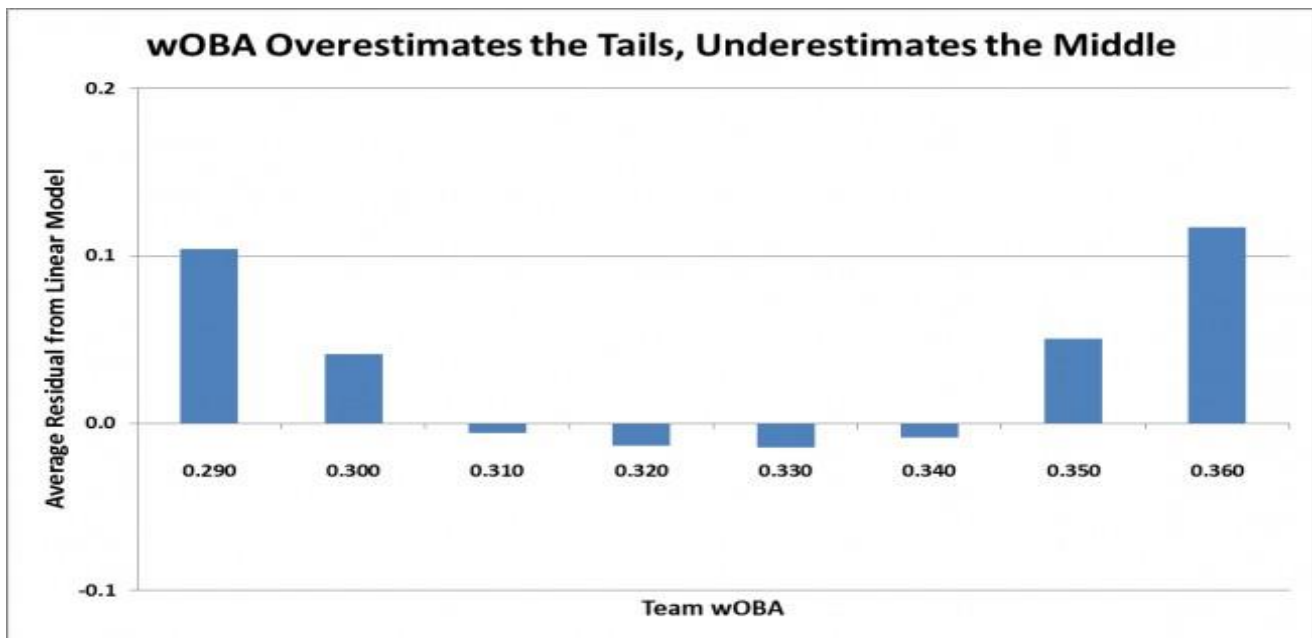
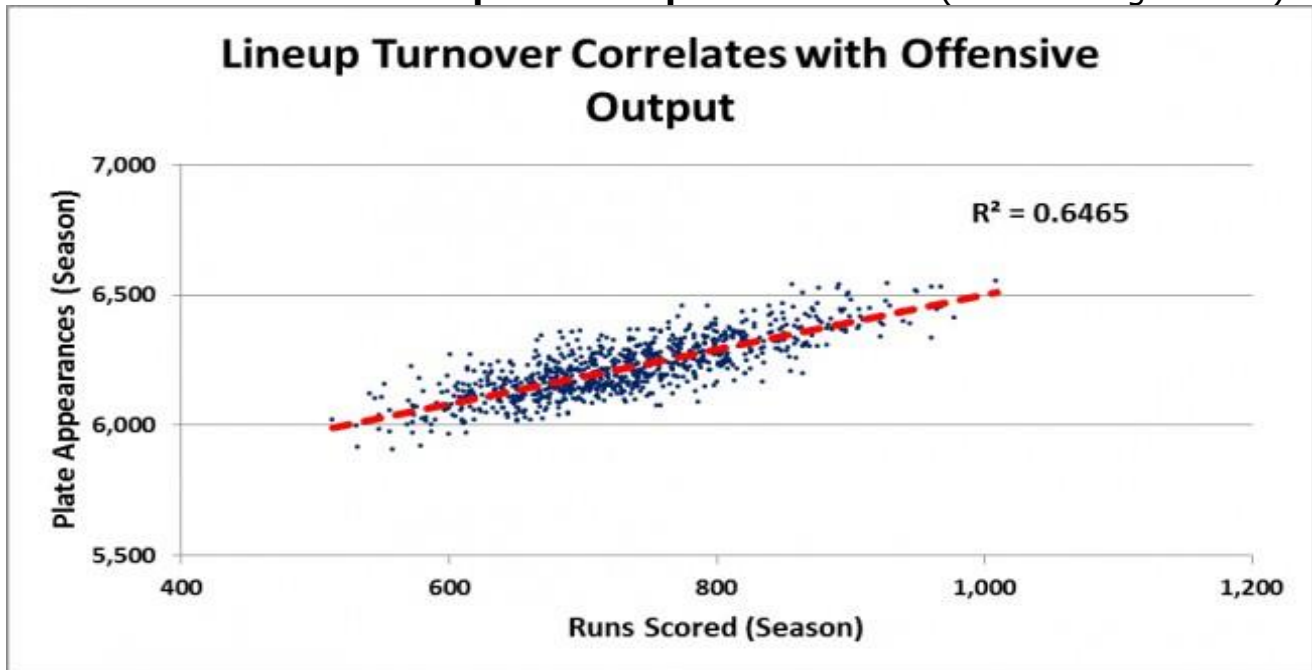
If potentially contentious conclusions arose, depending on the voracity of the claimant, this resulted in backlash quite often – especially among those that found such ideas antithetical to their perceptions in the game. Dismissed usually was the insight, before tested, because baseball has always been played, “a certain way” said the gatekeepers of the sport. Leaving aside, the game evolved so much through its first 30, 40 or 60 seasons, that: more evolution has occurred, thereafter; is inevitable; and is worthwhile to the sport’s continued popularity.

A few took up the ideas; and benefited greatly until others saw the future.

This sidebar would generate lengthy discussions into realms beyond the scope of this one book, but are necessary. However, such topics should be an entire book topic in baseball’s 21st century evolving history. Baseball’s burgeoning ‘Big Data’ era will undoubtedly inspire such a project, culminating in far greater understanding of how microsabermetrics affect macrosabermetrics.

That said, sometimes, sabermetricians are more about asserting their intellectual abilities and debunking and dismissing others, brutally, than promoting any reasonable and likeable conversations. Like the non-saber crowd, they have heated conversations and *ad hominem* retorts, unrelated to neutral numbers. Snark has virally infected the conversation. So, baseball does bring out the very best, and worst, in people. This author is as complicit as others.

Microsabermetrics Sampler: Lineup Construction (Wolfersberger 2014)



The Hardball Times Jesse Wolfersberger wrote a pointed piece on the above graphs, detailing his discovery of misvaluing wOBA:

“Going back to the above graph[s], you can see the groups at the top and bottom of the spectrum are underestimated by about one-tenth of a run per game, and the teams near the mean are overestimated by about one-hundredth of a run per game. Why less in the middle than the ends? There are more teams there. Offense in baseball follows a normal distribution, where there are more teams near the average and fewer teams on the extremes.

Since there are more teams near the middle, the linear trend fits those teams closer.”

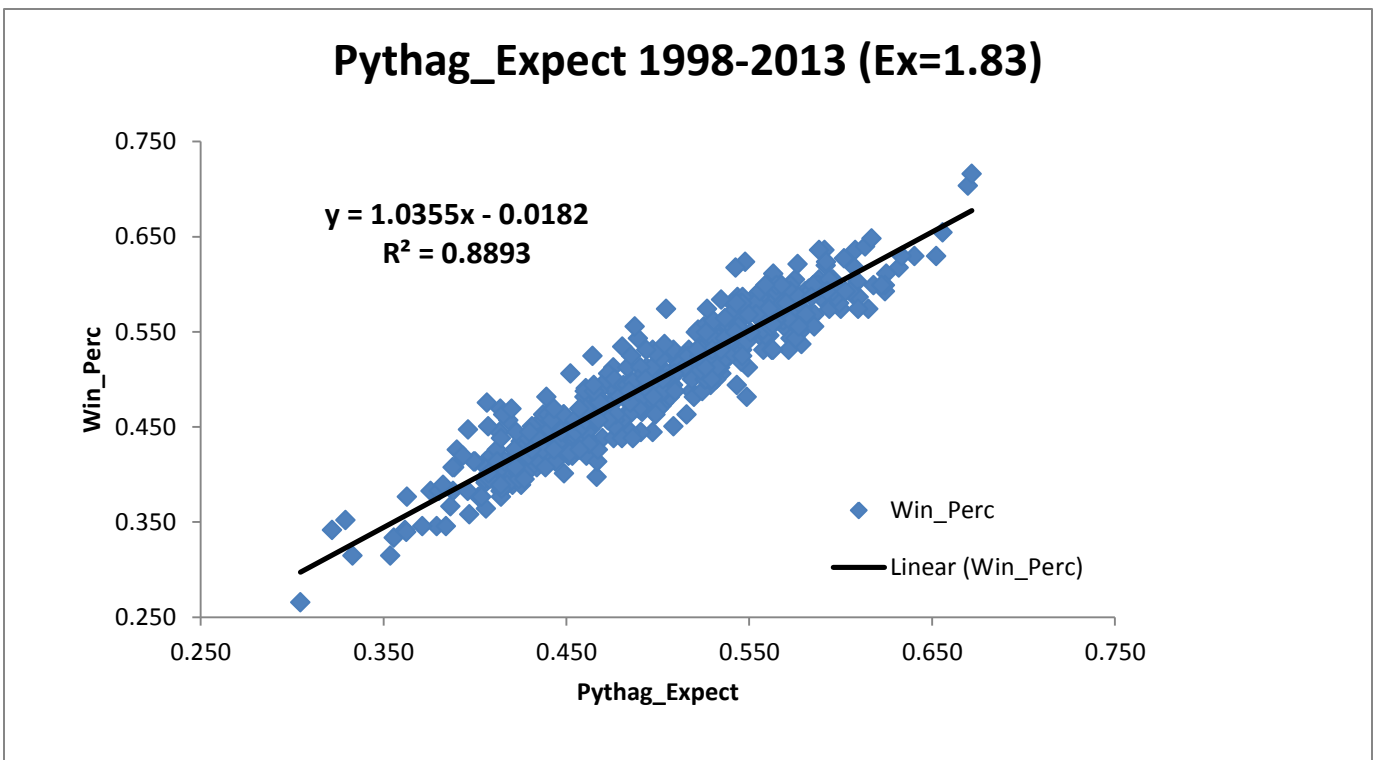
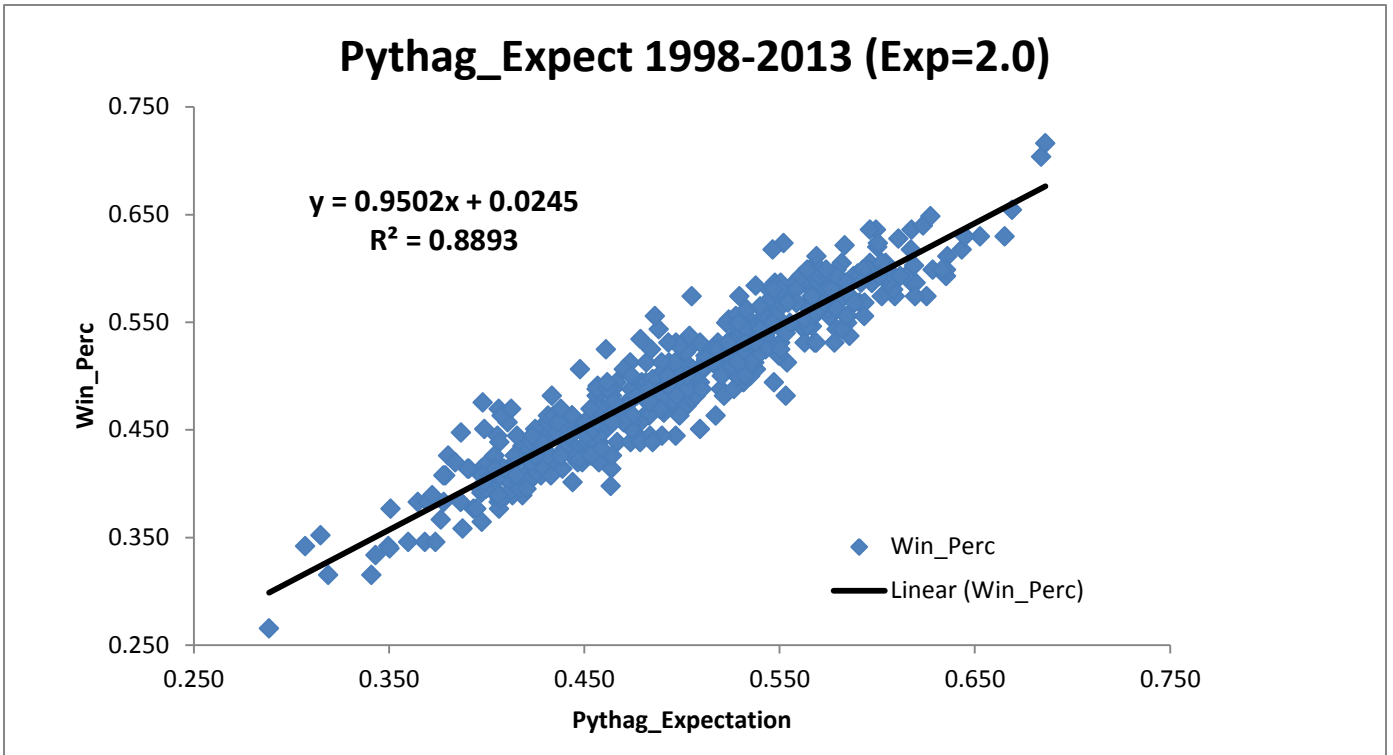
Thus, the *outlier effect*: those teams that can be discussed in some detail.

Pythagorean Run Differential

Run differential is the easiest concept to understand. You only win if you consistently outscore your opponent. You can generally affect this by: creating a very robust offense; having top end pitching that keeps the ball in the park, strikeouts tons of batters, and walks few of them; or, you find eight *gold glove* men to catch everything in sight that still give you enough offensive muscle.

The design of what a team does more or less to influence this Pythagorean equation is a partly a function of where you are at: ballpark factors. If you are in Colorado, in the 1990s, you had a run scoring machine that couldn't field that well, and pitchers broke out in cold sweats in the mile high atmosphere. If you played in New York, the Bronx, you put bets on lefty hitters that liked to sky balls down a friendly 296/314 foot right field line; and avoided righty power alley mashers because left-center, "Death Valley", countered an otherwise good player's abilities to gap balls. Wrigley – homer friendly to Waveland with the happy breezes in summertime, but the friendly confines plays differently with cold weather or the breeze blowing in off the lake. Boston – lefties that can go opposite field, love piling up doubles off the Green Monster. Other places, Seattle for instance, pitchers like quite a bit. Dodger Stadium: at night, a pitcher's delight. Oakland: no park has more foul territory to assist the pitching in outs; and notice how they have found pitchers to accommodate this quirk. So this too is part weather, *random* enough breezes, and ballpark configurations – Clay Davenport was a meteorologist out of college – plays a role in how you think to construct a team to get largest differentials from what players fit such molds.

But the grand equation at the top – the differential – is fairly set. No one has divined that many ways to win 90 games without outscoring their opponents enough, even if they amassed shutouts in plenty of their losses. It is not purely random; its follows a predictable route. Below are Pythagorean Run Differentials v. Actual Winning% for 1998-2013 for all 30 teams with different exponents.

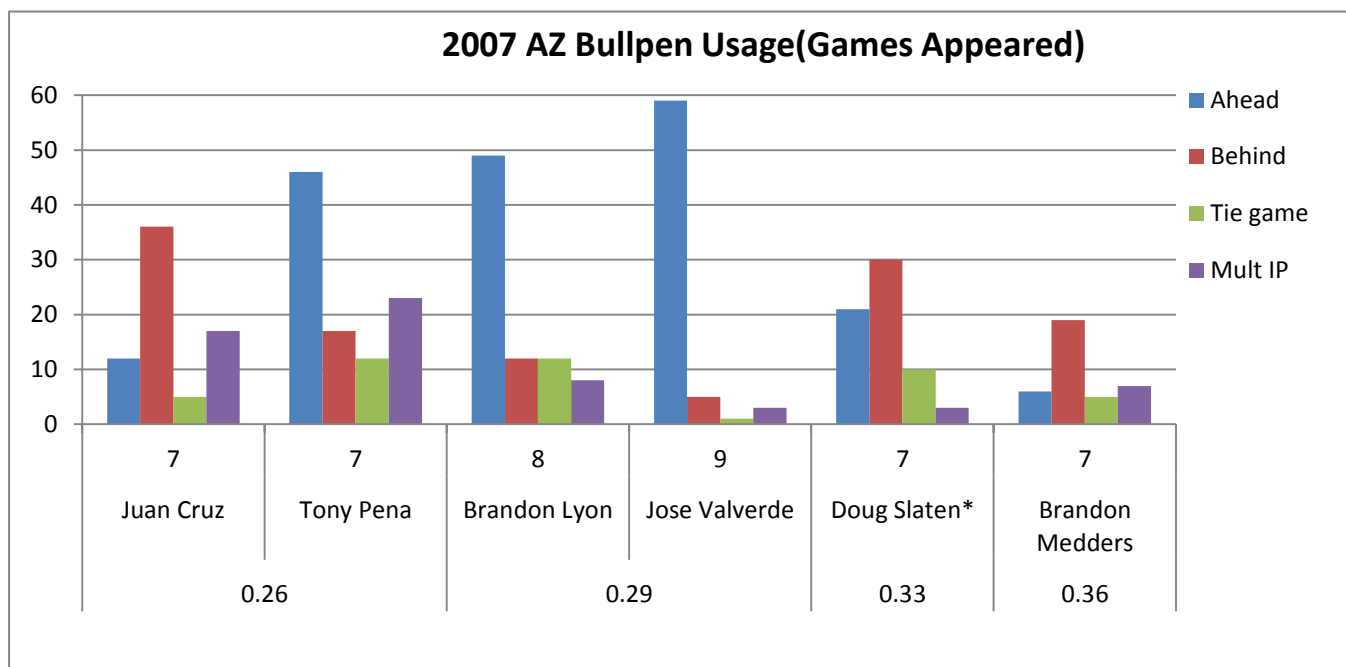


A better snapshot is to look at the regression statistics of this particular formula for various exponent levels:

<i>Regression Statistics</i>	<i>EXP=1.83</i>	<i>EXP=2.00</i>	<i>EXP=1.9</i>
Multiple R	94.3%	94.3%	94.3%
R Square	88.9%	88.9%	88.9%
Adjusted R Square	88.9%	88.9%	88.9%
Standard Error	0.024180	0.024178	0.024179
Observations	480	480	480
<i>Coefficients</i>			
Intercept	-0.0182	0.0245	0.0003
Pythag_Expect	1.04	0.95	1.00
<i>Standard Error</i>			
Intercept	0.0084	0.0077	0.0081
Pythag_Expect	0.0167	0.0153	0.0161
<i>t Stat</i>			
Intercept	-2.156	3.159	0.040
Pythag_Expect	61.97	61.97	61.97

As noted, in the fan model: $\text{Pythagorean Expectation} = \frac{\text{Runs Scored}^{\text{EXP}}}{\text{Runs Scored}^{\text{EXP}} + \text{Runs Allowed}^{\text{EXP}}}$

Outlier #1, Arizona 2007. The D-backs had a 90 win season without scoring more runs than their opponents (712 RS-732 RA), 11+ win differential. Their best weapon: an efficient and lucky bullpen. Tony Pena Jr., Brandon Lyon, Juan Cruz, Doug Slaten and Jose Valverde were key cogs to the success. They were below the league average in inherited runners scoring, which was **32%**. And their roles were defined by game situations as the chart below shows.



As roles were well-defined, the 7th inning was pivotal: Pena handled games Arizona was ahead 46 times; Cruz got the call in behind games, and Slaten, the LOOGY, Medders, was the blow out man. Lyon took the 8th inning and Valverde the 9th and closed out at an 87% save rate while the league average sat at 65% (team was 77%). Cruz and Pena worked multiple innings too, showing confidence in them grew. Pena, Lyon, Valverde and Slaten pitched back to back days 17-21 times apiece, reflecting little deviation from what worked. The Leverage Index average for Pena, Lyon and Valverde was high (well above 1), while the rest of the bullpen did not sniff at 1.0 (Sports Reference, LLC. 2007).

Nevertheless, as a group they rated average according to *Fangraphs* WAR by reliever corps, ranking 15th.

AZ Relievers	BABIP	HR%	ERA	FIP	XFIP	WAR
Brandon Lyon	0.281	2.20%	2.68	3.4	4.63	1.4
Jose Valverde	0.258	9.50%	2.66	3.6	3.61	1.4
Tony Pena	0.232	8.20%	3.27	4.3	4.45	0.7
Juan Cruz	0.290	11.10%	3.10	3.70	3.50	0.6

Some 'luck' came from BABIP being substantially lower for all these relievers, but Cruz. The weighted average of over five hundred 2007 relievers BABIP was .2916. Pena and Valverde were well under that. Lyon was well below the league HR/FB% of 8.57%. Only Cruz and Valverde were gopher ball prone per fly balls. In all, in not putting up the FIP or xFIP rates based on their K-rates, BB-rates, and HR/9IP, their actual ERA showed them as a force. (Their defense was ranked 17th by UZR: -3.2; however by TZL, a Sean Smith developed statistic, Arizona improves to 6th overall in both leagues, reflecting some discrepancy. Baseball Info Solutions puts their Defensive Runs Above Average saved at 4th in the NL (37). This reinforces the BABIP -defense was good.)

Outlier #2, Baltimore 2012. Won 93 games while posting a (712RS-705 RA) differential, triggering their first playoff appearance in 15 seasons (1997). This again is an 11+ game differential. The team had familiar names in management positions – Buck Showalter, Dan Duquette (hired late 2011), running the show. The Orioles brought up barely 20-year old 3B Manny Machado, who gave them positive production (1.6 rWAR) on August 9, 2012. But looking at Fangraphs calculated WAR values for segments of the team, the Orioles had no business at all winning 93 games. Their WAR differential put them at 77-85 team by WAR contributions, a +16 differential when using that method. They were very fortunate in a misfortunate season for many teams (see below).

One noticeable occurrence: aside from the Orioles, the Athletics, Reds, Giants, and Nationals all benefited to the upside by 6 or more games. The Giants won the World Series, the others, all gained admittance to the playoffs, rare occurrences for 3 of the 5 teams in the 21st century.

What caused this might be a case of the overall WAR/Run Differential model slightly falling apart to the random variations in baseball play. The intricate

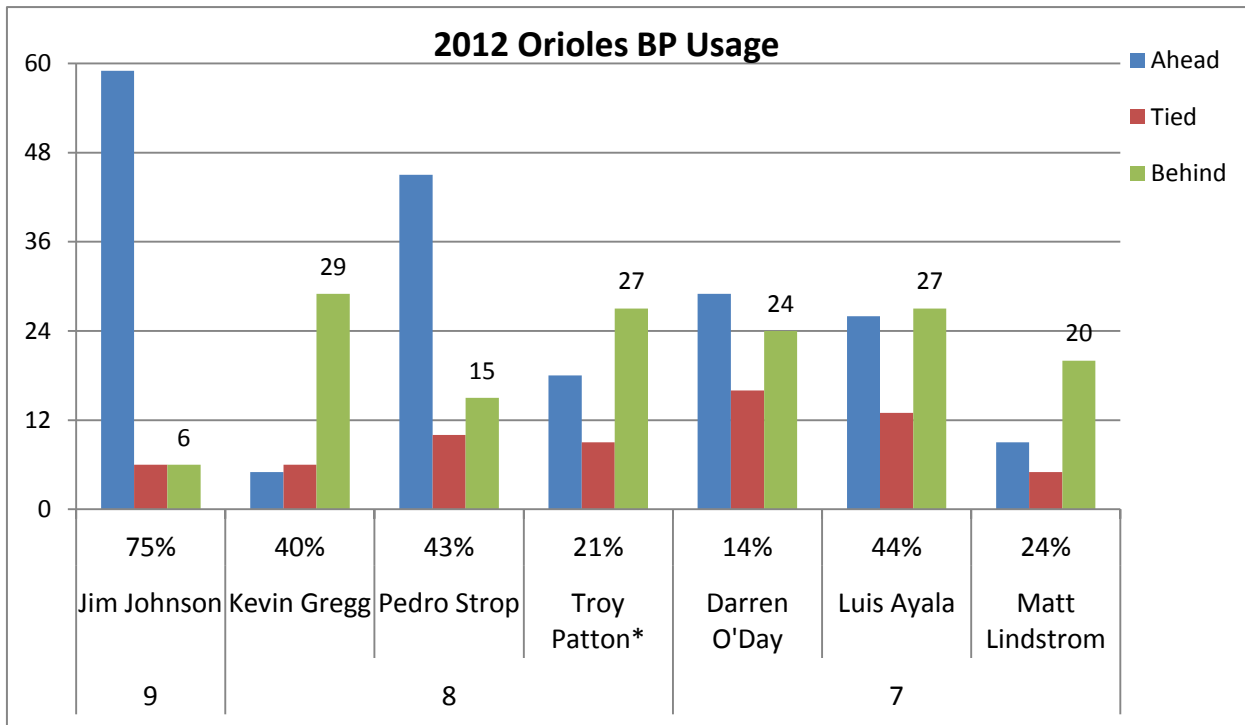
nature of chemistry or sequencing events (which is both random but often an *invisible hand* (call that what you will)) shuffled around the fortunes of the teams.

2012 (Fangraphs)	BP WAR	SP WAR	BAT WAR	Total WAR	WAR Win	Actual	Diff. Record
Orioles	6.2	9.9	12.6	28.7	76.4	93	16.6
Athletics	4.6	13.3	20.1	38	85.7	94	8.3
Reds	6.2	13.4	22.4	42	89.7	97	7.3
Giants	1.3	10.9	27.1	39.3	87	94	7
Nationals	3.4	16.7	24.1	44.2	91.9	98	6.1
Pirates	2.3	8.2	15	25.5	73.2	79	5.8
Dodgers	2	14	16.6	32.6	80.3	86	5.7
Blue Jays	2.5	4.9	12.7	20.1	67.8	73	5.2
Braves	5.7	10.3	26.4	42.4	90.1	94	3.9
Mariners	2.4	10.4	11.3	24.1	71.8	75	3.2
Indians	3	3.3	10.9	17.2	64.9	68	3.1
Padres	1.7	2.7	21	25.4	73.1	76	2.9
White Sox	3.1	13.5	18.8	35.4	83.1	85	1.9
Mets	-0.5	12.4	14.3	26.2	73.9	74	0.1
Rays	6.1	15.5	21.2	42.8	90.5	90	-0.5
Yankees	5.1	14.7	28.7	48.5	96.2	95	-1.2
Rangers	5.6	17.5	24.9	48	95.7	93	-2.7
Tigers	4.2	20.6	18.9	43.7	91.4	88	-3.4
Twins	2.1	2.7	17.1	21.9	69.6	66	-3.6
Cubs	-1.4	8.5	10.4	17.5	65.2	61	-4.2
Angels	0.5	8.3	37	45.8	93.5	89	-4.5
Marlins	2.6	12.3	10.9	25.8	73.5	69	-4.5
Royals	7.2	8.6	13.5	29.3	77	72	-5
Cardinals	0.9	15.6	29.3	45.8	93.5	88	-5.5
Diamondbacks	5.2	13.6	20.4	39.2	86.9	81	-5.9
Phillies	2.7	16.3	20.2	39.2	86.9	81	-5.9
Astros	1.7	5.7	6.2	13.6	61.3	55	-6.3
Rockies	6.3	5.3	11.5	23.1	70.8	64	-6.8
Brewers	1.6	14.7	27.6	43.9	91.6	83	-8.6
Red Sox	4	8	18.9	30.9	78.6	69	-9.6
Total WAR	98	332	570	1000	2431		

Though each of the “lucky” teams were slightly out of balance, each had a strong suit or two. *Meaning*: they all did have something working well enough to be in the top one-third of the MLB. As you can see – the Rays, Yankees, and Rangers were ranked in the top 33% of MLB. Detroit though faced San Fran.

But for the Orioles, their bullpen rode to the rescue – with Jim Johnson the anchor like Valverde was for the Diamondbacks. The graph and table below coincides with the prior analysis on the D-backs. The Orioles leveraged their men well; got ample contributions from setup and swing men; and likely, the entire season was one of luck shining brightly on them. So bright, that 1B Chris Davis, a 50 home run star in 2013, pitched in 2 innings for the Orioles in an extra-inning marathon, getting the win. Davis threw over 90MPH, in an era when putting such

star sluggers on the mound is a risky and much criticized tactic. (See: Jose Canseco.) But former Oriole Babe Ruth must have smiled from above that day as his original team beat his once-cursed second stop in the majors.



Johnson above saved 51 of 54 opportunities in the 9th inning. His efficiency was matched bullpen-wide as Baltimore lost a mere 11 games, while winning (some might call them vulture wins) 32 contests. The average decision total (44.6) reflects Baltimore was not more influenced. However, Baltimore topped out the win% of all BPs at .744; league average .517, std. deviation of .092. The Orioles were below their expected FIP levels based on peripherals and their BABIPs too were substantial lower (weighted avg. 488 Relievers (2012): .2873):

Orioles Bullpen	IP	K/9	BB/9	HR/9	BABIP	LOB%	GB%	HR/FB	ERA	FIP	xFIP
Darren O'Day	67	9.27	1.88	0.81	0.251	85.1%	33.9%	8.2%	2.28	2.96	3.4
Jim Johnson	68.2	5.37	1.97	0.39	0.251	75.6%	62.3%	6.8%	2.49	3.25	3.63
Troy Patton	55.2	7.92	1.94	0.81	0.256	84.6%	50.3%	10.2%	2.43	3.26	3.38
Luis Ayala	75	6.12	1.68	0.84	0.303	80.7%	49.0%	9.0%	2.64	3.67	3.98
Pedro Strop	66.1	7.87	5.02	0.27	0.275	83.2%	64.3%	5.6%	2.44	3.59	4
Brian Matusz	13.1	12.83	2.03	0.68	0.167	90.9%	45.8%	11.1%	1.35	1.89	1.91
Matt Lindstrom	36.1	7.43	2.97	0.5	0.308	76.8%	50.0%	6.5%	2.72	3.48	4.02

The confluence of a BP pitching well above their FIP rates tied nicely to the Orioles 29-9 record in 1-run contests. This led the entire major leagues (137RS-117RA) while the 2012 Cubs were last at 15-27 (151-163).

For the Orioles, their defense was mediocre across all rating systems.

WAR v. Run Differential (What Is It Good For?)

To show the differences between WAR contributions projecting win totals and the variation versus the Runs Differential measurement, the follow table and graph were made. WAR has a lesser R-squared value; and a higher standard error for the 1998-2013 study. In comparison, it produces 139% greater standard error prediction for the years shown. Some seasons, like 1998, 2010, 2012, the difference is above 160%. 1998: the introduction of two new teams would be a plausible driver, as they were not quite the quality of the existent franchises. And so the Yankees thoroughly dominated in 1998 to the tune of 114 wins. As noted above, 2012 produced odd results.

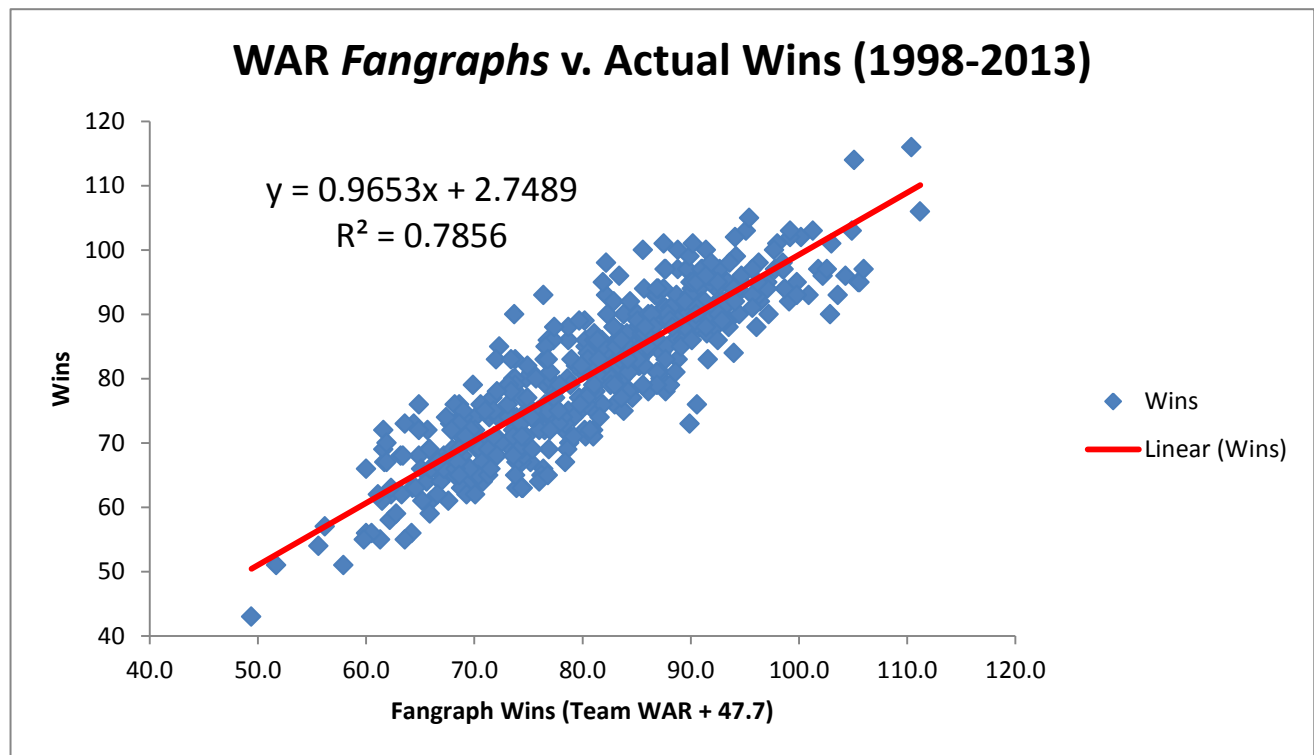
In short, while a good and sound measure, summing up WAR will not give one quite the accuracy of the *Run Differential* equation that has other formulations (SABR Statistical Analysis Committee 2007, 7-8) to reach the same end: measuring projected wins of a team, but over and under valuing the ends.

Season	SDev_Diff_Wins_FG	SDev_Diff_Wins_Pyth	SDev_Wins_FG	SDev_Exp_Wins	SDev_SP_WAR	SDev_Bat_WAR	SDev_RP_WAR	Perc_Pythag_FGWAR
1998	7.73	3.62	13.10	12.62	4.64	10.09	2.15	214%
1999	4.57	3.42	11.74	11.14	4.43	8.66	2.45	134%
2000	4.15	3.31	9.53	9.02	3.79	7.73	2.60	126%
2001	5.33	4.11	12.30	11.42	4.39	8.85	2.40	130%
2002	5.86	4.25	12.87	13.46	5.37	8.09	2.26	138%
2003	6.01	3.98	12.97	11.79	5.98	8.85	2.65	151%
2004	5.93	4.52	10.92	11.18	4.03	8.37	2.74	131%
2005	5.28	4.54	9.08	10.08	4.08	6.06	1.79	116%
2006	4.67	4.06	7.51	8.67	4.05	4.89	2.66	115%
2007	5.89	4.17	9.17	9.09	4.22	7.30	2.20	141%
2008	5.09	4.29	10.43	9.71	4.85	8.02	2.37	119%
2009	5.23	4.87	9.61	9.70	4.73	6.82	2.39	107%
2010	4.62	2.80	10.47	11.93	3.72	7.90	2.32	165%
2011	5.69	3.93	11.67	10.63	4.70	8.66	2.14	145%
2012	6.14	3.84	10.41	10.51	4.67	7.06	2.19	160%
2013	5.73	3.66	12.21	12.16	4.15	9.13	2.70	156%
Avg.	5.47	3.93	10.82	10.73	4.46	7.88	2.37	139%

WAR Note: WAR itself is based on well-studied, if arbitrary, by each system assignment, of how much a player contributes to winning games. It sets replacement level based on the winning of 2430 games minus 1430 games (divided by 30 teams) to get 1000 Wins above Replacement, or 47.67 games is considered the zero point. Like absolute zero (0 degrees Kelvin, while .500 is like 273 Kelvin: 0 degrees centigrade.) *Fangraphs* uses FIP ERA to calculate its pitching contribution – 43% of available WAR while Baseball Reference used a runs allowed formulation. Batters get 57% of the pie – with wOBA, wRC+,

positional adjustments, fielding measures, base-running, and playing time combined to generate this very brief summation of how WAR is calculated.

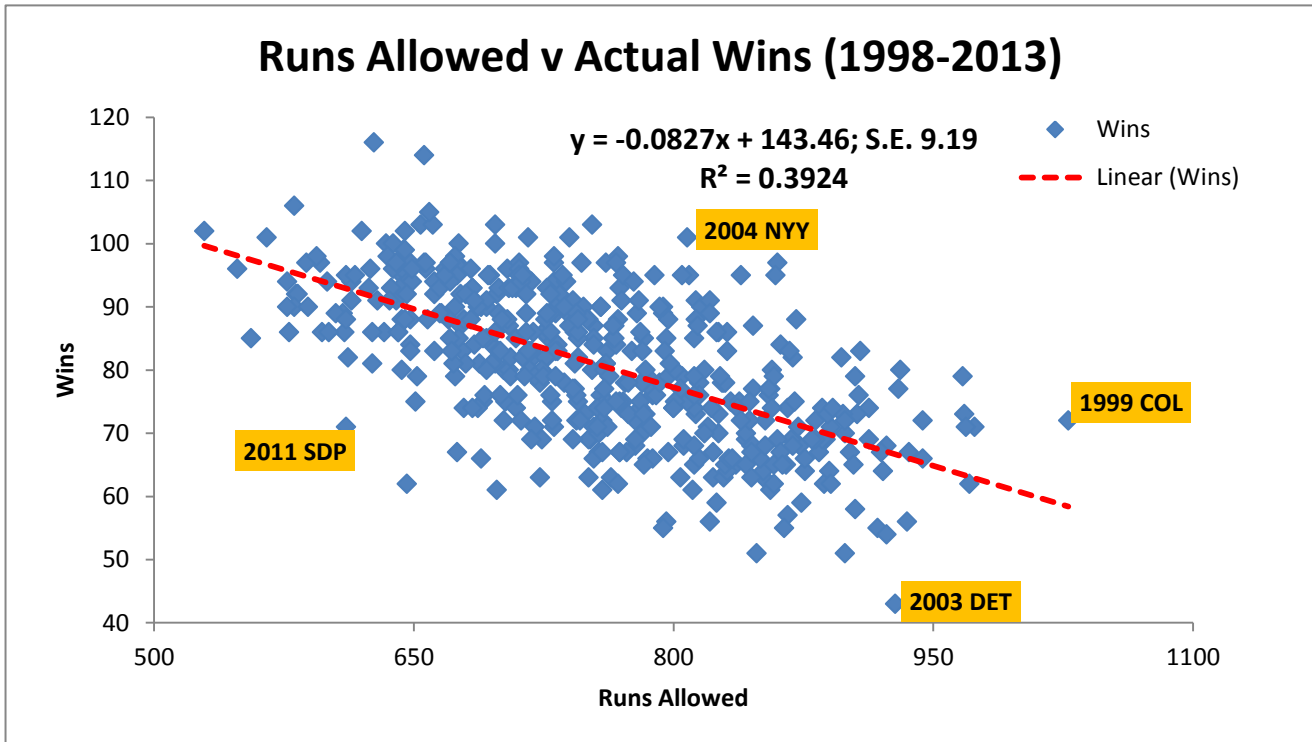
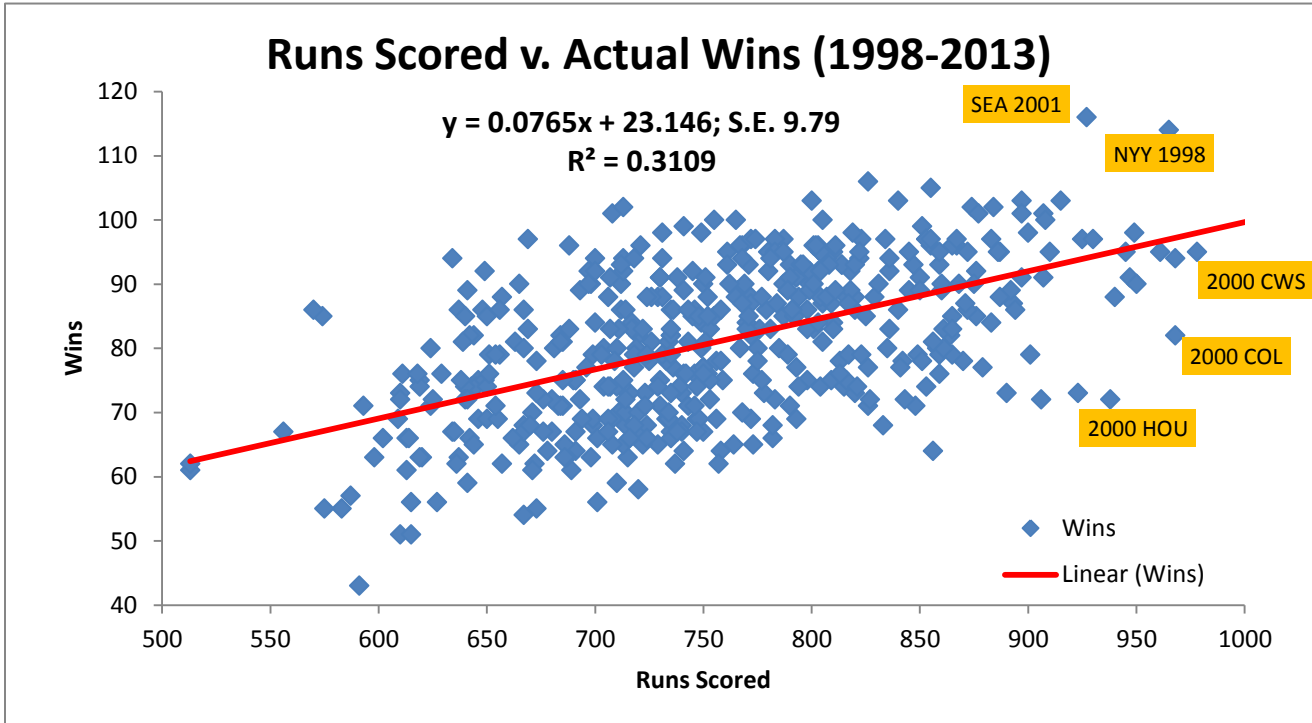
To this day, fielding has the most measurable error – as no one stat has uniquely defined itself as preferred rate statistic that can be plugged in easily and out pops a number fans can readily grasp – like fielding %, or errorless game streaks. This is but one fuzzy area and briefest way to state its less-than-ideal results. Again, beyond the scope of what is being discussed here, but relevant.



Runs Scoring/ Allowed v. Wins

Differential created an obvious link to the abilities of what a team can control. In an ideal world, having 9 Babe Ruths is a dream come true. You would not care at all about your defense unless you plan to win over 80% of your games. (8 Ruthian players times roughly 10WAR per season with replacement level pitching. Gives you 127 wins in 162 games: 784%.) But, mere mortals play. And 8 *Ruthian-like* players ever existed in the seven score baseball history.

Offensive environment matters a bit here. Each year the league is slightly different, some years the money is on scoring runs as the league is pitcher friendly. Others, everyone has found an offensive punch, and getting better through stopping runs matters more, in theory. Both sides matter – from the production to the financial investments in securing a component – but what has been the more correlative to winning? Thus the next section addresses both – which mattered more during this era, scoring runs to create wins, or stopping runs to create the wins?



At first glance, stopping runs is more significantly correlated and has greater influence (negative slope of .0827 greater than .0765) than scoring in this era. Other eras were different; and vary from year to year, of course. That is what makes baseball interesting; but does each era vary a great deal?

Table of Runs Allowed v. Runs Scored Slope Values and R-squared Results

ERA	Run Scored R-squared	Runs Allow R-squared	RS Slope	RA Slope	RS Std. Error	RA Std. Error	RS/Win	RA/Win
Taft*	37.4%	24.0%	0.089	-0.067	12.2	13.4	11.2	14.9
Coolidge	45.3%	42.4%	0.091	-0.093	10.7	11.0	11.0	10.7
FDR	37.5%	38.2%	0.082	-0.083	11.6	11.6	12.3	12.1
IKE	51.6%	51.9%	0.122	-0.117	9.8	9.7	8.2	8.5
LBJ	38.5%	30.8%	0.087	-0.079	9.3	9.9	11.4	12.6
Reagan*	55.3%	34.8%	0.096	-0.089	8.5	8.6	10.4	11.2
Clinton*	43.5%	29.4%	0.086	-0.069	9.9	10.1	11.7	14.5
Bush (06-13)	30.5%	39.0%	0.076	-0.084	9.1	8.6	13.1	11.8
Averages	42.5%	36.3%	0.091	-0.085	10.1	10.4	11.2	12.1

*Federal League, 1981 & 1994 Strikes (removed from Runs Allowed Regression)

Over the modern era, it is usually preferable to add runs by offense, but not as much a difference as one might have thought. From 1922-1963, the differentials were almost a dead heat. From LBJ-Clinton, adding offensive runs was substantially more conducive to wins. In the Bush Era, the number flops to pitching – as offensive decline (more strikeouts), defensive shifts (runs allowed – earned plus unearned) make taking away runs slightly better. The standard error is consistent since the IKE era. This could be due to a modernizing game – facilities, talent balancing out (1965), specialists, and more analysis being done by numbers, less by intuition and feel. This said, not all things can be explained neatly. It is but one shotgun theory aimed in the general direction of baseball.

Jesse Wolfersberger wrote in the above *microsabermetric* analysis done in 2014: “The debate over how best to measure offense is far from new. There have been countless articles written touting the benefits and pointing out the errors of linear weights, runs created formulas, and other methods....The key takeaway from this article is to remember that context matters. When evaluating the value [of] a hitter..., the quality of the team’s offense should be a factor... (The Exponential Nature of Offense).” In the above graphs to be certain, teams made great use or abused their unique gifts for various reasons.

1998 Yankees dominated their league; their dynasty was at full throttle (Volume II, *Dynasty* section).

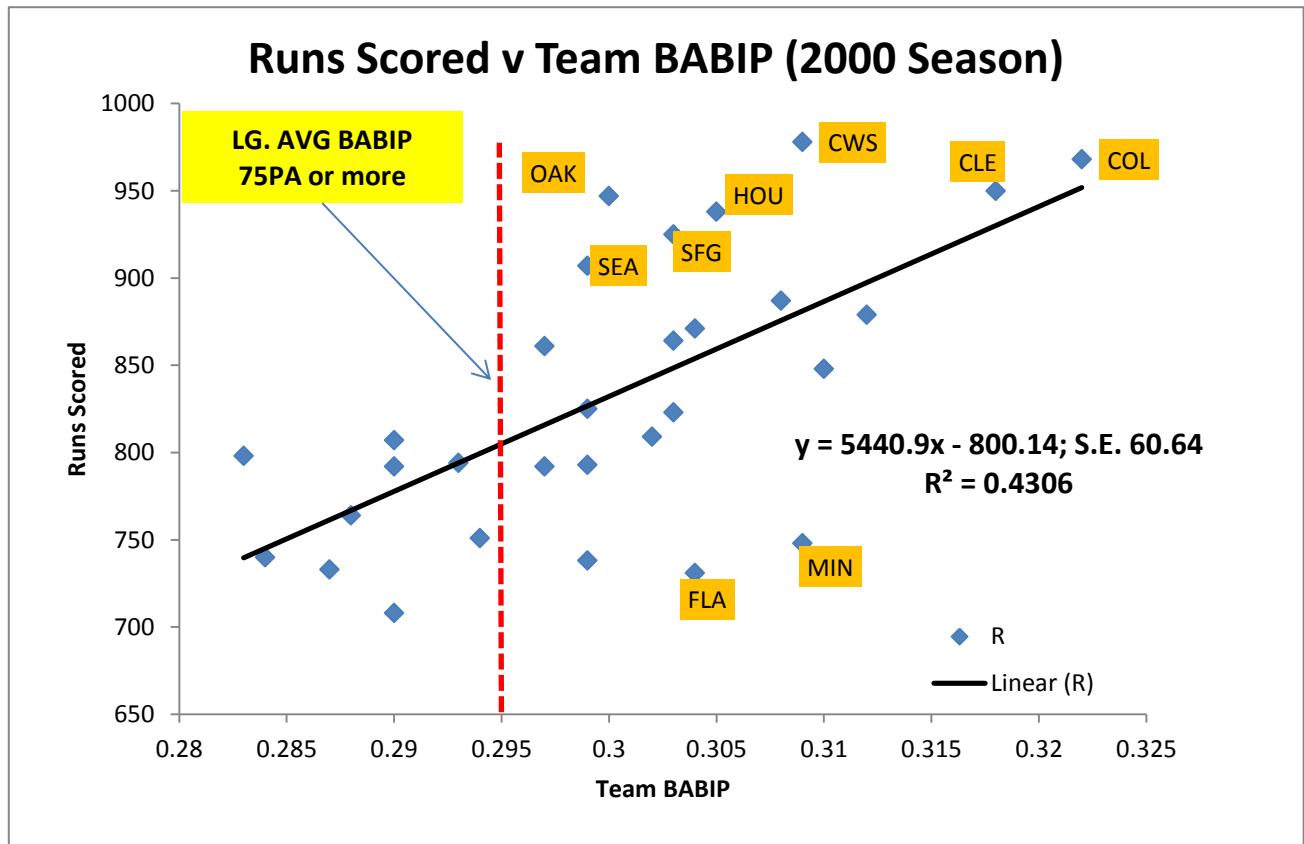
In the Year 2000. The Blake Street Bombers (36 times scored 10 plus runs, MLB record) were joined by the Southside Hitmen and the Killer Bees in creating happy-if-your-swinging offenses, harkening back to the 1930 season. The year was at the cusp of revelations on the steroid era – strange – as these particular teams did not carry the usual suspects. Todd Helton, Larry Walker, Jeffrey Hammond, Jeff Cirillo, Frank Thomas, Magglio Ordonez, Paul Kornerko, Carlos Lee, Craig Biggio, Jeff Bagwell, Lance Berkman, Richard Hidalgo, and Moises Alou made up the main thrusts of these 930 run plus lineups. Notice two Ex-Expo outfielders (Walker and Alou) were apart of great offenses in the era. Imagine if Montreal could have flanked them around Vladimir Guerrero. (Guerrero in CF – would his defense really matter? See below table.)

Party like its 1999. Colorado pitching did not party in this season. They watched teams line up with glee to take turns pounding the ball all over the yard. The story in Coors: you can never have enough of a lead because rallies are yet another bullpen phone call away.

2000 Season Offenses and Top Performers (*Fangraphs*)

Rk	Team		Runs	BB%	K%	BABIP	OBP	SLG	wOBA	WAR
1	White Sox		978	9.2%	15.0%	0.309	0.356	0.470	0.357	25.9
2	Rockies		968	9.3%	14.1%	0.322	0.362	0.455	0.353	15.5
3	Indians		950	10.5%	16.2%	0.318	0.367	0.470	0.364	27.1
4	Athletics		947	11.7%	18.0%	0.300	0.36	0.458	0.356	22.8
5	Astros		938	10.5%	17.5%	0.305	0.361	0.477	0.361	23.1
6	Giants		925	11.0%	16.1%	0.303	0.362	0.472	0.359	34.7
7	Mariners		907	12.0%	16.7%	0.299	0.361	0.442	0.352	28.8
1	Alex Rodriguez	Mariners	134	14.9%	18.0%	0.333	0.42	0.606	0.431	9.5
3	Todd Helton	Rockies	138	14.8%	8.8%	0.357	0.463	0.698	0.476	8.3
5	Jason Giambi	Athletics	108	20.6%	14.5%	0.335	0.476	0.647	0.471	7.7
7	Barry Bonds	Giants	129	19.3%	12.7%	0.271	0.44	0.688	0.456	7.6
9	Jeff Kent	Giants	114	12.9%	15.4%	0.357	0.424	0.596	0.431	7.4
11	Richard Hidalgo	Astros	118	8.7%	17.1%	0.317	0.391	0.636	0.428	7.3
17	Vladimir Guerrero	Expos	101	9.0%	11.5%	0.335	0.41	0.664	0.439	6.2
20	Jeff Bagwell	Astros	152	14.9%	16.1%	0.313	0.424	0.615	0.435	5.9
21	Frank Thomas	White Sox	115	15.8%	13.3%	0.327	0.436	0.625	0.441	5.9
25	Edgar Martinez	Mariners	100	14.4%	14.3%	0.331	0.423	0.579	0.424	5.3
28	Roberto Alomar	Indians	111	9.2%	11.8%	0.33	0.378	0.475	0.371	5
31	Manny Ramirez	Indians	92	16.2%	22.0%	0.403	0.457	0.697	0.477	4.8
39	Travis Fryman	Indians	93	11.1%	16.9%	0.359	0.392	0.516	0.391	4.6
42	Jose Valentin	White Sox	107	9.1%	16.4%	0.295	0.343	0.491	0.358	4.5
44	Jim Thome	Indians	106	17.3%	25.0%	0.319	0.398	0.531	0.399	4.4
45	Ellis Burks	Giants	74	12.2%	10.7%	0.338	0.419	0.606	0.43	4.4
46	Jose Vidro	Expos	101	7.4%	10.4%	0.339	0.379	0.54	0.391	4.3
57	John Olerud	Mariners	84	14.9%	14.1%	0.316	0.392	0.439	0.364	3.6
58	Mike Cameron	Mariners	96	12.1%	20.7%	0.317	0.365	0.438	0.355	3.6
60	Miguel Tejada	Athletics	105	9.7%	15.0%	0.287	0.349	0.479	0.356	3.5
66	Moises Alou	Astros	82	10.1%	8.7%	0.338	0.416	0.623	0.436	3.2
71	Jeff Cirillo	Rockies	111	9.8%	10.5%	0.349	0.392	0.477	0.378	3
72	Kenny Lofton	Indians	107	12.3%	11.3%	0.293	0.369	0.422	0.35	3
76	Ray Durham	White Sox	121	10.6%	14.8%	0.31	0.361	0.45	0.355	2.7
87	Rondell White	Expos/Cubs	59	8.3%	19.9%	0.367	0.374	0.493	0.377	2.5
89	Omar Vizquel	Indians	101	12.1%	10.0%	0.314	0.377	0.375	0.343	2.5
90	Rich Aurilia	Giants	67	9.5%	15.8%	0.293	0.339	0.444	0.34	2.5
99	Lance Berkman	Astros	76	13.4%	17.5%	0.316	0.388	0.561	0.402	2.4
104	Magglio Ordonez	White Sox	102	9.0%	9.6%	0.302	0.371	0.546	0.387	2.3
105	Marvin Benard	Giants	102	10.0%	15.3%	0.298	0.342	0.396	0.33	2.3
107	Mitch Meluskey	Astros	47	13.8%	18.5%	0.345	0.401	0.487	0.381	2.3
108	David Segui	Indians/TX	93	8.4%	13.2%	0.363	0.388	0.51	0.388	2.2
113	Ben Grieve	Athletics	92	10.8%	19.3%	0.314	0.359	0.487	0.365	2.2
115	Randy Velarde	Athletics	82	9.9%	17.4%	0.325	0.354	0.4	0.337	2.1

As the table above reflects, 7 out of 30 teams clocked 900 runs scored. While many attribute this mainly to steroids, the offensive explosion – with A-Rod, Bonds, Giambi and Ramirez, the notables – it seems the whole league got plenty out of a more likely causation: a juiced up baseball. BABIP for the sample listed were all above the league averages (.29475 for 75 PA or more) except for Bonds, Tejada, Lofton, and Aurilia. For 196 players that generated 1.0 WAR or greater, only 47 were below average. The standard deviation of the entire grouping of 486 players was .041 for individual BABIP.



Team BABIP for 2000 shows skewedness in the data. But the outliers, represent both leagues, as both AL and NL teams straddled the divide: those that benefited above expected results; and those that did not in Florida and Minnesota. If one includes Isolated Power, the extra bases aside from getting hits per at-bat, the R-square goes to 77.4% with standard error at 38.84. The Marlins ranked 27th in that stat, Minnesota, 30th, explaining much of their run deficit in 2000. The Rockies ranked lowest at 19th – and are closest to the predicted runs at 16 over – tied to .1 run/game underestimating that (Wolfersberger 2014) found exists at the ends of the spectrum for really good/bad offenses. At the ends of the BABIP line/curve too, like wOBA discussed above, there is under and overestimating visibly for this team macrosabermetrics analysis.

Pitcher's Realm: Dingers, Free Passes, Plunks and Overpowering Hitters (Formulation of DIPS/DICE/FIP)

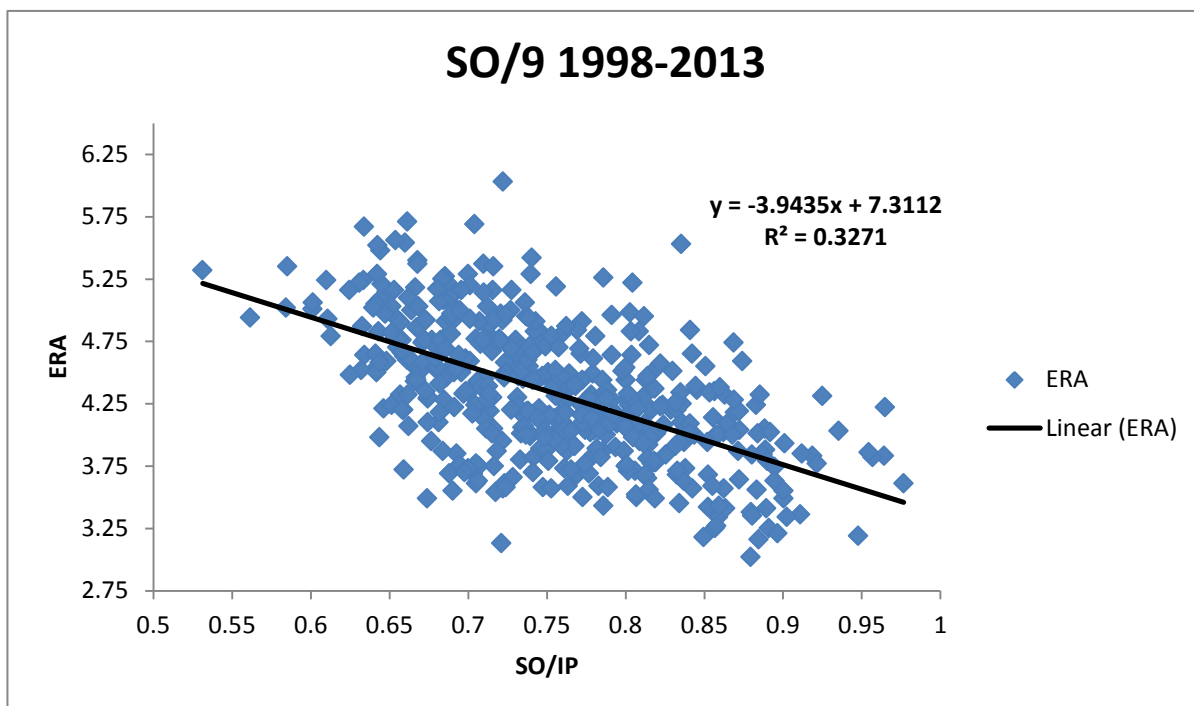
Pitchers can have the most control in their hands during an entire game. For in such games, like ones tossed by Roger Clemens and Kerry Wood, striking out 20 guys, that power controlled the entire flow of the game. Every batter felt the pressure to just make contact – get a seeing eye single, a bloop, or an excuse-me swinging bunt or walk – just to throw off the man on the mound.

So, it should not surprise that the pitcher does a great deal when he strike outs the batter; stops walks and controls his pitches up and in; and keeps the ball in the yard (no homers.) Yet, by the same token, a game can implode with a flare to right field, a fielder positioning mishap, and groundball hits that stay in the yard. And the liner drive rake. These balls in play are out of a pitcher's control as his defense must either succeed in helping out, or at least, not conflating the situation by additional mistakes made on the play.

Voros McCracken is credited with recognizing the distinct separation of controllable events and the uncontrollable for pitchers. Others too saw the fact – but McCracken – deserves a lot of the credit. He called this idea DIPS (defense independent pitching statistics.)

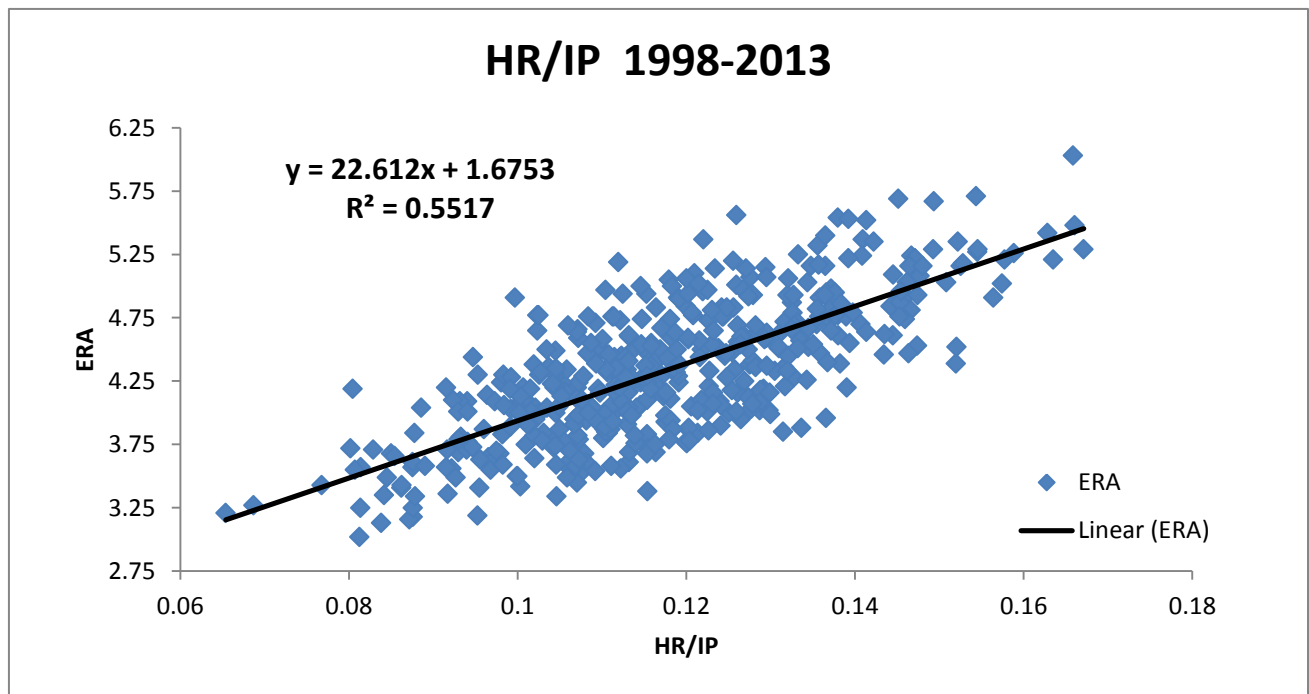
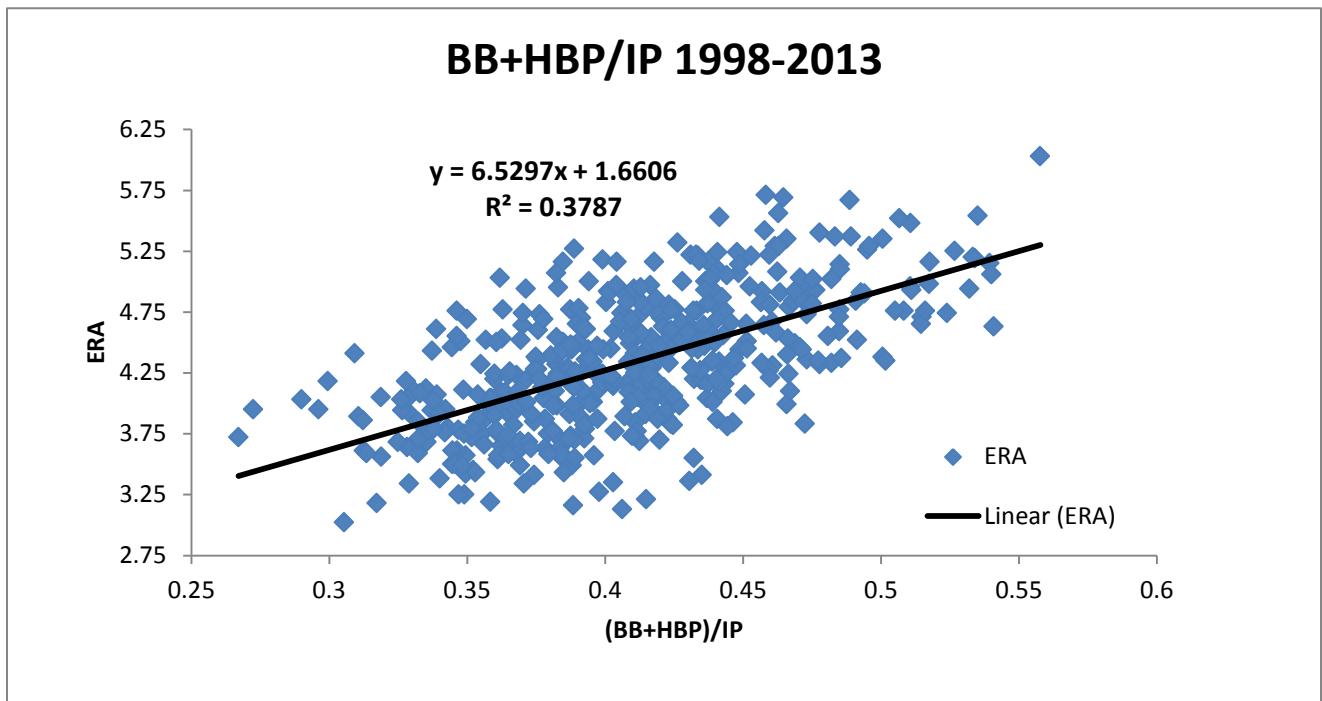
For this example, considering the 1998-2013 teams, the stability of the measuring a teams' projected ERA, comes out of using DICE (Defense Independent Component ERA), and works to the following formula:

$$\text{Team DICE} = (-1.85 * \text{SO} + 3.97(\text{BB} + \text{HBP}) + 15.37 * \text{HR}) / \text{Team IP} + 2.30$$



DICE comes from Clay Dreslough's work from the same time frame and matches DIPS well. (And shows numerous formulas developed to get answers.)

The above reflects strikeouts in isolation. 32% R-squared to ERA by a pitching staff. The following two graphs reflect two other controllable pitching variables: control of pitches (throw strikes) and mistake pitches (as homers fall into balls that are grooved down the middle, left inside without velocity, or hanging breaking stuff that spins up without requisite movement.) Again, each is correlated – positive in this case – the more walks and hits batsmen, more problematic it is. And homers – obviously, will contribute to poor ERAs.



Regression Statistics	
Multiple R	87.1%
R Square	75.88%
Adjusted R Square	75.73%
Standard Error	0.264
Observations	480

Variables	Coefficients	Standard Error	t Stat	P-value
Intercept	2.301	0.2084	11.04066	2.18E-25
SO	-1.85	0.1718	-10.7812	2.14E-24
BB+HBP	3.97	0.2565	15.47483	4.75E-44
HR	15.37	0.7801	19.69887	1.29E-63

Notice all three in concert are significant as is the intercept. As earned runs are 90%+ of scoring, to understand factors controlling where runs come from certainly became significant to outliers too as the following table reflects:

Franchise	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	DICE Residual
ANA	0.02	0.16	0.53	0.30	0.65	0.35	0.18	0.19	0.13	0.34	0.01	0.00	0.06	0.27	0.23	0.13	-1.98
ARI	0.03	0.46	0.11	0.24	0.19	0.03	0.00	0.22	0.21	0.25	0.27	0.25	0.04	0.20	0.23	0.13	0.17
ATL	0.10	0.06	0.03	0.34	0.74	0.12	0.38	0.19	0.03	0.18	0.16	0.01	0.01	0.02	0.23	0.15	-2.37
BAL	0.39	0.31	0.28	0.14	0.46	0.05	0.07	0.07	0.19	0.45	0.08	0.07	0.00	0.13	0.27	0.18	0.04
BOS	0.13	0.00	0.02	0.19	0.03	0.50	0.18	0.45	0.39	0.07	0.03	0.20	0.11	0.08	0.27	0.07	2.06
CHC	0.17	0.32	0.01	0.05	0.11	0.07	0.22	0.21	0.27	0.20	0.19	0.30	0.08	0.13	0.01	0.13	-0.74
CHW	0.11	0.19	0.20	0.13	0.19	0.09	0.08	0.50	0.14	0.38	0.24	0.02	0.38	0.49	0.23	0.19	-0.08
CIN	0.02	0.79	0.60	0.03	0.25	0.01	0.05	0.18	0.12	0.39	0.03	0.49	0.08	0.29	0.28	0.41	-2.77
CLE	0.05	0.07	0.31	0.63	0.61	0.32	0.09	0.25	0.23	0.28	0.25	0.30	0.09	0.20	0.38	0.04	2.67
COL	0.33	0.30	0.08	0.05	0.12	0.13	0.22	0.30	0.23	0.01	0.54	0.34	0.34	0.14	0.56	0.52	3.87
DET	0.13	0.11	0.31	0.15	0.43	0.23	0.27	0.09	0.35	0.03	0.10	0.22	0.19	0.08	0.22	0.40	1.99
FLA	0.15	0.02	0.09	0.05	0.01	0.26	0.09	0.37	0.23	0.22	0.09	0.14	0.21	0.17	0.30	0.07	1.54
HOU	0.21	0.31	0.17	0.20	0.01	0.43	0.09	0.31	0.10	0.09	0.12	0.18	0.23	0.04	0.28	0.01	-0.16
KCR	0.32	0.04	0.21	0.24	0.11	0.10	0.16	0.70	0.31	0.13	0.37	0.43	0.47	0.12	0.13	0.35	2.50
LAD	0.18	0.30	0.45	0.08	0.55	0.38	0.38	0.06	0.24	0.34	0.17	0.34	0.27	0.05	0.21	0.12	-2.10
MIL	0.02	0.06	0.42	0.44	0.37	0.01	0.17	0.31	0.47	0.40	0.42	0.11	0.32	0.08	0.40	0.28	-0.54
MIN	0.39	0.25	0.41	0.02	0.15	0.18	0.11	0.19	0.12	0.01	0.03	0.15	0.17	0.29	0.13	0.35	2.27
NYM	0.33	0.13	0.13	0.01	0.35	0.18	0.36	0.18	0.16	0.05	0.24	0.07	0.22	0.17	0.20	0.04	-1.99
NYG	0.21	0.16	0.15	0.26	0.28	0.47	0.42	0.24	0.10	0.15	0.43	0.09	0.32	0.16	0.10	0.06	1.53
OAK	0.18	0.28	0.00	0.22	0.20	0.38	0.19	0.40	0.11	0.29	0.11	0.24	0.50	0.09	0.28	0.22	-1.72
PHI	0.23	0.20	0.09	0.20	0.13	0.08	0.27	0.16	0.03	0.01	0.34	0.21	0.18	0.11	0.20	0.39	-1.18
PIT	0.06	0.16	0.17	0.36	0.39	0.10	0.03	0.23	0.04	0.44	0.24	0.14	0.53	0.18	0.03	0.08	0.97
SDP	0.09	0.09	0.38	0.18	0.09	0.12	0.14	0.23	0.29	0.21	0.14	0.04	0.20	0.27	0.09	0.02	-1.15
SEA	0.40	0.08	0.12	0.54	0.11	0.53	0.22	0.13	0.04	0.53	0.14	0.50	0.13	0.11	0.17	0.43	-0.72
SFG	0.17	0.19	0.14	0.07	0.26	0.35	0.02	0.05	0.16	0.09	0.12	0.29	0.37	0.08	0.02	0.20	-1.27
STL	0.01	0.06	0.43	0.70	0.47	0.21	0.40	0.57	0.20	0.18	0.10	0.02	0.18	0.11	0.23	0.14	-2.54
TBD	0.47	0.13	0.01	0.03	0.08	0.36	0.24	0.34	0.13	0.88	0.34	0.01	0.29	0.47	0.24	0.04	-1.00
TEX	0.66	0.52	0.23	0.44	0.06	0.62	0.18	0.57	0.27	0.01	0.51	0.10	0.25	0.20	0.17	0.14	3.18
TOR	0.04	0.16	0.32	0.03	0.07	0.19	0.05	0.37	0.09	0.07	0.18	0.09	0.20	0.05	0.10	0.11	0.11
WSN	0.09	0.36	0.42	0.15	0.19	0.38	0.49	0.30	0.03	0.22	0.07	0.15	0.05	0.20	0.11	0.12	-0.59

Those highlighted in green (above), significantly overachieved with respect to the DICE ERA for the season in question while those in shaded red underperformed their DICE peripherals. For the span you see, the top places to be a pitcher: Atlanta, Los Angeles (Anaheim is close), Cincinnati, New York's Shea and Citi, and St. Louis in the final years at the original Bush Stadium. Meanwhile, Arlington, Colorado, Kansas City, Minnesota and Cleveland were less than happy places for the mound guys, overall, and in particular seasons.

1999 Cincinnati Reds (.79) were edged out the Astros, who also pitched above their metrics (.31). Neither factored as Atlanta fell to the mighty Yankees in the World Series.

2001 Seattle Mariners (.54) pitched well above their peripherals garnering 116 wins, but a quick exit from the playoffs.

2001, St. Louis (.7) too went to the NL championship series versus Arizona with their dynamic pitching. Matt Morris dueled Schilling in games 1 and 5, well enough, but the series went to Arizona. 2002, Anaheim (.65) won the World Series, facing off against a Bonds-led San Francisco team. Atlanta (.74) was blessed again in a season led by Maddux, Glavine, Millwood, with Smoltz in the pen, not beating his FIP (Baseball-Reference), but others on the staff did.

2005 St. Louis won 100 games with starters Mark Mulder, Jeff Suppan and Jason Marquis beating their FIP ERA by over $\frac{3}{4}$ of an earned run combined, winning the division by 11 games over Houston. The St. Louis bullpen was more "lucky" as top seven by innings pitched posted substantial differentials for that season too. Nevertheless, Houston went to the World Series.

It seems too, after 2007, the worst variations from DICE ERA happened in Colorado, the hitter's haven where certain pitching styles suffer – reliance on breaking stuff – would fall into that category. (Less break takes place on such pitches at higher altitude.) Even as the humidior settings were being adjusted, the Rockies pitchers were not blessed with outcomes that mirrored their work in either 2008 and 2012.

But would this just tie to the baseball being less variable – or less juiced – post 2006? And pitching outcomes league wide regressing back to a more normal state? (See analysis and the chart below after this historical aside.)

Johnny Sain and Pitching: Grooming a Lefty Coach

Lefty minor leaguer Leo Mazzone and right hand catcher David Duncan, for Atlanta and St. Louis respectively, are credited with dramatic improvements and consistent pitching staffs under their tutelage. The residuals seen in the table above seem to reinforce this conclusion. As does a study performed by professor J.C. Bradbury entitled a chapter, "How Good Is Leo Mazzone?" There Bradbury first wrote about Mazzone's relationship to legendary pitcher Johnny Sain (from Mazzone's autobiography):

"He was so helpful to my thought process and approach...I think sometimes he was so far ahead of his time that those other people fear his knowledge, so, therefore, they turned it off. Whatever their reason was, they were stupid. I went the exact opposite direction..."

...He taught me everything from throwing programs to proper spins on a baseball to strategies of baseball to dealing with the front office. Everything he talked about and taught me, I've seen unfold from the top down. It was a tremendous education." (Bradbury 2007, 55)

Sain garnered early lessons from a mentoring father, as author Jan Finkel wrote recently: "He was born John Franklin Sain in the tiny town of Havana, Arkansas (population 375 in the 2010 census), on September 25, 1917, to Eva and John Sain. An automobile mechanic and a good left-handed pitcher at the amateur level, the elder Sain would profoundly affect his son's career, encouraging him early on and teaching him to throw a curve while varying his motions and speed (Finkel 2008)."

Sain, a righty, was a substantial pitcher who got a very late start to the bigs: six years in minors, three years as a WWII pilot instructor (a mechanism to learn what and how to teach properly), before he became a full-time starter at 28 in 1946. By peak athletic performance, he was at his prime without any MLB sustained success. But, Sain also had "low miles" on his arm, and refined what worked for him in his time in the service.

Sain joined back with the Braves, and his new partner in crime, lefty legend Warren Spahn – WWII hero – to make a lethal combo. Both came back after earlier cups of coffee in the bigs and formed a devastating tandem that inspired doggerel poetry – *Spahn, and Sain, then an off day, followed by rain...* the excerpt goes. Sain was an effective starter until 32 then amassed further experience as a bullpen specialist, giving him all the tools to become a crack pitching coach.

In the LBJ Era (Vol. II), Sain worked his magic on arms such as: lefty Whitey Ford (1961), Ralph Terry (62), Jim Bouton (63), lefty Al Downing (63), Jim Mudcat Grant (65), lefty Jim Kaat (66), Earl Wilson (67), lefty Mickey Lolich and Denny McLain (68). In the 1970s, after getting booted from Detroit in 1969, he latched on with the White Sox under lefty manager Chuck Tanner. Sain took lefty knuckleballer Wilbur Wood from a guy that pitched good in relief and spot started, to the absolute workhorse starter, as the last guy to start both games of a doubleheader (and lost both.) Jim Kaat, future 25-game winner Steve Stone, and Stan Bahnsen all worked under Sain during his White Sox tenure that ended when Tanner was fired.

Sain left for Atlanta in 1977 where he coached in various capacities until the mid-1980s with the Atlanta Braves, when Tanner rehired him as his pitching coach. Tanner came in after managing the Pirates for a prolonged time, resulting in their 1979 World Series win. Sain's movement around the league came from conflicts with insecure managers, front office edicts contrary to his advising (he told his pitching charges to seek better compensation), and likely, a fear his *actual* knowledge was disruptive to embedded organizational philosophies not working to create success.

As Jan Finkel wrote for SABR:

"Always willing to stick up for his pitchers, he further endeared himself to hurlers by not making them run. Some baseball people found

this strange, but Sain had two reasons for the tactic, one practical and the other philosophical or pedagogical. On the practical side he noted, 'You don't run the ball up to home plate.' On the philosophical or pedagogical side, Sain said, 'I've always felt that a lot of pitching coaches made a living out of running pitchers so they wouldn't have to spend that same time teaching them how to pitch.'

On the other hand, he believed that pitchers had to keep their arms strong, so he had them throw almost every day, even after a long stint on the mound the day or night before. To keep pitchers mentally focused, he had, as an example, Wednesday's pitcher chart pitches for Tuesday's game; that way, the pitcher could observe both his teammates and the opposing pitchers and hitters. It seems of obvious benefit, and most managers and pitching coaches now have their pitchers chart the game, but Sain seems to have been the first to make it a practice." (Finkel 2008)

Sain innovated too. He created some tools to get pitchers to explore their pitches all the time. Again, Finkel reflects: "He showed up with a briefcase full of inspirational books and tapes and a machine he was patenting as the 'Baseball Pitching Educational Device,' which everyone soon called 'the Baseball Spinner.' Baseballs were mounted on rotating axes – one axis per ball – and you could snap one in a variety of fastball spins and the other in rotations for sliders and curves. The baseballs were anchored. Except for rotating, they didn't move. Using John Sain's Baseball Pitching Educational Device, you could practice spinning your delivery at home or in a taxi or in a hotel room without endangering lamps, mirrors, or companions (Finkel 2008)."

This reflects at its heart a very *sabermetric*-minded guy. Sain's innovative tool of pitching spins, work effort needed in off days, ties nicely to his creating 'control charts' for pitchers. He also explored and applied *Machiavellian* principles. This is all due to understanding what a pitcher does – pitch – and how he learns: practice that pitching (ball mechanics); watch how others pitch (charting); and finally, "teaches" how to get batters out through charting and a pitcher's cunning. Analogous to how doctors learn their expertise: by reading about methods; watching it applied; doing one; then, teaching the method to others (Roy-Borstein 2013). Same applies here – as you have to connect the phases together to truly master the pitching craft.

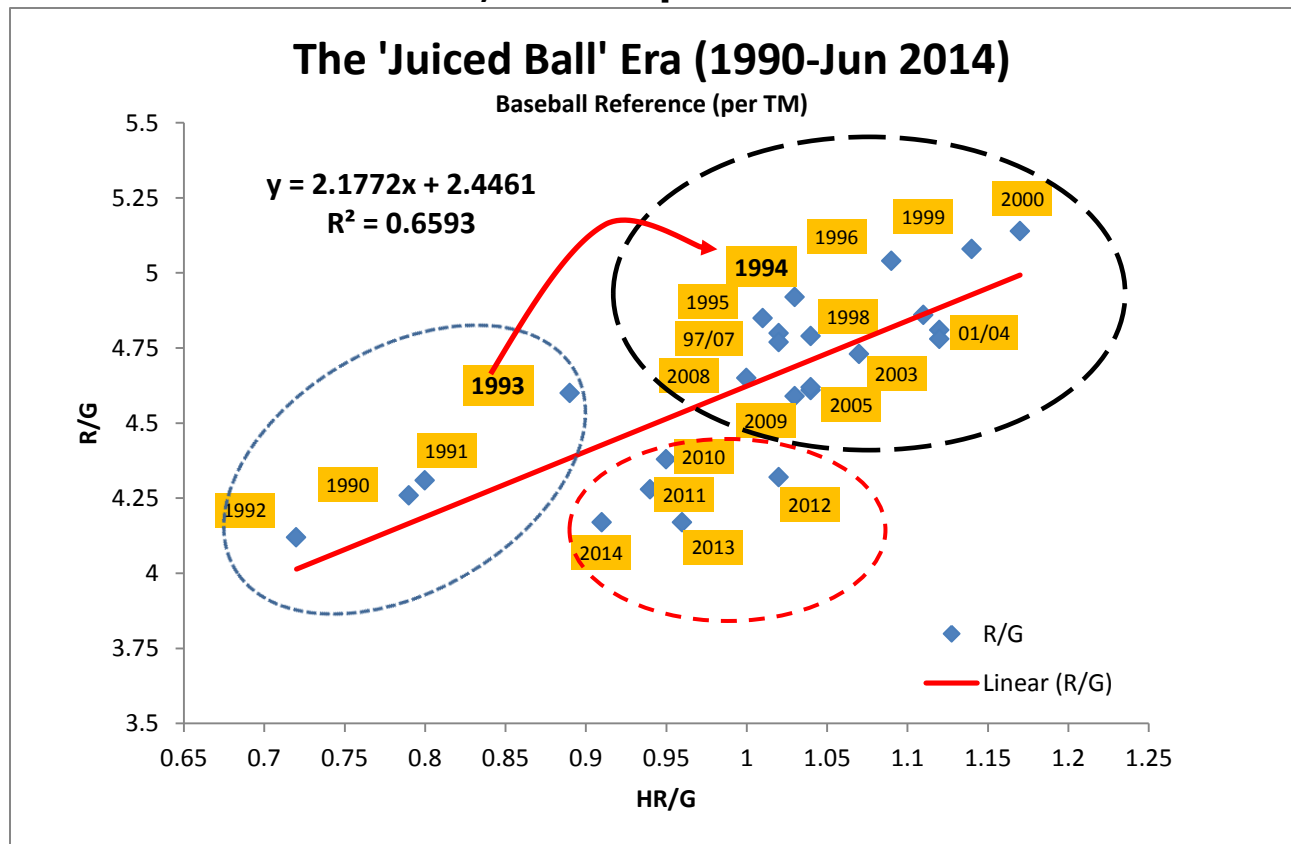
Johnny Sain is a great bridge to the past: as he was the last to pitch to Babe Ruth in an exhibition game and the first to pitch to Jackie Roosevelt Robinson. Sain passed away in Downers Grove, IL on November 7, 2006. A legend much overlooked.

From the master, Leo Mazzone soak up all the *Sain Knowledge* effecting Atlanta's pitchers, both great, in Maddux, and the also rans: John Burkett, Chris Hammond, Jaret Wright, to name a few successes. Bradbury's study concluded that, "Leo's impact on earned runs is about 15% of the NL average. That is about the same as Coors Field in the opposite direction (Bradbury 2007, 61)."

Mazzone's biggest effects for his mound charges came in increased strikeouts rates and reduced home run rates, two factors that are part and parcel to the **DICE ERA** formula above.

Beyond Mazzone's Atlanta magic, Cincinnati's Don Gullett – a Big Red Machine southpaw pitcher – turned around lesser lights in his time as Red's pitching coach in the 1999-2000. Bud Black – another lefty – was the pitching staff coach in Anaheim from 2000-2006. Bryan Price stayed up in Seattle – lefty – got plenty out of his arms in 2001. Lastly, Duncan is a southfork; a catcher by trade, who provided that different perspective to the game, as many catchers are successful managers to the present day.

Baseball, Interrupted?: 1994 to 2007



Another side bar discussion, and related to home runs rates, many sportswriters, fans, owners, and players themselves have derisively attacked baseball players for the usage of steroids in the so-termed 'Steroid Era' of the 1990s-2000s. It is not the argument here to say this was not polluting the sport - it was, on a league wide scale as the *Mitchell Report* et. al. lists the players and connections - it is though the argument that this problem is too conveniently used to mask a greater underlying reason for gopher balls driving up offensive outputs: the baseball was modified to a livelier state of being in the *Clinton Era*. (See: Volume II, *Steroids* section.)

Rawlings moved their hand stitching operations to Costa Rica in the late 1980s from Haiti's chaotic political nightmare. Not show is the 1987 season (1.06

HR/G) where the juice first arrived in a large batch of MLB baseballs shipped from Haiti.

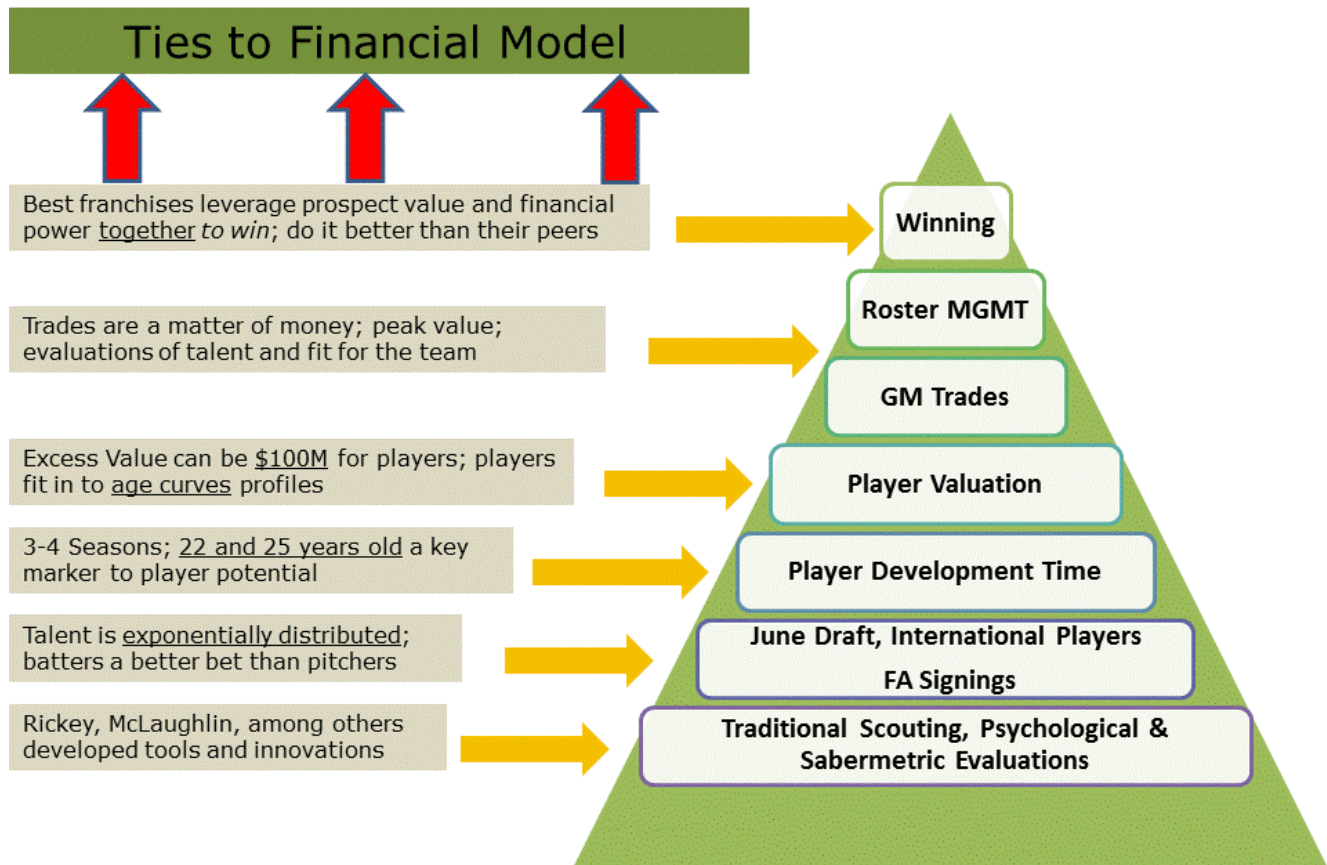
A first question to ask is: How long does it take for a baseball, hand made, to be introduced to an MLB playing field – is it 3 to 6 months? – as supply chain management has lags, delays, and storage errors (LIFO/FIFO). Two, what are the quality checks, and how are they effected – humidity, storage temperature, altitude – are all ways to massage baseball characteristics, aside from internal tinkering that no one can actually 'see.' And who and why and what are the checks anyways? More questions exist that MLB would likely not answer openingly. (And tests done, at MIT, in 2000, far from the tropics, were self-serving to the powers controlling the game. What was their sample size? When and what balls? How did they pre-store and sort them?)

The graphic does reflect a curious pattern of data. Notice the circles and the dates in them. While it would be easy to say that after 2007, the sport cleaned up and home run rates came back to historical (pre-1994 norms?), it could be stated that between 1993 and 1994, something happened that altered the rate of HR/G for each team in baseball in a pronounced way. (Explored, in detail, in Volume II, Steroids.)

What is more plausible (then), every batter went into the off-season and hit the steroids/HGH, or did the baseball change to a livelier state? The latter is a much more plausible conclusion. Add in very prevalent, and modestly relevant changes like franchise expansion (diluting pitching staffs), ballparks introduced were cozier, better technology (ball bat production), and strike zones in flux, and you have reinforcing causations to home run production rates. But the baseball is the obvious culprit since it has been tinkered with before, on many occasions.

And so, by 2010, the home run rates declined with offensive runs per game outputs. As the baseball liveliness came back into historical norms, the batters too were striking out more as pitchers velocities shot up to 92-93MPH, on average. Players became true outcomes types: strikeouts or home runs, with less emphasis on bunting, the hit-run, stealing, or just hitting the ball into play as sabermetricians *influenced* these events on a MLB-wide basis. Notice above the points with respect to the regression. The so called juiced ball era actually shows some above and below residuals to the linear regression as it "drives" the regression. Pre-1994, are all above; the 2009-2014 years, are all below.

Talent Acquisition: Exponential Value



Branch Rickey's Farm to Drafting and International Signings: Talent Acquisition/Development Creates Winning

As the era above saw two shifts to its style of play, modifications occurred to how playing talent is acquired and to its successful development, going through changes before, and to the present day. This acquisition and development of players is the lifeblood of winning games and franchise improvement. Teams that can identify talent, develop it, and put it to its best use, win more, obviously. The ability to leverage good or prospective players, make smart deals on these players, provides stability and a framework for a yearly plan to win. Moreover, star players not only serve on-the-field purposes, but also, local marketers and MLB build up advertising platforms to engage the fans on these star players. This ties to the bottom line part of the model which rears its importance to gaining franchise success in allowing them to purchase free agents when needed. This model, the playing star, has evolved over time.

Since 1965, the June amateur draft has been the most usual way to acquire talent for all 30 teams as players in college and high schools in the United States are selected. The formation of the draft leveled the playing field some, if teams had good scouting systems in place. Some teams – even in changing

homes – found success right away, particularly the KC/Oakland A's in the early 1970s. Others, have struggled. The Cubs and Padres would be examples.

For many years prior to that, going back at least to the 1920s, teams leveraged their limited financial resources for unaffiliated minor league players (paying owners top dollar), high school arms or college men off the sandlot, based on crude scouting staffs coverage and analysis of these various pools of talent in America, leaving aside an obvious talent pool: the African American until the mid-1940s. But as Branch Rickey proved, developing a huge farm system for St. Louis, the top-dollar approach was not the most preferable way as it puts hard money in at the top of player acquisition, and not, the bottom rungs.

Back to the FDR Future: A 19th Century Idea

But this farm system concept existed for nearly forty years prior to 1920 with innovative manager Harry Wright attempting it in 1883 – with a reserve squad – but getting little support in those nascent days. Throughout the late 19th century, others, like St. Louis Browns owner Chris Von der Ahe, and Cincinnati and Indianapolis magnate John T. Brush, succeeded some in using 'alternative teams' as a source of talent, and trade bait. However, most could only maintain these relationships for short durations, as most minor league teams were money losers, and/or drains on the finances of the not-quite-Rockefeller-rich owners (Morris, *A Game of Inches: The Game Behind The Scenes* 2006, 8-20).

So Branch Rickey, with a healthy incentive to make the Cardinals profitable, tried this again to make a farm system work with the assistance of head scout Charlie Barrett by amassing talent via huge open tryouts. From these 100s of young men, each trying to escape personal troubles, the farm life, inadequate lives, or monotony, Rickey's acquired new raw talent that was assigned to newly acquired and owned franchises/affiliates. (Early example: Class C, Fort Smith, Arkansas, Western Association in 1920. (Golenbock 2000, 91))

Even when not completely owned, the St. Louis Cardinals garnered control of the process of player development. Before, minor league ownerships could and did violate working agreements with the majors; abused the player through undue workloads; would sit a good player, stagnating development; sell options to player that were not technically theirs to sell. (With legal battles that might come, prying eyes could then see more clearly into baseball operations and contracts. Never a very good idea as contracts were generally one-sided to ownerships, the more powerful 'player' in the deal.)

Broadway and Polo Grounds haunter Damon Runyon remarked in great detail on *Chain-Store Baseball – That's St. Louis Idea – Cards Own Five Clubs – And 200 Players* after the 1926 World Series:

“When Mr. Branch Rickey took hold of the Cardinals the club had no money in the treasury, or anywhere else, for that matter. It could not pay all those fancy prices for baseball players. It had enough trouble paying laundry bills...

Eventually, Mr. Rickey began taking over clubs in the small leagues, controlling five different clubs – Fort Smith, Ark.; Austin, Tex.; Syracuse; Houston; and Danville, Ill. It owns most of them outright..

...Houston, in the Texas League, for instance, is held to be worth \$230,000, counting the franchise and real estate.

[Using the tax code] they can write off a pretty heavy loss against a club if that club develops one good big-league player, for big-league players nowadays cost anywhere from \$4,000 on up to six figures.

Take the Fort Smith club...Chick Hafey; Taylor Douthit; (Billy) Hallahan, a left-handed pitcher; Flint Rhem; (Ed) Clough; and Hank Mueller. Hafey and Douthit cost St. Louis \$500 each...the price paid the men who originally tipped Mr. Barrett to the players...Clough and Mueller [cost] nothing.

Mueller was picked up from the sandlots by Mr. Barrett then traded even up to the Giants for Billy Southworth, so Southworth cost the Cardinals nothing. On that batch of ballplayers, the Cardinals could write off a tremendous loss on the operating expense of the Fort Smith club.

Austin...recently sold a player named (Harry) McCurdy to a big-league club for \$25,000 and two ballplayers..." (Reisler, Guys, Dolls and Curveballs: Damon Runyon on Baseball 2005, 407-409)

Rickey's idea though could not have launched successfully without the astute and fortunate dealings of Sam Breadon. As a self-made Manhattanite, Breadon went from bank clerk, to popcorn seller at 1904 St. Louis World's Fair, to auto dealer, before getting a few shares of the Cardinals in 1917. In three years, Breadon was now president of the cash-poor Cards. He then worked out a rental agreement of Sportsman's Park while selling League Park for \$275,000 (Golenbock 2000, 90). (The cash went to paying off Helene Britton and funding the new minor league ownership plan and development system.)

Oddly, these men were opposites: Breadon, a Democrat, straight-shooting drinker and loyal to the spirit of a deal, whereas, Rickey, a Republican, a teetotaler, Bible thumper, but a supreme operator of the gray areas of the law. (Being a trained lawyer helped.)

The success of this partnership came immediately, at least, for the financial part. Between 1920-1922, the Cardinals generated \$374,000 in profits, with only the Giants and Pirates making more (Golenbock 2000, 95). Meanwhile, Branch Rickey, field manager of men, was unsuccessful in moving the Cards to 1st place. Though, from a 1919 record of 54-83, they improved to 87-66 by 1921. Regression in the next three seasons sealed Rickey's fate: he gave up the reins of on-the-field maneuvers for the front office, that of scouting, trading, and team guidance. This move proved successful as the Cardinals locked up their 1st World Series title in 1926, even with Rickey's arch nemesis, Roger Hornsby, technically, getting some of the credit for that first title. Roger never won another.

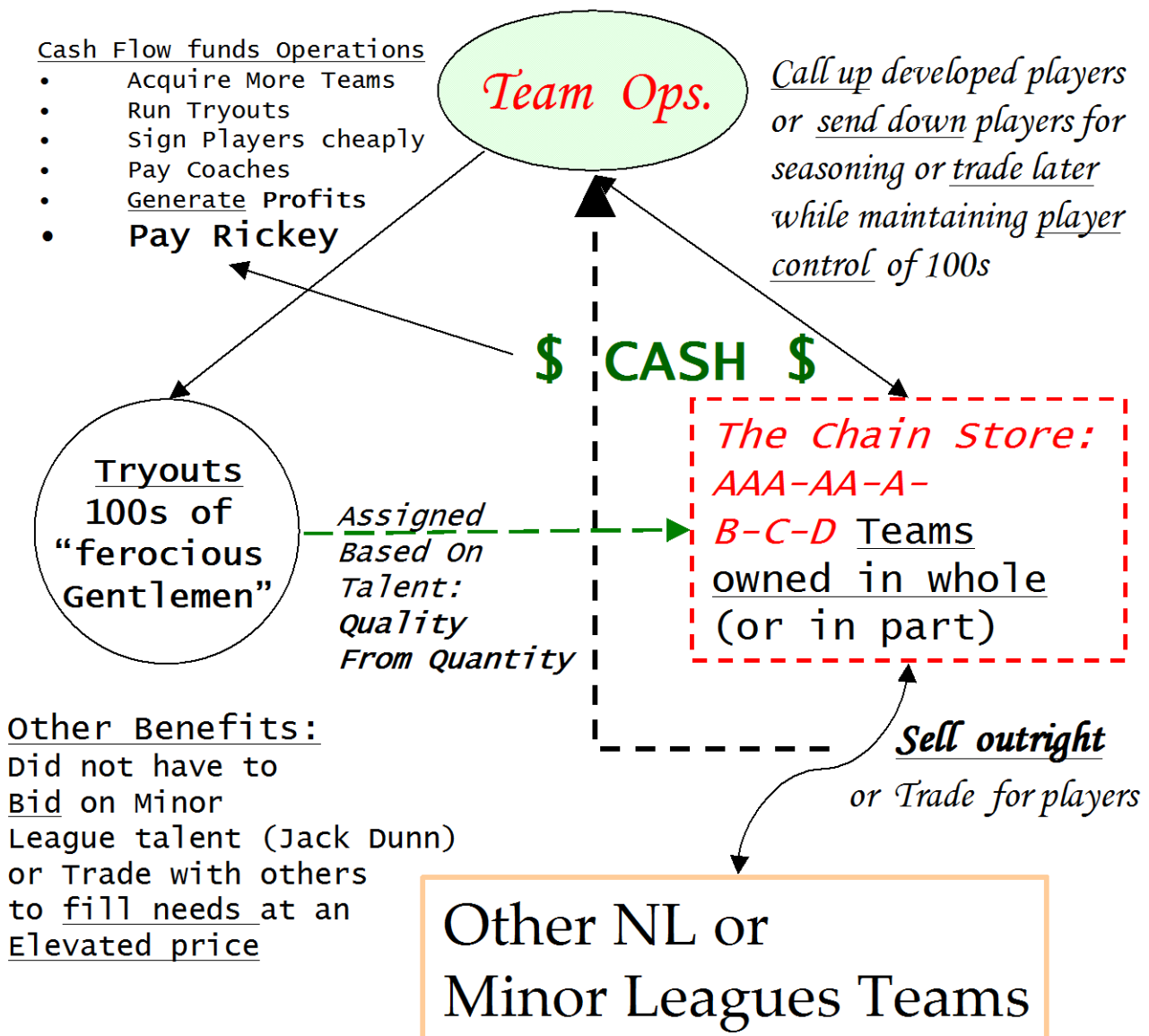
The Cardinals ranked amongst the elite of the National League over the next decade – appearing in the 1928, 1930, 1931 and 1934 World Series – while

putting performers like Dizzy Dean, Pepper Martin, Joe Medwick and Leo Durocher on the field, a.k.a. "The Gashouse Gang."

Rickey obtained a 10-year contract in 1922 for \$25,000 and made his fair share off the development deals from stock options in the Cardinals. (Until the Great Depression – when he lost \$300,000, investing on margin like many, many others lured to the fast money bucket shops of the day.)

Long before "Saint Rickey" made it a design to integrate his team – due as much to the playing ability and the profits that came from selling that every day – Rickey had already significantly altered the landscape of major league baseball, if only by dusting off a 40-year old idea, and succeeding with it.

Branch Rickey's Farm System



28 St Louis Affiliates and Levels (1939) - Baseball Reference (2014)

Columbus Senators, American Association (AA)
Rochester Red Wings, International League (AA)
Sacramento Solons, Pacific Coast League (AA)
Houston Buffaloes, Texas League (A1)
Asheville Tourists, Piedmont League (B)
Columbus Red Birds, South Atlantic League (B)
Decatur Commodores, Illinois-Iowa-Indiana League (B)
Mobile Shippers, Southeastern League (B)
Kilgore Boomers, East Texas League (C)
Pocatello Cardinals, Pioneer League (C)
Portsmouth Red Birds, Middle Atlantic League (C)
Springfield Cardinals, Western Association (C)
Albany Cardinals, Georgia-Florida League (D)
Albuquerque Cardinals, Arizona-Texas League (D)
Cambridge Cardinals, Eastern Shore League (D)
Caruthersville Pilots, Northeast Arkansas League (D)
Duluth Dukes, Northern League (D)
Fostoria Red Birds, Ohio State League (D)
Gastonia Cardinals, Tar Heel League (D)
Hamilton Red Wings, Pennsylvania-Ontario-New York League (D)
Johnson City Cardinals, Appalachian League (D)
Martinsville Manufacturers, Bi-State League (NC-VA) (D)
Monett Red Birds, Arkansas-Missouri League (D)
New Iberia Cardinals, Evangeline League (D)
Union City Greyhounds, Kentucky-Illinois-Tennessee League (D)
Washington Red Birds, Pennsylvania State Association (D)
Williamson Red Birds, Mountain State League (D)
Worthington Cardinals, Western League (D)

By 1940, 31 teams were connected to the Rickey Farm, the peak of the Cardinals acquisition (Baseball Reference, 2014). By comparison, the 1940 Cubs held 5 teams under their umbrella, most prominently, the powerful Los Angeles Angels. While the Cubs grew this number to 19 by 1947, by then, the minors heyday peaked, and TV came; and so too, the Cubs' ability to garner benefits.

The Rich Man Mimics: The New York Yankees mimicked Rickey's farm system, the sincerest form of flattery in any professional field, and produced plenty of talent with their greater resources. With Ed Barrow and George Weiss taking Col. Ruppert's money and Yankee net earnings (tops in the majors) and plowing some of that back into franchise – for coast-to-coast scouts, direct player acquisitions, and minor league teams acquired thereafter. In 1937, 14 minor league teams were Yankee-connected. Most notably, the Newark Bears and Kansas City Blues were the top AA affiliations. (Some may argue they outdid Rickey; but they did 'get by' with Ruth, Gehrig, DiMaggio, and Mantle. And that big city Yankee *mystique* got them plenty of farm boy signatures.)

Branch, meanwhile, put the Dodgers on the same course from 1942-1950, as the Dodger system peaked with 24 minor league teams by 1950, and they stayed in double digits until 1961, the ultimate end of the old minors. In going over to the Brooklyn Dodgers as general manager, Rickey built up the minor league backdrop and commissions to support himself and the farm. (He netted a 15% commission on every player contract he sold. So any player moves were to the direct benefit of the GM. His arrangement at the end in St. Louis totaled \$30,000 alone from player sales, and \$80,000 per year all total – more than three times what HOF slugger Mel Ott got in his prime (D'Antonio 2009, 62). Players making less than FO personnel is no longer a fathomable idea.)

Rickey, by then, had plenty of ideas and visions of what constituted a good player. Aside from the typically fast, healthy, and innate hunger for the game, being married with children, morally sound, and under 28 years old, would be Rickey's own, if sometimes flawed, paradigm. "Ferocious gentleman," was a tagline he offered as the model ballplayer. (And he sought out such models; but wound up with the Leo Durochers, Eddie Stankys, Dixie Walkers, and Don Newcombes, that, all had their various fistfights, excesses, and off-the-field antics with fans, front office, owners, and fellow and opposing players.)

Rickey acquired the moniker as the "Father of Baseball Scouting" (Shanks 2005, 39) that came from his employment of pitching machines, batting cages, and helmets, particularly with the Pirates, his last MLB organization in 1955. When Rickey first initiated group tryouts for anyone wanton to become a baseball player in 1919 at Robison Field in St. Louis (Kerrane, Dollar Sign on The Muscle 1984, 9), his utilization of these minor league plantations for major league crop growing probably was seen as a bit overdone by traditional franchise ways. But this pumped at the heartbeat of the successes seen with the Cardinals in 1920s and 1930s, the Dodgers in the 1940s and 1950s, and finally, the Pirates organization, that all won championships with the men Rickey acquired.

As economist and professor Andrew Zimbalist stated in his 2006 book, *In the Best Interests of Baseball?*:

"Branch Rickey went to work developing baseball's first extensive farm system. Rickey's idea was to extend the working arrangements and cross ownership that existed between the majors and the top classifications minors down to the lowest...By establishing a vast scouting and player development system, Rickey implemented a strategy to allow a relatively poor club like the Cardinals to procure top talent more cheaply...[or] prospects to sell or trade...By 1928, Rickey's Cards owned five minor teams...By 1937, the Cards' farm system peaked at [thirty-three] clubs, controlling almost seven hundred players." (A. S. Zimbalist, 45)

Whereas, his National League rival – the Cubs (owned by P.K. Wrigley) – "did not believe in farm systems (Veeck and Linn 1962, 39)."

Rickey though is not without his flaws. "Adumbrating McCarthyism, Branch Rickey stated the reserve clause was opposed by people with communist

tendencies... (A. S. Zimbalist, 54)“ This was after the moves by several ballplayers to the Mexican League in the mid-1940s under the initial days of Happy Chandler’s commissionership and, specifically, Danny Gardella (New York Giants OF) leaving the majors, then suing MLB for treble damages. Rickey’s attitude likely was triggered more by financial motivations to keep players tied to the repressive ‘reserve system’ and his farms than any concrete assertions about ballplayers overtly espousing to the intensely scrutinized and divisive political philosophy as Communism during the late 1940s and 1950s was. This tact just entwined with a healthy dose of *McCarthyism* running amok at the moment.

In the end analysis, Rickey portrays a dichotomy: as a snake-charming, carnival barker with a religious edict in one firm hand, and a malleable reality clutched strongly by its suit collar with slim dollars paying for that suit. He could take a sinner on in Durocher, convince him to be a would-be saint, and pay the bum less than a much fairer man would, and should. But Rickey did this all with a prophet’s gracefulness and a politician’s grandstanding grandiosity. And he’d do it with a keen, alert, and innocent-like smile purchasing these assets of ferocious gentlemen; soon playing their hearts out for ‘The Mahatma.’

And talked he would: Rickey never tired of a sermon; his targets in the conversation, would eventually give in, if only to hopefully figure out how conned they were, much too late. With Rickey, he was always playing, “let’s make a deal you can’t refuse to see the logic of.” (Only it was Rickey’s logic that mattered.)

Lasting Legacy of Branch Rickey

Rickey’s methodology in player development and tightly operated farm systems was not some flash-in-the-pan idea. Its tentacles reverberated long into the consciousness of baseball. As James made notice of in *Baseball Managers*: “Not some or many, but most of the dominant field managers in baseball since 1960 were products of [the Dodgers minor leagues of the 1940s and 1950s].” (James, *The Bill James Guide to Baseball Managers: From 1870 to Today 1997*, 208)

A Few, Good Dodger (Rickey) Disciples

Managers	Record & Championships	Notes
Walter Alston	2040-1613, 4 Titles	Hired in 1946 to manage Roy Campanella and Don Newcombe. 8 Years as Minor Lg. Mgr. Great Pool Player – better than Leo. 1960s LA dominance.
Tommy Lasorda	1599-1439, 2 Titles	Pasta, Poppbellies, Positivism, and Pennants. Lost to <i>The Bronx Zoo</i> . 1981 & 1988 WS Champion.
Don Zimmer	885-858	1978 Boston Red Sox. Cubs 1989. Joe Torre’s right hand man for the Yankees dynasty. Tampa advisor.
Dick Williams	1571-1451, 2 Titles	1967 Miracle Red Sox. Oakland A’s 1970s dynasty. 1984 Padres. HOF 2008.
Sparky Anderson	2194-1834, 3 Titles	The Big Red Machine, 1984 Detroit Tigers
Gene Mauch	1902-2037	1964 Phillies collapse. 1970s Expansion Expos. 1980s Angels success. Lost ALCS to 1986 Red Sox.
Danny Ozark	618-542	1976-77 Phillies won over 100 games.
Roger Craig	738-737	San Francisco Giants of 1980s. WS 1989.
Gil Hodges	660-753, 1 Title	Miracle Mets of 1969.

Others: Preston Gomez, Larry Shepard, Clyde King, Roy Hartsfield, Frank Howard, Bobby Bragan, Cookie Lavagetto

Early Player Evaluation: It's Psychological and Statistical

Rickey's farm and statistical deployments were kicked up a notch by Jim McLaughlin (as discussed in Dr. Kevin Kerrane's seminal work *Dollar Sign on the Muscle*), adding the burgeoning, but then relatively new, scientific analysis by utilizing a 3-part evaluation process for talent evaluation and obtainment:

1. Substituting centralized management for old-fashioned individualism:
Computerize player data, rationalize draft procedures and development of consistency in hiring, training and grading of scouts
2. Professional psychological tests like the *AMI* (Athletic Motivation Inventory)
3. Physical testing to evaluate eyesight, general health, bat speed, reflexes and other ratios of physical strength (Kerrane 1984, 117)

McLaughlin's results can be seen in the powerhouse teams of the Orioles and Reds of the 1960s and 1970s. Both of which won championships and had a multitude of Hall of Fame players on their rosters. (And in the Orioles case, they utilized "greenies" (amphetamines) as a pep pill, as Jim Bouton's *Ball Four* suggests as a factor to success, though not usually seen as positive one. **See:** LBJ Era, Drugs, Volume II.)

Like Rickey, who was looking for a specific type, McLaughlin was out to incorporate new methodologies into a system to find the right player that was often missed by the controlling, rough, old-fashioned individualists termed a scout. Jim saw himself as the potentially the next evolutionary step up from Rickey's "quality out of quantity" formula. He respected Rickey's approach to scouting out gems, but not so much the man's principles: "he was an ethical fraud (Kerrane 1984, 118)." Yet, Rickey and McLaughlin could likely find common ground if they had reason to work together as a team. (Ego clashes aside.)

This 'scientific bent' has often reshaped the way the game is seen, through numbers, and some purists often forget that the game is developing because of the sheer data available to properly divine which players will score more runs or stop those runs from scoring. No team can just go by a scouts' feel alone. Or simply ignore a players' success at lower levels of baseball. Or even properly evaluate the player's background without rational tools. But it is a conglomeration of knowledge about players that ultimately determines successful projection to *The Show*.

Talent Acquisition, Development and Team Analysis: Baseball America's Top 100 Prospects 1990-2014

The prior sections were to discuss foundations of how a few baseball minds influenced plights of developing baseball talent. Branch Rickey, Johnny Sain, and Jim McLaughlin are but just a few worthy mentions in that light. Each MLB team has employed long-time coaches, and scouts, that have shaped the game for the past century. But those discussed, each added uniquely to the design, or model, of how players came through systems that produced far more successful major leaguers than the quantity that started out upon their acquisition. Even when successfully rated a "top prospect", particularly, by *Baseball America* or *Baseball*

Prospectus, the odds of being a “franchise player” are enormously long as will see.

This part of the analysis involved looking at the rankings done over the last quarter century by *Baseball America* tied to *Fangraphs* and *Baseball Reference* data collected. It primarily focused back on the 1998-2013 time frame as all 30 current teams existed for that span. (But extended back to further for comparisons for various time frames and notes on prospects or development.)

Each team acquired their prospects via the draft or undrafted free agent route. The latter route tied directly to the burgeoning Latin American and Asia Pacific rim areas producing new talent arenas, often for riskier and premium investments into these raw, and untested, players. Though some, particularly from Japan, were stars in their native land: Hideo Nomo, Ichiro Suzuki, Hideki Matsui, Yu Darvis or Masahiro Tanaka, to name a few. Whereas, the draft focuses on the high school and college players with quantifiable risks based on greater past history, if not consistent methodologies from team to team, as some do better than others in selecting and grooming prospects into MLB ready talent.

From 1990 forward to 2014, 1,413 separate players made the top 100 BA rankings; 887 made the list from 1998-2013. As 2,500 player-rankings existed, one should conclude players were listed for several seasons as top prospects, some as many as four to five seasons. (Gary Sanchez, C, NYY: 4 times)

A breakdown of the visual analysis and tables to follow:

1. Talent Curve and tables for Player Success/Bust Levels (1990-2007)
2. BA Hitters and Pitchers Graphs and Results for 3 time frames
 - a. 1990-2005
 - b. 1990-2012
 - c. 1998-2013
3. June Draft and Costs
4. Team Acquisition of Prospects and Rates of Success
5. *Baseball America* Farm Rankings/Prospect Development Curve
6. Age Curves: WAR levels by age and average prediction by age level
7. Financial Valuation of top prospects based on success rates
8. Final overall rating of team’s performance (1998-2013)
9. Sabermetric general management study

Player Talent: Pareto Power Law Found

This idea is not a new one to baseball. As baseball, like the NFL, NBA, or Wall Street knows that the Pareto distribution is alive and well in their analysis of obtaining elite ‘talent.’ These elite players are very few in respect to all those that made it, that far, to be considered ‘talent’ in those sports, Wall Street included. The top 1% of the top 1% in many instances could be a dozen or less in their respective fields. Vilfredo Pareto, Italian civil engineer and economist for the most part, made this observation a century plus ago. (Note: Pareto’s theory was exploited shrewdly by Benito Mussolini, *Fascist* leader.)

That, among a ‘population’, there will be those that are many times above the normal average, a skewing of the various measurements by their existence. (For Pareto, income distribution was studied, amongst others.)

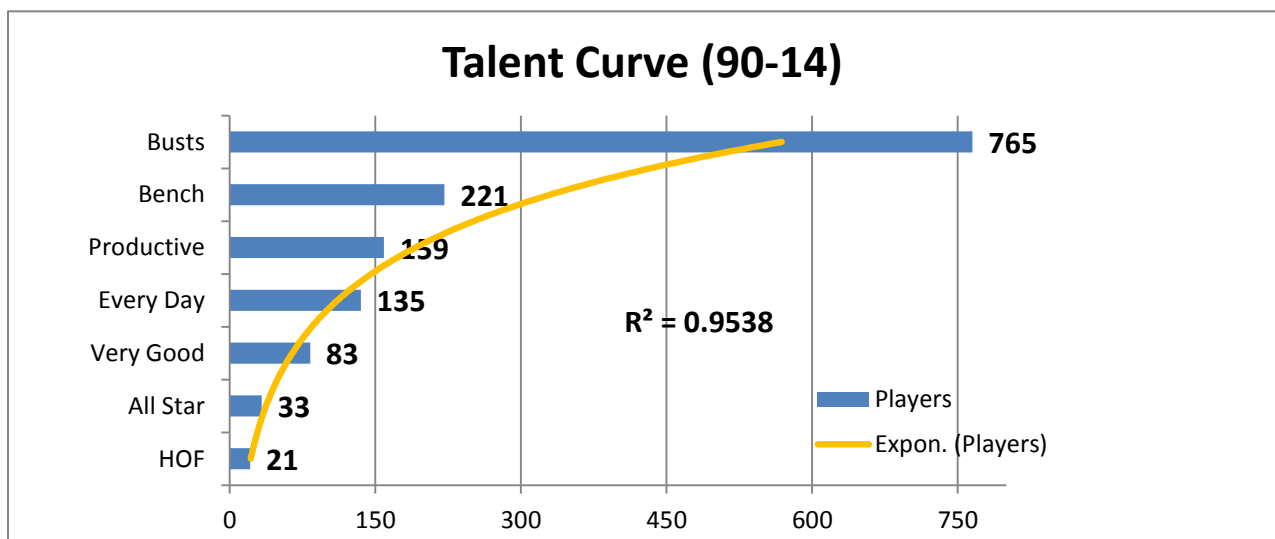
For sport, this power curve is reflected out of a huge population that started in high school baseball; washed out in higher level college; or maybe, got drafted, after both. Since 1965, approximately 1,200-1,850 players yearly are picked by 20-30 MLB teams, as expansion moved the needle on that first step to success. (And this represents one part of the talent equation; as international players went from unrestricted signs to draft-eligible, with many caveats.)

Thereafter, with roughly 180-210 minor league teams (AAA, AA, A+, A, A-, Rookie, FL), players rise up, if lucky to the higher levels, and reach the 750 roster spots that make up the current 30 teams. The MLB controlled minor leagues grinds this grouping of over 6,000 entries towards *The Show*; as these teams have crafted a MLB player through 2-6 years' worth of development time.

But the talent is *still skewed*, using Pareto, if we employ a most useful modern measurement to reflect this idea: Wins Above Replacement. In looking at the last quarter century of prospects, this group of 1,413 top prospects, (a season's 100 best out of the 6,000+ players; or less than 2% of *that player universe*), the breakdown of talent is:

90-14 fWAR Level	Player Type	All	Pitcher	Batter	Pitcher %	Batter %	Avg. All Team
60+	HOF	21	5	16	23.8%	76.2%	0.7
40+	All Star	33	9	24	27.3%	72.7%	1.1
25+	Very Good	83	26	57	31.3%	68.7%	2.8
15+	Every Day	135	52	83	38.5%	61.5%	4.5
7+	Productive	159	89	70	56.0%	44.0%	5.3
2+	Bench	221	108	113	48.9%	51.1%	7.4
2 or less	Busts	765	385	380	50.3%	49.7%	25.5
Total fWAR=							
10808	Total Players	1413	674	743		P. Roster	14.4
7.62	Avg. Player					Bench	7.4
13.7	St. Dev.					Busts	25.5

Sources: *Baseball America, Fangraphs, Baseball Cube*



First, some explanation of what this group as a whole contributed to winning games and other underlying elements. From 1990-2013 seasons, inclusively, this group contributed 45% (10,836) of *fWAR* (Fangraphs) to their respective teams. The other 55% came from either pre-existing players (no longer rated prospects), or prospects *not* in the top 100 by *Baseball America*. The first group by 2005-2008, is gone completely from baseball, assuming the very best outcomes of HOF, All-Star or Very Good careers. The latter group, which was not studied exclusively, likely must provide around 25% of the remaining *fWAR*. This reflects yet another wrinkle to the pure Pareto story: how many players just never made this *particular list* of prospects. And why not? (A rough analysis showed batters (by 1st year), 1971-89: 3,187; 1990-13:3,302 WAR)

Second, some may argue the random choices for cut offs of WAR for classifying the talent. 60+ WAR seems to be a good indicator of HOF. Out of 180 players in the Baseball-Reference database with that requisite level, which conveniently labels the HOF players, 40 are not in. They fall in to these several categories, some even two:

1. Essentially banned from HOF (Jackson, Rose)
2. Steroids/PED accusations (Bonds, Clemens, Palmeiro, McGwire)
3. Older, forgotten players (Tony Mullane Wes Ferrell)
4. Recently retired (Chipper Jones, Roy Halladay, Pedro Martinez)
5. Active Players (Utley, Jeter, technically, Alex Rodriguez)
6. Fringe HOF (Keith Hernandez, Dwight Evans)
7. Recent rejected for HOF induction, but likely will (Biggio)
8. Discrepancies in valuing players (Edgar Martinez)
9. Painted into the Steroid Era (Bagwell, Sheffield)

But 140 out of 180 is a pretty large group that made it. Some of them are listed prospects – Halladay, Mussina, Rodriguez, and Chipper Jones – and so, that's the measure used. Completely subjective, but objectively, shown.

Defining All-Star and Very Good is a bit more tricky. 40 WAR plus is 6-8 seasons of 5 WAR, reflecting a consistent appearance amongst the best players in baseball, with maybe a career season putting them in MVP contention/winner. Players like David Ortiz, Joe Mauer, Miguel Cabrera, Nomar Garciaparra, and Miguel Tejada made this level, so far. Some, are still active, and will move on up to HOF consideration; for many, it's the end of the line. Very Good puts 25-40WAR into their career. If you average 3-4 per season, for 8 seasons, creates good value. 3+ WAR per seasons is a decade of good playing. Right now, guys like Grady Sizemore, Brian McCann, Derrek Lee, Ryan Braun, Ben Sheets, Jason Schmidt and Clayton Kershaw (potential HOF) land here. And too, they can improve up the ladder, if injury does not hit. The other levels are again about setting reasonable levels of achievement.

This is not the first study to make use of such levels, as Scott McKinney in 2011 wrote about success rates in prospects, and created his levels for that analysis. Writing, in part, "Over the last decade, Major League Baseball organizations have treated top prospects as their most valuable commodity. They

are inexpensive (at least for the first six or seven years) and they can produce genuine star players. But of course they can also give rise to failure, lots and lots of failure. Every organization has several prospects that tantalize with scouting reports of potential success, but it seems like they often disappoint. Failure of top prospects is extremely common (McKinney 2011)."

Under 0.50	Very poor	Bust	
0.50 - 1.49	Below average		
1.50 - 2.49	Average	Success	
2.50 - 3.49	Good		
3.50 - 4.49	Very good		
4.50 or higher	Great		
		Superior	

He noted that, "One of the more difficult tasks of analyzing the data was creating an operational definition of 'success' and 'failure' or what constituted a prospect 'bust.'" (McKinney 2011)" His full study can be found [here](#). (Picture left: McKinney's Levels for Bust/Success Analysis.)

Third, as you might have noticed, active players will move up, or down (if on the fringe and have bad season(s)). At this point, I'll call this *The Churn Effect*. If one were to run this yearly, removing the oldest prospects, and adding the next crop, the stability would sustain at near historic norms. Capturing 25 seasons worth of prospects essentially captures the feasible distribution of a player's career length. Bonds played 22 seasons. Clemens 24 seasons on the rubber. Ken Griffey, again 22 seasons. Most too had 1-3 years of prospect time, depending on the necessity to rush them up to team, or the actual talent level they showed from that early age. And some guys are signed at 16 years old, and will make their debut at 19, a la Bryce Harper and Felix Hernandez.

Thereafter, playing to forty is a matter of whether MLB teams see you as productive, or not, on a year-to-year basis. Some, like Jamie Moyer or Julio Franco put closer to 50 on the map as the extreme outliers. So, this snapshot, in time, captures the nature of the churning beast of baseball. Talent is acquired; rated; prospected for several years; brought up and expected to perform to X level; declines on a parabolic slope to Y level; and retires once it behooves a team to put the youngster's raw, but identifiable tools ahead of the veteran's smarts, guile, and 7-8 figure check signatures at Bank XYZ.

Type	% of WAR	C	CF	Corner IF	Corner OF	DH	3B	Middle IF	Pitcher	Avg. Val/ Bench and Bust
HOF	14.2%	67.0	62.1	76.3	66.8	73.9	82.7	73.8	72.7	34.8
All Star	14.7%	42.1	46.9	49.3	49.7	48.2	53.9	46.0	47.2	23.2
Very Good	24.2%	28.0	28.9	29.9	32.9	28.8	33.1	31.5	32.1	14.8
Everyday	21.7%	21.6	20.1	17.8	20.4	19.5	18.6	19.6	19.0	9.5
Productive	17.1%	12.1	10.4	9.9	10.3	9.8	10.2	10.2	10.6	5.1
Bench	8.5%	4.3	4.5	3.6	4.3	4.5	4.4	4.6	4.0	2.1
Bust	-0.5%	-0.1	-0.6	-0.2	-0.1	0.6	-0.4	-0.3	0.1	

Again, the power law/pyramid nature of the churn. The top two player categories represent 29% of the WAR, but only 3.8% of this segment of the universe. Down to the Productive Level, 92% of WAR was earned by 30.4% of the players. The classic 80/20 rule, Pareto's thumb, is skewed, but not by much. The value at the top is 35 times greater than Bench guys and Busts put together. It is why the Mike Trouts of the universe can and do carry their teams as the following table tends to depict a roster makeup with 25 years of prospects.

90-14 fWAR Level	Player Type	All	Pitcher	Batter	Pitcher		Avg. All Team
					%	Batter %	
60+	HOF	21	5	16	23.8%	76.2%	0.7
40+	All Star	33	9	24	27.3%	72.7%	1.1
25+	Very Good	83	26	57	31.3%	68.7%	2.8
14+	Every Day	135	52	83	38.5%	61.5%	4.5
7+	Productive	159	89	70	56.0%	44.0%	5.3
2+	Bench	221	108	113	48.9%	51.1%	7.4
2 or less	Busts	765	385	380	50.3%	49.7%	25.5
fWAR= 10808	Total Players	1417	674	743		P. Roster	14.4
7.62	Avg. Player					Bench	7.4
13.7	St. Dev.					Busts	25.5

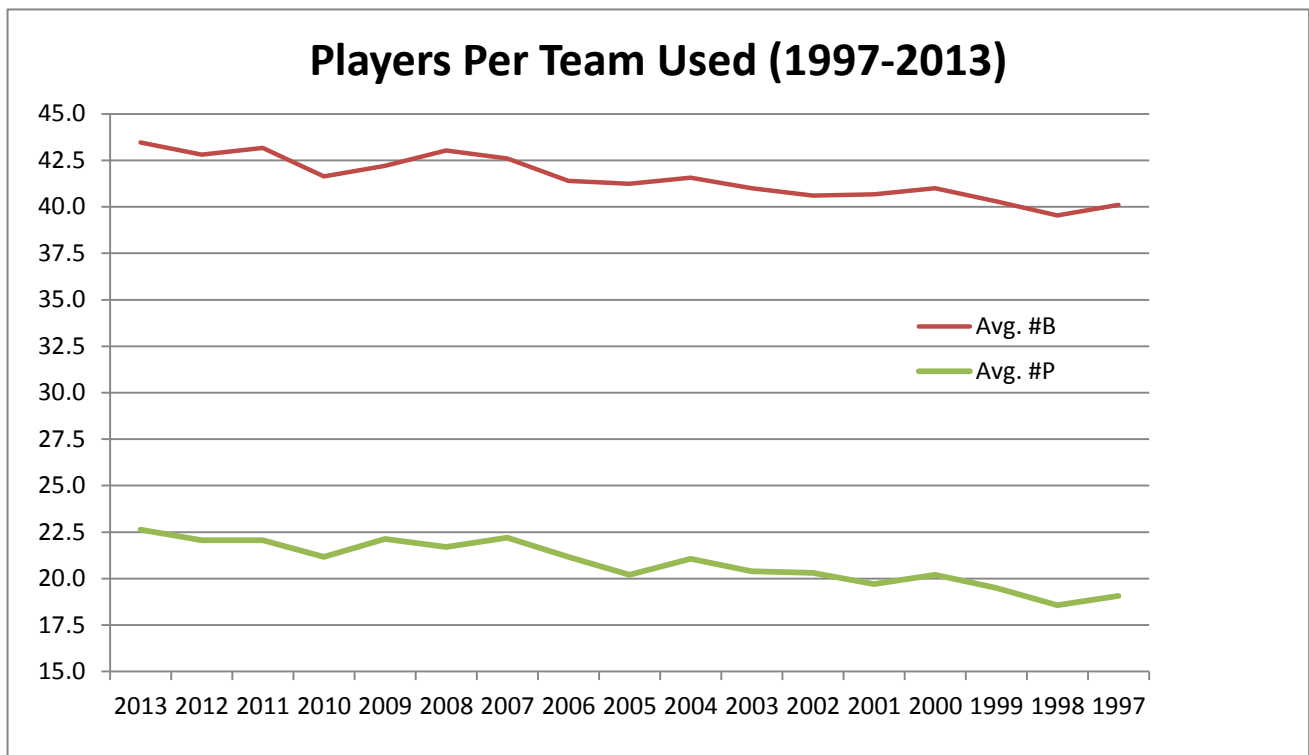
Logically enough, the top 14 players, on average, are you 8 position players, 5 starting pitchers, and the bullpen ace/closer. A team might land 1 HOF type hitter, who hopefully is at his peak of performance. 2-3 All Stars/Very Goods are pitching and catching; they put 7 guys in as productive and everyday types in the field, plus 2 more arms and the ace in the pen as the productive ends. Thereafter, if these teams find 7 guys that fit the role of bench hitters, or remaining bullpen roles, they are doing what most average teams are doing. The *Bust* category (for this analysis) likely represents the flip flops to AAA (called AAAA derogatively) guys that are either:

- 1) Soon-to-be busted prospects brought up too early and struggled
- 2) Busted prospects brought in anyways to fill an injury role
- 3) Prospects yet to transition to the MLB, but needed for BP or bench role
- 4) Retired guys or AAA players for life, after once being rated highly

Note too, prospect pitchers, maybe more so than hitters, fall into more clearly defined starting and reliever roles. Obviously, the elite prospects (1-15 in BA) are seen as no.1 or no.2 starters, if only give time to develop their stuff, command, and work out the mechanics of becoming "the ace." Down the prospect ladder, sits the #3-5 Starters, plus guys with 2 quality pitches, but lack command of a 3rd, or have endurance issues, or injury concerns. These guys are destined for bullpen, often labeled "failed starters," when they struggle at some juncture, which is why bullpen duty is the alternative with hopes of a closer role.

Nevertheless, these "failed starters" have an advantage of being "new" to a MLB hitter for a spell. If a batter has never faced a guy, even with advanced scouting of pitchers, and their tendencies, the lack of repetition is a batter's enemy during this scenario. The batter may swing at the first pitch, hit it fair, but out, and learning *basically* nothing. SO even the "bust category," especially for pitchers, allows for up to 2WAR. Most BP guys that manage to make it up, could provide marginal usage (.5 WAR for 3 seasons), without it costing a team more than the league minimum. And still, by their prospect ranking, be termed, a bust.

As such, players per roster per season are on the rise, to replace injured pitchers, which are happening with higher frequency (35-40%) as discussed by experts such as Will Carroll. As such, the emergency bullpen arms (or the tactic described above) are frequently on bus trips/flights from the AAA affiliate to the big league club. Nothing new, but the frequency seems to keep the churn rate at a very high and trending upward level.



As you might know, the American League does not bat their pitchers. So the number here is deceptive. Teams are carrying 13 arms (Cubs 2014), at times, to rest their starters more after a 100-105 pitch count, depending on (LI) leverage index as that is enforced more and more. As of 2013, 1,300 players batted in the big leagues for the first time; and this does not include a few extra pitchers that churned their way to face off against these lineups. In short, the 40-man roster has about 3-5 spots that are flipping like hamburgers to keep fresh meat (or recycled meat) moving through the MLB season grinder factory.

The BA 100 Success/Failure Study (1990-2007)

Like McKinney, there was a logical cut off time for analysis at 2007. (See graph: *Determining Span of a Study*.) This provided 6+ seasons for the 2007 top 100 to pan into a *relative* success. The results were as follows on a grand scale:

All								
1990-2007 Prospects	<u>60+WAR</u>	<u><60WAR</u>	<u><40 WAR</u>	<u><25 WAR</u>	<u><15WAR</u>	<u><7WAR</u>	<u><=2WAR</u>	<u>Productive</u>
ALL BA Prospects	HOF	All Star	VG Player	Everyday	Productive	Bench	Bust	
Elite (1-15)	5.9%	9.3%	17.6%	18.6%	15.7%	13.7%	19.6%	67.2%
High (16-40)	1.9%	2.6%	8.9%	11.1%	15.2%	18.1%	42.2%	39.6%
Average (41-70)	1.3%	0.7%	5.0%	8.6%	11.6%	14.0%	58.8%	27.2%
Low (71-100)	0.0%	1.9%	3.1%	8.0%	13.0%	15.7%	58.2%	26.1%
Results	2.0%	3.2%	8.0%	11.1%	13.7%	15.3%	46.6%	38.0%
1990-2007	<u>60+WAR</u>	<u><60WAR</u>	<u><40 WAR</u>	<u><25 WAR</u>	<u><15WAR</u>	<u><7WAR</u>	<u><=2WAR</u>	<u>Productive</u>
Pitcher Prospects	HOF	All Star	VG Player	Everyday	Productive	Bench	Bust	
Elite (1-15)	3.95%	5.26%	13.16%	22.37%	18.42%	17.11%	19.74%	63.2%
High (16-40)	0.80%	0.80%	6.40%	11.20%	18.40%	19.20%	43.20%	37.6%
Average (41-70)	0.60%	1.19%	2.98%	4.76%	10.12%	15.48%	64.88%	19.6%
Low (71-100)	0.00%	1.50%	2.26%	7.52%	12.03%	12.03%	64.66%	23.3%
Results	0.99%	1.79%	5.17%	9.94%	13.72%	15.71%	52.48%	31.8%
1990-2007	<u>60+WAR</u>	<u><60WAR</u>	<u><40 WAR</u>	<u><25 WAR</u>	<u><15WAR</u>	<u><7WAR</u>	<u><=2WAR</u>	<u>Productive</u>
Batter Prospects	HOF	All Star	VG Player	Everyday	Productive	Bench	Bust	
Elite (1-15)	7.03%	11.72%	20.31%	16.41%	14.06%	10.94%	19.53%	69.5%
High (16-40)	2.76%	4.14%	11.03%	11.03%	12.41%	17.24%	41.38%	41.4%
Average (41-70)	2.26%	0.00%	7.52%	13.53%	13.53%	12.03%	51.13%	36.8%
Low (71-100)	0.00%	2.33%	3.91%	8.59%	14.06%	19.53%	51.56%	28.9%
Results	2.99%	4.49%	10.67%	12.36%	13.48%	14.98%	41.01%	44.0%

These percentages reflected 1,036 prospects in this snapshot. Notice the incidence of busts/bench first: over 62% among all prospects; over 68% among pitchers; but slightly over half (56%) for batters, if not elite ranking. Clearly, batters are better bet to pan into a MLB players. An elite-rated hitter, top 15 prospects in *Baseball America*, hit at nearly a 70% rate for becoming a productive, over 7-14WAR player. Basically, a starter for 3-4 seasons if that occurs sooner in the player's career. Pitchers, 3 in 5 are productive, owing to a higher productive rate over batters in that slot, reflecting good bullpen usage, or plausibly, several seasons of starting roles that increased their WAR values.

Batters, as a group, will produce the HOF, All-stars, and Very Good players at over twice the rate (18%) of pitchers (8%). It is why you hear constantly about never having enough pitching, or rather, really good pitching. (Even as the offenses are deflating over the past seven seasons, the complaint does not change. Having offense better than the league is a better bet, *for now*.)

The lower-rated prospects have never produced a HOF player. Though, that will change, if Chase Utley ([#81, 2003, 54.9fWAR](#)) reaches the Hall. He will by the current assessment rule. (bWAR stands at 60WAR+.) He was drafted twice, by the Dodgers (2nd round), and in the 1st round (15th), so he is not so much of an outlier to that analytical scenario. Chase bypassed AA and headed straight for AAA, getting 2 plus seasons there to grow. He was "oldish" as prospects go (24), but achieved nonetheless stardom and historical noting in the World Series. He was an All-star by 26 and consistently performed up to HOF levels since.

On the other end of that spectrum, amongst the elite:

- Chad Hermansen, Pittsburgh, #13 in 1998, 5 times rated, draft 1st rd.(10)
- Lastings Milledge, New York Mets, #9, 3 times, draft 1st rd.(12)
- Delmon Young, Tampa Bay, 1 overall, 4 times, drafted 1st overall

A pure bust list includes 32 players (2011), with the bigger market teams, the Angels, Mets, and Yankees each having 3 busted and considered "elite" prospects. Some, like the Cubs, have never had both: elite and bust worthy.

Scott McKinney calculated his bust rates also. Here they are, graphically:

Overall Success and Failure Rates for BA Top 100 Prospects 1990-2003

	Under 0.50	0.50-1.49	1.50-2.49	2.50-3.49	3.50-4.49	4.50+
Pos. Players	40.9%	22.0%	15.1%	9.9%	5.4%	6.7%
Pitchers	54.1%	23.3%	12.6%	5.1%	4.4%	0.5%
TOTAL	46.6%	22.6%	14.0%	7.8%	5.0%	4.0%

	Bust	Success	Superior
Pos. Players	62.9%	37.1%	22.0%
Pitchers	77.4%	22.6%	10.0%
TOTAL	69.2%	30.8%	16.8%

Notice his higher bust percentages, based on inclusion of the .5-1.49WAR grouping. But by comparison, with this study for 1990-2007, that is tied to *total WAR* produced. His 46.6% for under .5 WAR coincides nicely with 46.9% for all prospects, and again, with pitchers a marked difference from position players.

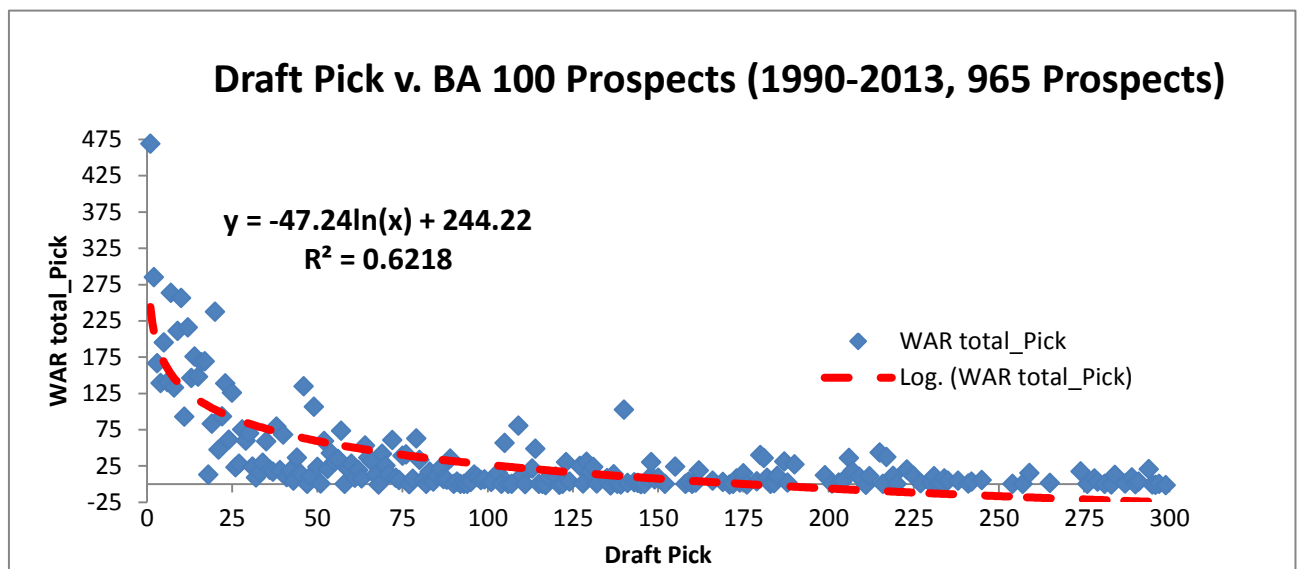
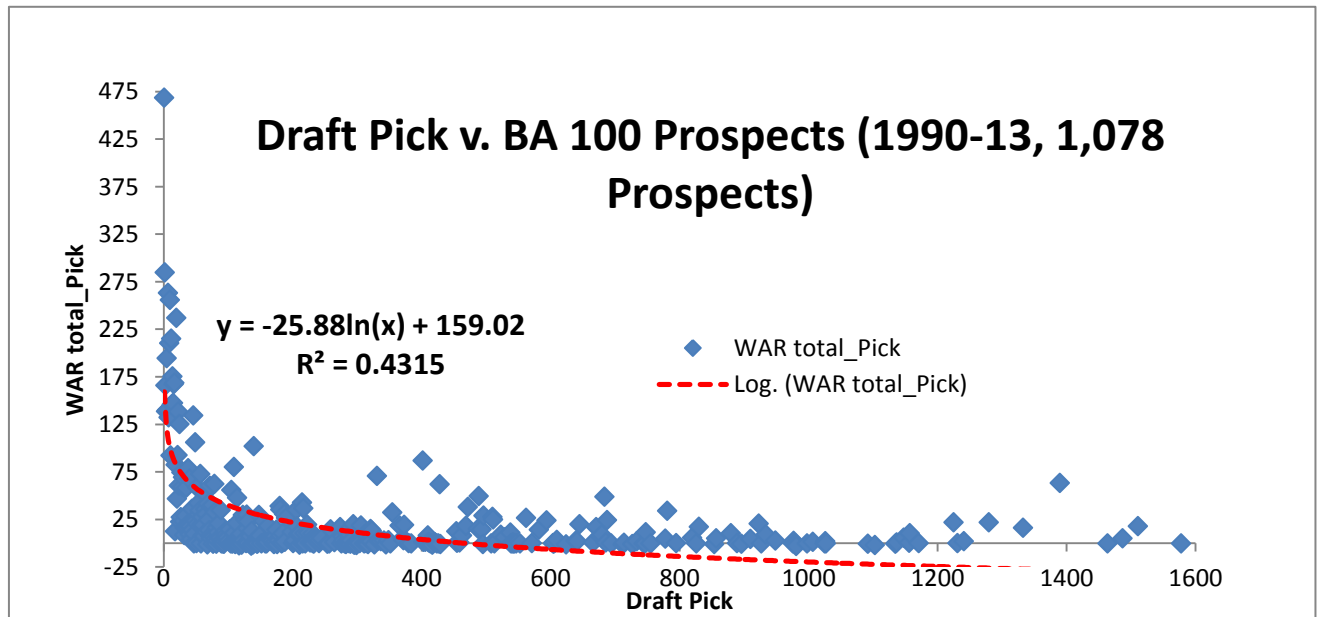
McKinney's level of success by prospect type ties with those conclusions too: "And of course many fewer prospects achieve superior success in the majors. A little under one in four position player prospects become stars, while only one in ten pitchers have that level of success (Success and Failure Rates of Top MLB Prospects)." His study's going rates (22% for batters, 10% for pitchers) are linked to the Very Good Player, or better, tabulated at around 18% and 8%.

In short, even with relatively different methodologies, the results are not widely different with four more years added to the broader picture, reflecting a stable rate of occurrence.

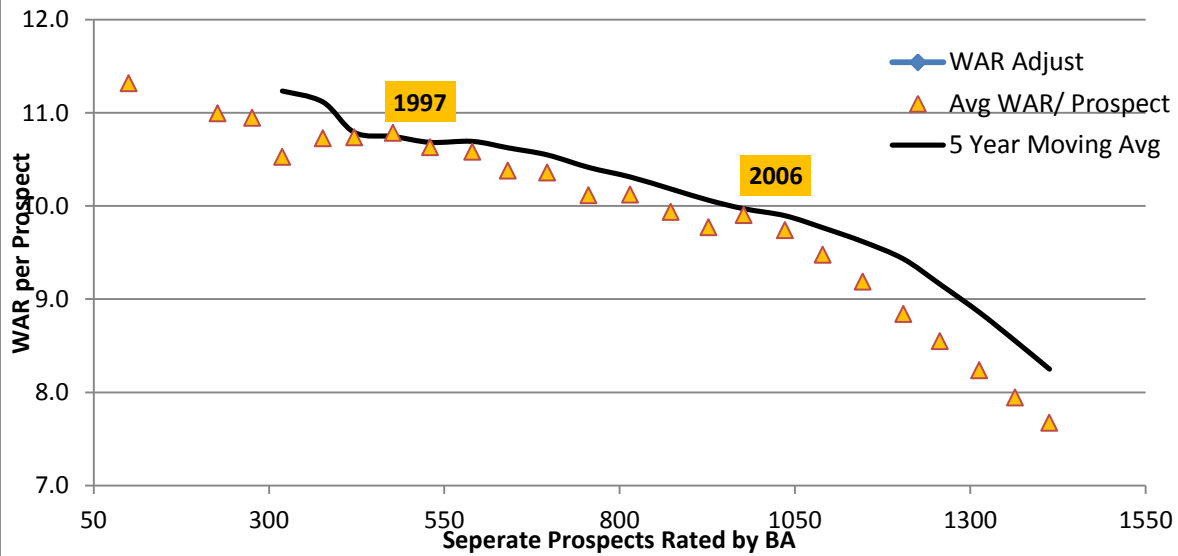
As we moved the analysis yearly with time, dropping off the oldest year, a “success rate” or averages form, with variations to what players provide based on initial/seperate prospect rankings. In looking at such results, the numbers are in line with that of other studies that cut off or snapshotted a time frame.

But the moral is: top talent is powerfully skewed and advantaged well to achieve the task of winning. It is not a democracy, but a dictated rule: the crème of the crop is a very slim crop indeed. And 70% failure, is like batting .300: it is all in the elitist eye of the beholder of the base knock results.

The following two graphs show vivid reasons for recent changes to the MLB draft. The first 10 rounds provide plausible value; and are slotted monetarily.



Determining Span of a Study: BA Prospects (1990-2014)



BA Year Ranking	Separate Prospects*	WAR Adjust	Avg WAR/ Prospect	5 Year Moving Avg
1990	100	1131.9	11.3	
1991	163	2017.8	12.4	
1992	227	2495.9	11.0	
1993	276	3021.9	10.9	
1994	319	3359.0	10.5	11.2
1995	377	4044.6	10.7	11.1
1996	422	4531.6	10.7	10.8
1997	477	5145.8	10.8	10.7
1998	530	5635.2	10.6	10.7
1999	590	6243.6	10.6	10.7
2000	641	6654.4	10.4	10.6
2001	697	7219.9	10.4	10.5
2002	756	7647.5	10.1	10.4
2003	815	8250.2	10.1	10.3
2004	873	8675.3	9.9	10.2
2005	927	9060.8	9.8	10.1
2006	977	9676.0	9.9	10.0
2007	1036	10090.9	9.7	9.9
2008	1090	10329.1	9.5	9.8
2009	1147	10540.9	9.2	9.6
2010	1205	10653.6	8.8	9.4
2011	1257	10747.6	8.6	9.2
2012	1313	10814.4	8.2	8.9
2013	1364	10836.7	7.9	8.6
2014	1413	10840.9	7.7	8.2

Drafting Risk and Spending Limits: Maturity Matters

The MLB draft process is the place where teams make their futures shine or dim. Building a plan to succeed comes first from the talent acquired to make more wins possible for the future. Fans, in person, or in bigger TV contracts, come from wins, creating a marketable product, as we have readily shown.

But the future rests in risky hands. College and high school players in the United States/Canada are eligible for the 1st year amateur draft with other stipulations, such as, never signing a professional contract before; graduation from high school, or completion of their junior year in college. Since 1965, and Rick Monday, the first ever pick, the process of scouting, then picking, signing, and developing the right players often comes to the cross purpose of, "What is the right price for said talent, initially? And will they make it (risk) to the show?"

For many years before, such potential picks could negotiate quite independent of constraints placed on MLB teams to reward their abilities to come. However, this 18-21 year old, if unsigned, was restrained from signing anywhere else, in the past, up to five years. (This was changed by an arbitrator. This after *MLBPA* filed suit on behalf of their *not yet* brethren. At present, teams must sign their picks by July 15th of the draft year; international signings are nearly a year.)

The order of the draft and compensation pick factors (for losing free agents – type A or B, in the past) were a main constraint on teams, set by prior season record, as spending limits did not tie-in explicitly, until 2012. So too, in the past, a large market, or successful or popular team (LA, NYC, Boston, for instance) exploited their greater financial resources to get at premium ceiling players, usually for higher signing offers. (Not always. But these "big boys" swam around more in the undrafted free agent markets (D.R., Venezuela, Japan et. al.) to much greater ado to the smaller fish in their collective, monopolistic pond.)

Smaller market (or having less financial wherewithal) teams tended towards "signability picks"; those that may not offer premium talent, but came at lower costs to obtain. Thus, the very thing they sought, talent was not coming to them, unless they divine (or lucked into) the right picks at lower costs. Which could happen as talent is far from a certainty, even at the top, as discussed. Especially if they were leveraging any new analytical insights in making that pick, the outcomes could be far different than the outlays of cash.

But this ties all players to risk assessment. As large market teams had their share of busts from selecting such elite talents. At present, Oakland, Pittsburgh, Tampa, Kansas City and other less popular/populated destinations could select "their" guy high in the 1st round, but if a keen agent's tactics, or kid's available options, college for high schoolers or a senior year, interfered, these selections turned into riskier propositions, and could break the budget of these teams with disastrous results. So, this process, was hedged; or weighed against more willing, if less premium talents (considering the said ceiling of a prospect.)

Moreover, these teams' front offices could hire several MBAs to quantify the risk profile of buying into such players. A good analyst had at \$150-200,000 to find players theoretical maximum production; project various outcomes off that; and calculate the expected dollars gained from adding unproven players versus

the actual player's bonus desires outflowing. **Analyst return on investment:** better at assessing talent, quantifying expected values and "bust rates", before the *X million dollars* invested into 18-21 year olds come to pass. Lastly, this is all off a scout's reports, even if accurate at present, this method cannot foresee the future. No one can. Just project and adjust to what you know *from history*.

Questions asked: What value does the player add to the bottom line? How does the team market them? Is the player able to move us from X wins to X+Y wins and how does that effect revenues (TV, Home Attendance, et. al.), if at all? And weigh the obvious question: how mature are 18-21 year old players? What is the cost to keep them under control longer term? Are they a positive influence on the 'team concept' one has? When in the deepest ocean of players, fighting too bigger fish teams, it is always preferable to know where the sharks are and the enemies to a successful (fans) and profitable (owners) plan.

And player acquisition, by drafting, is but one piece to the puzzle. Trading, free agents and those international signings add more *valuation projects* for the analyst to finalize the big picture while promoting a "team concept" *on paper*.

As such, front offices likely prayed often, more than paid out, for some risky talents. College players were and are safer risks, less leverage, if seniors, if less potential to raise their games to another level, at least, *in theory*. Smaller markets were unable to justify huge outlays for one player, thus risk-adverse. The ability *to save* on the top draft pick, to sign guys liked later, also plays in this dance. Even if only two guys make The Show, out of forty, you still have to select and sign close to those forty players a season. (Draft rounds changed in 2012.)

Sky Andrecheck, who has worked in the Cleveland Indians front office since 2010, discussed draft success at *The Baseball Analysts (now archived)*. He studied rates of success of high school versus college players, pitchers versus hitters, among other things. He summarized his finding in June 2009:

- "1) The first few draft picks are worth vastly more than later picks - a fact that is becoming more and more true as time goes by.
 - 2) College players are a better bet than high school players, although this advantage has decreased through the years.
 - 3) Pitchers, on the other hand, are less likely to bring value, a fact that is more true today than it was years ago.
 - 4) Finally, highly drafted pitchers are about as likely as hitters to make a positive impact in the majors, but are much less likely to be truly great players."
- (Andrecheck 2009)

This reinforces some of the prospects analysis results from above. He too reflected the power shift to the left of the best based off descending draft order.

A telling example: In 1990, high school pitcher Todd Van Poppel represented such an occurrence. He was projected to go 1st overall to the Atlanta Braves, who were not *The Atlanta Braves* of the past quarter century. They were horrible in the late 1980s, and thus had the number one pick. Van Poppel made it fairly clear he was not going to sign with the Braves, and instead, was selected

later by Oakland. Atlanta went with a high school SS: HOF 3B Chipper Jones ([85 WAR](#)) for just \$400,000, a pittance, in today's market.

Then, *The Oakland A's* of Canseco, McGwire, Rickey Henderson, Bob Welch (who passed in 2014), Dave Stewart, and Dennis Eckersley, who used the phrase, *Dialin' 8*, for a pitcher's bane, home runs, made up this formidable roster. GM Sandy Alderson, scouting director Walt Jocketty, and manager Tony LaRussa, were running the team. The *Oakland-Alameda County Coliseum* hosted over 2,900,000 fans in 1990, the apex of their attendance on the left coast. The A's were at their peak with talent (back-to-back World Series), and financially, if fan attendance and wins reflect in team revenues correctly. Their 1991 payroll was very comparable with 2001-2002 payrolls of the *Moneyball* teams. This too is well before salary inflation took off to new vistas defined by A-Rod's signing.

Van Poppel was represented by superagent Scott Boras, who has leveraged teams to make his clients amongst the richest in professional sports over the past quarter century, including the quarter-billion dollar A-Rod deal. Van Poppel signed for a substantial, for the time frame, \$1.2 million out of a Texas high school, three times what Chipper got. (Considered \$2 million plus adjusted for inflation.) Van Poppel's career was rather undistinguished but for this initial foray into the draft system as [-.5 WAR in 900 innings pitched reflects.](#))

Oakland's powerful team crumbled, with aging, trades, injuries, and failures to quickly replace talent in the 1990-1995 drafts, due, in part, to selecting later in the 1st round. This moved the A's to bottom rung by 1997-1998 as Alderson, LaRussa, and Jocketty took their talents elsewhere, namely St. Louis for the latter two. 1st round draft pick "bust" (#23, -1.6WAR) Billy Beane took the baseball reins from Alderson in October 1997 in Oakland. And so, the cycle in the baseball business: the peak is nice, but lasts a short while without resources to replace the moneyed talent on the field. Beane sought to rectify this problem.

For Van Poppel (1991) and Jones (1993), both were ranked the no. 1 prospect by *Baseball America*. Van Poppel and Chipper were rated 3 times in the top 10 amongst all MLB prospects. But their outcomes were vastly different. And too, the courses of two franchises were altered just by this decision to select and pay accordingly. Atlanta became the tomahawk-chopping destination of talented players, drafted (Andruw Jones) and free agency-acquired (Greg Maddux); Oakland became source material for both sabermetric and movie myth magic.

By 2012, and a new Collective Bargaining Agreement (CBA), the June draft put in place a luxury tax and slotting system and reduced rounds. These mechanisms were an attempt to allow the smaller market teams chances to compete, with ability to sign based on dollars allotted, and to restrain too the escalating initial bonuses and other benefits (an MLB contract) to these 1st year players.

As Jim Callis, Baseball America prospect expert wrote in April 2013:

"The bonus pools cover the top 10 rounds and any bonus money paid in excess \$100,000 to players drafted in rounds 11-40. If a player doesn't sign in the first 10 rounds, his assigned value is removed from the team's pool total.

A team that exceeds its bonus pool by 0-5 percent must pay a 75 percent tax on the overage. The penalties get much harsher after that: the loss of a first-round pick and a 75 percent tax for blowing past a bonus pool by more than 5 and up to 10 percent; the loss of first- and second-rounders and a 100 percent tax for more than 10 and up to 15 percent; and the loss of two-first-rounders and a 100 percent tax for more than 15 percent."

The entirety of MLB works with \$200 million plus to restock their teams with talent in June draft. Meanwhile the newest system of *International Drafting*, with slot values has substantial upside to a team. As *Baseball America's* Jim Callis reflected in April 2014, "The total of the international bonus pools for all 30 teams is \$79,194,000. The industry as a whole spent \$219,302,880 on Draft bonuses in 2013, and had paid out \$88.7 million on applicable international bonuses through Feb. 9 (the signing period runs through June 15) (Callis 2014)."

This globalizing arena may provide the next "market inefficiency" to exploit as it taps into a 16-18 year old, and either hopes for a *King Felix*, or the dollar value can be used in trade. Cubs GM Theo Epstein utilized this tact in the 2013 in the run up to the July 31st trade deadline. He swapped out a minor league prospect for Houston's allotted international value to gain more flexibility in signing top 16-18 year old international prospects. The mechanism worked to secure more highly rated, if still riskier, propositions. Yet, these player costs (now considered a manageable \$1-2 million), are weighed against top of the 1st round picks going for \$5.5 to 8 million. While the development time is much longer, the results could become enormous, if they pan out.

2014 June Draft	Allotment for All Slots	Team	Allotment
Arizona Diamondbacks	\$7,228,300	Milwaukee Brewers	\$7,605,600
Atlanta Braves	\$4,557,700	Minnesota Twins	\$7,525,600
Baltimore Orioles	\$2,204,400	New York Mets	\$5,308,300
Boston Red Sox	\$6,373,300	New York Yankees	\$3,202,300
Chicago Cubs	\$8,352,200	Oakland Athletics	\$4,778,300
Chicago White Sox	\$9,509,700	Philadelphia Phillies	\$6,896,700
Cincinnati Reds	\$6,973,400	Pittsburgh Pirates	\$7,063,700
Cleveland Indians	\$8,234,100	San Diego Padres	\$6,098,600
Colorado Rockies	\$8,347,300	San Francisco Giants	\$5,949,800
Detroit Tigers	\$4,890,200	Seattle Mariners	\$6,767,900
Houston Astros	\$13,362,200	St. Louis Cardinals	\$7,087,200
Kansas City Royals	\$8,602,900	Tampa Bay Rays	\$5,848,400
Los Angeles Angels	\$5,774,000	Texas Rangers	\$4,820,700
Los Angeles Dodgers	\$4,947,700	Toronto Blue Jays	\$9,458,500
Miami Marlins	\$12,741,700	Washington Nationals	\$5,275,700
		2014 June Draft	\$205,786,400
2012 June Draft	\$189,903,500	2013 June Draft	\$202,501,600

Source: *Baseball America*

Front Office Thoughts: On the Player Development Game

In mid-2014, San Diego fired their GM Josh Byrnes. This by itself is not unusual. Movement of front office personnel comes with not meeting results in the ownership's allotted time to achieve successful changes. However, Byrnes held his position for only two plus years (November 2011), and did not inherit a champion, just potentially good players. This, as we have shown, is not long enough to get even one's first player out of the draft (June 2012). Moreover, with the Dodgers and Giants monetary wherewithal, San Diego needed Oakland-like magic to compete. Nevertheless, Byrnes' failures are another's gain as vacancies are filled by those considered top prospects in baseball management/operations.

The predecessor regime, Jed Hoyer and Jason McLeod, left for Chicago to work with their close friend, Theo Epstein in autumn 2011. All are of the same age (early 40s) and cut from the same cloth: high usage of analytics. They all worked in Boston during the 21st century run of the Red Sox to the title.

McLeod, rumored for the Padre position (as of this writing), gave an interview on player development and scouting. Here are a few quotes from *Jason McLeod on Scouting and Player Development* by David Laurila from June 2014:

"When you look at teams that have historically done well — the Cardinals are an easy example — from an outsider's perspective you try to glean as much information as you can on how they've gone about things. Certainly, you want to model yourself after the organizations that have been most successful in scouting and player development...

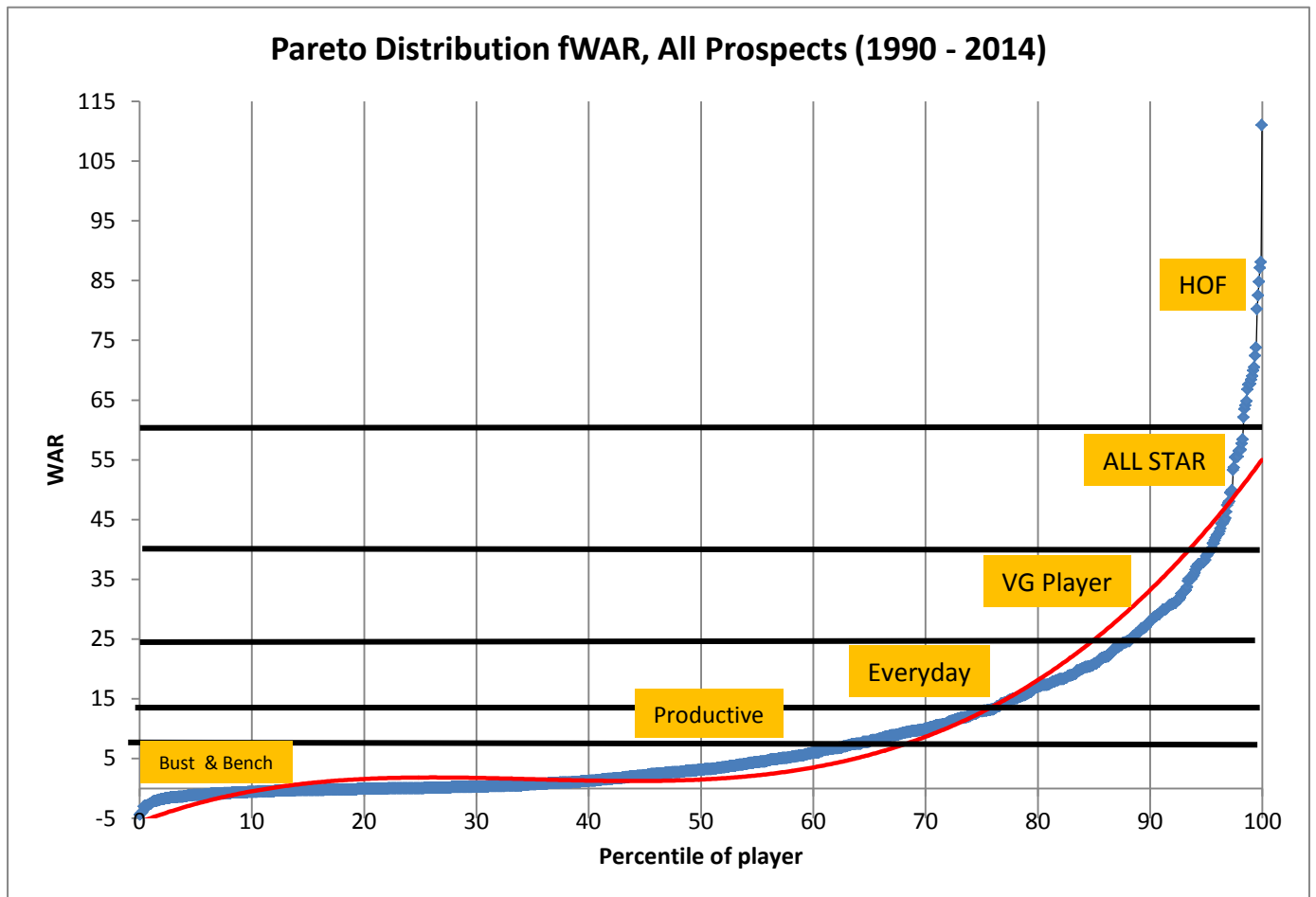
[But O]nce you sign those guys, the crux of it becomes: Are we providing the best possible instruction? Are we creating an environment for those players to maximize their abilities?...With this whole scouting and player development collaboration in mind, I think it's important for the scouts to be aware of what the plan is for those individual players. That's one place where my role comes in.

On evaluating the scouting staff: "We have a performance review process in place. Most of us [scouting directors and cross checkers] have been area scouts, so we understand the grind. I say this every year when we have our meetings with scouts in January: We know that maybe 90 percent of the work an area scout does will go for naught. He's not going to get that player, simply because of the logistics and dynamics of the draft.

Scouting the mental game: "You need to see a player play a lot. On just one look, or just one weekend — especially if the guy didn't perform for you — you can walk away saying 'Gosh, I'm worried about this guy's motor. He just doesn't play with a lot of energy.' You have to be careful about that. [On Jed Lowrie:]...we could see he had the pulse of an assassin.

High risk high reward versus lower ceiling safer picks: "You're going to look at certain college players and know they'll play in the big leagues. You don't know for how long, or how great they'll be, but you can see they're going to get there. Others, especially younger guys, have a chance to make a lot more of an impact but are a lot riskier. That's one of the biggest challenges."

Pareto at Work in Baseball 1990-2014



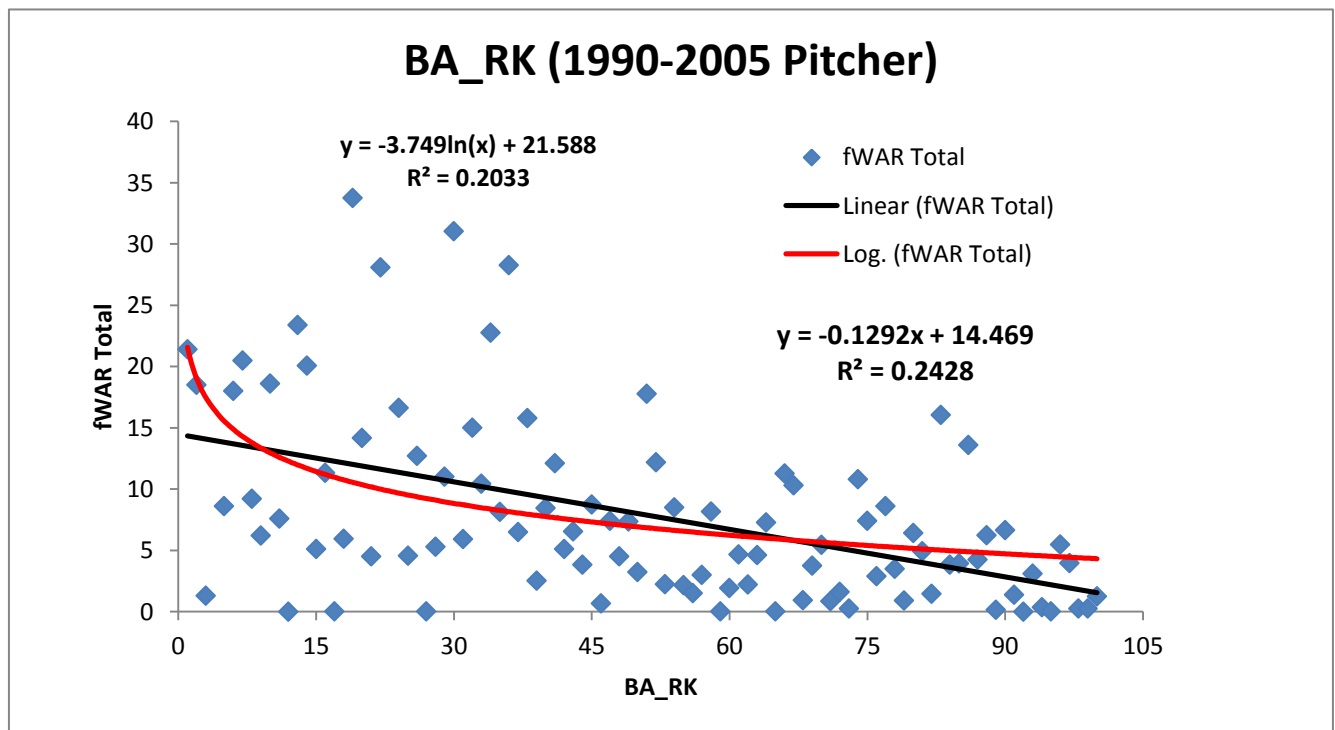
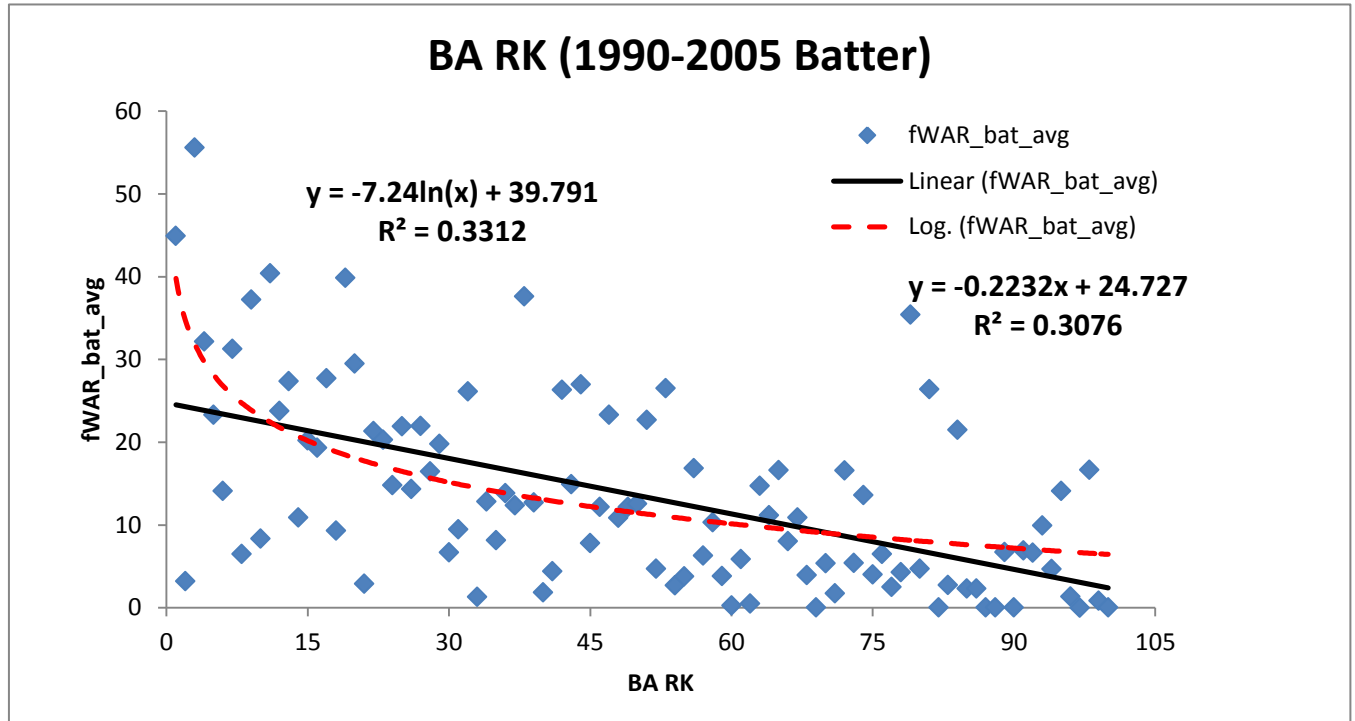
This expresses again the relationship of what talent is doing on the field. Bust and Bench players make up over 62% of the player universe; Productive, a 13% plus slice of the pie; and everyday guys another 11% slice. Thereafter, 8% land as very good players, and roughly 6% slices out for the remaining HOFers and All Star types. The June draft generates much of this player universe (80%), with the international undrafted types growing, if over twenty-three years of age, but in that new market lay ways to improve upon drafting as even younger prospects come from tropical haunts and across the globe.

Baseball loves these talent search mechanisms. To capture the best player early, cheap, and developed them into a \$100-million plus asset on their books; to put wealthy fans in the expensive box seating, or any seat; and to win games for the prospect of seeing October, and those extra revenue sources that come from that. This is what it actually tends, more than not, to be about: business.

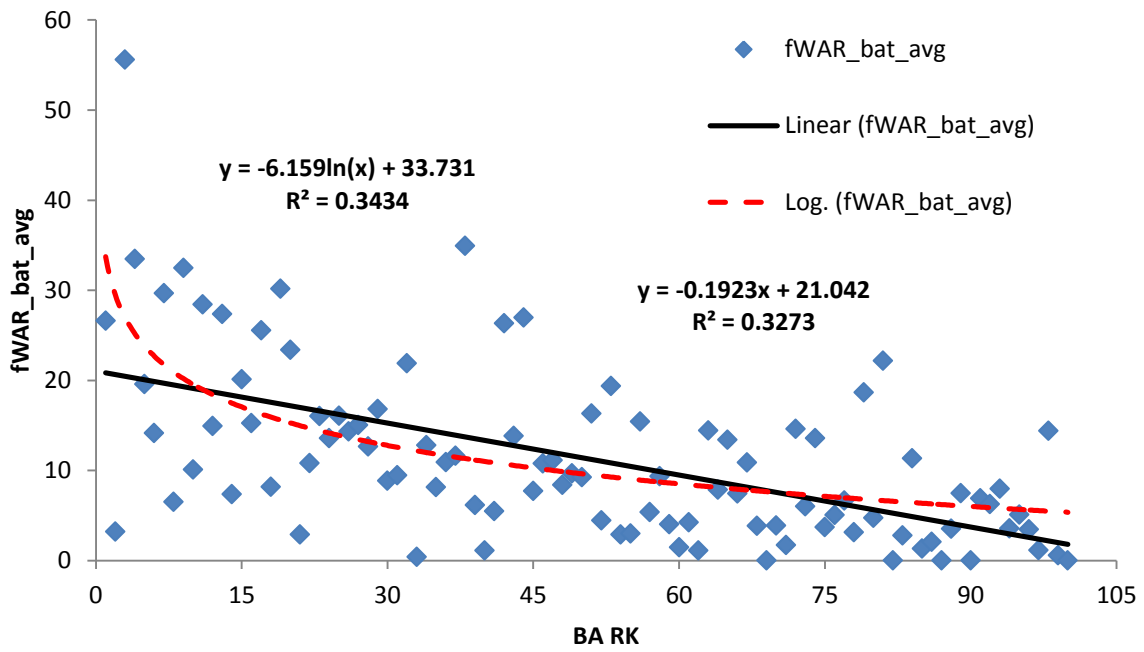
But it all starts somewhere near a high school, a college, a tryout on a hot day, or an international showcase where anyone can be the scout that "found" a kid trying to mature into a big leaguer, but without said big league tastes, at least, not just yet.

Graphing the Baseball America Prospect Story: Snapshots

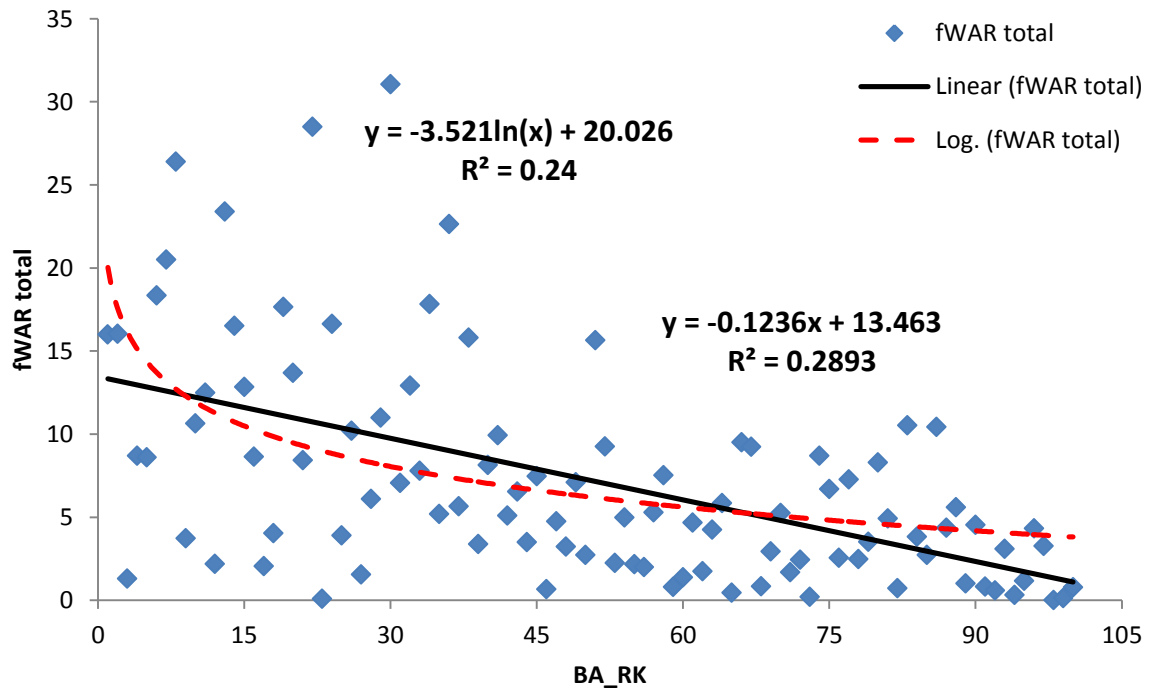
This sub-section is about a picture being worth a thousand mediocre words. And how again the *power law* can be reflected; how it moves with various years captured. So, the graphs:

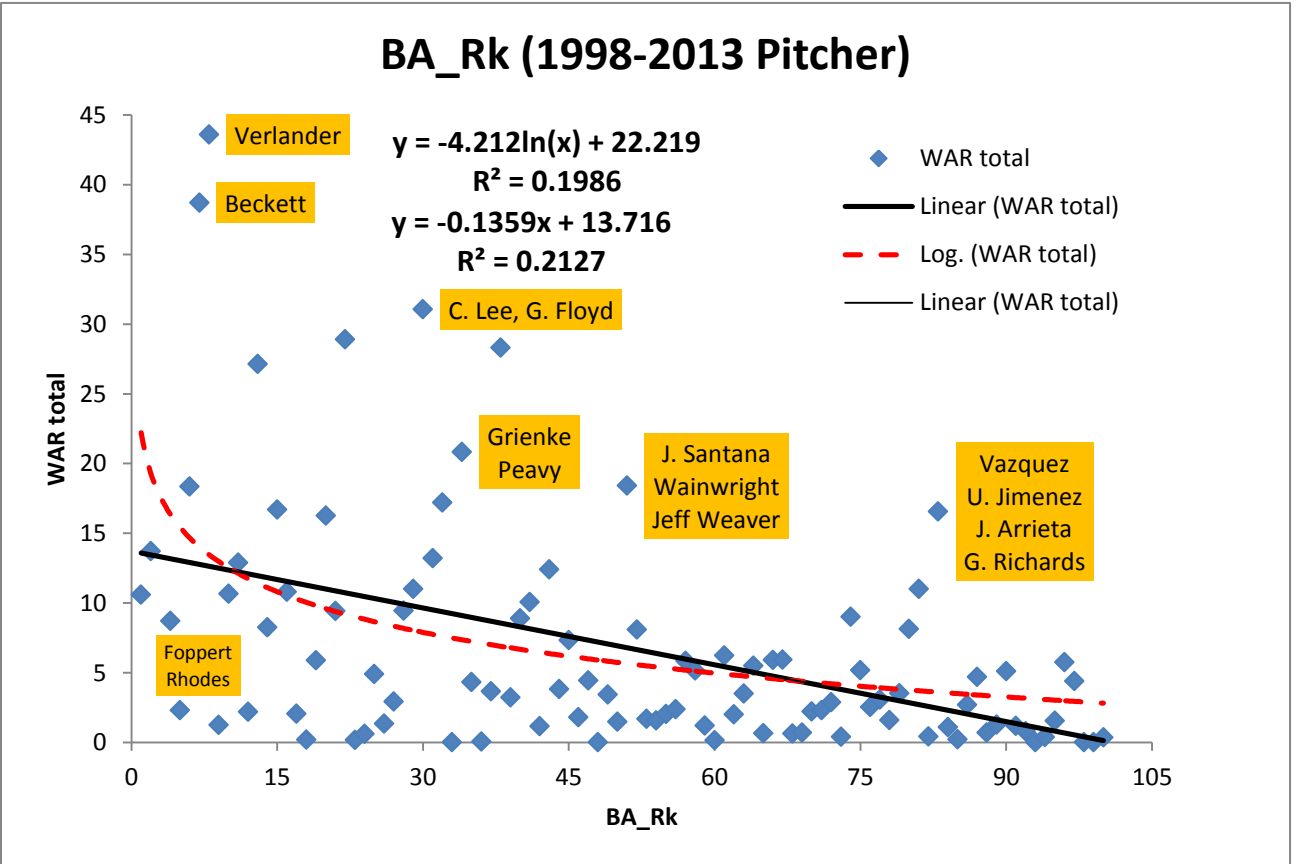
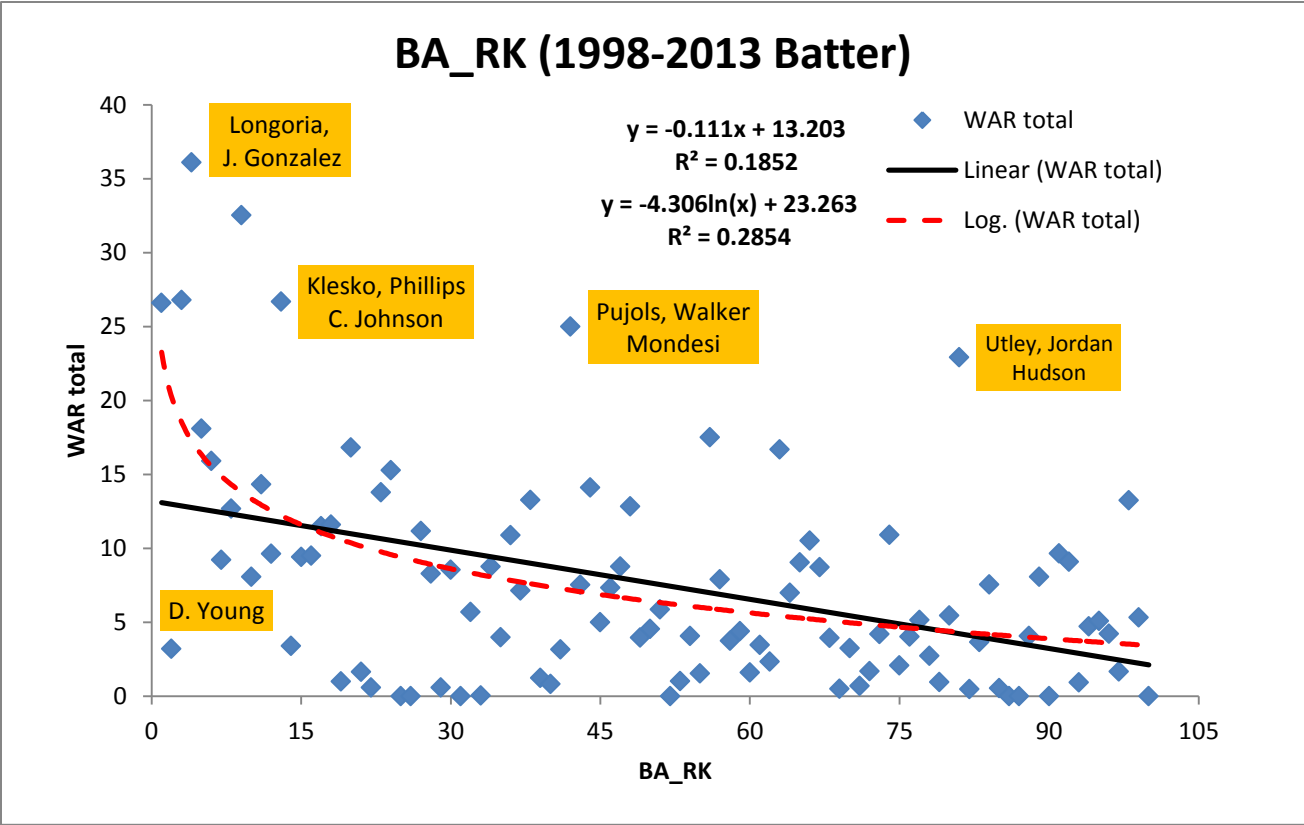


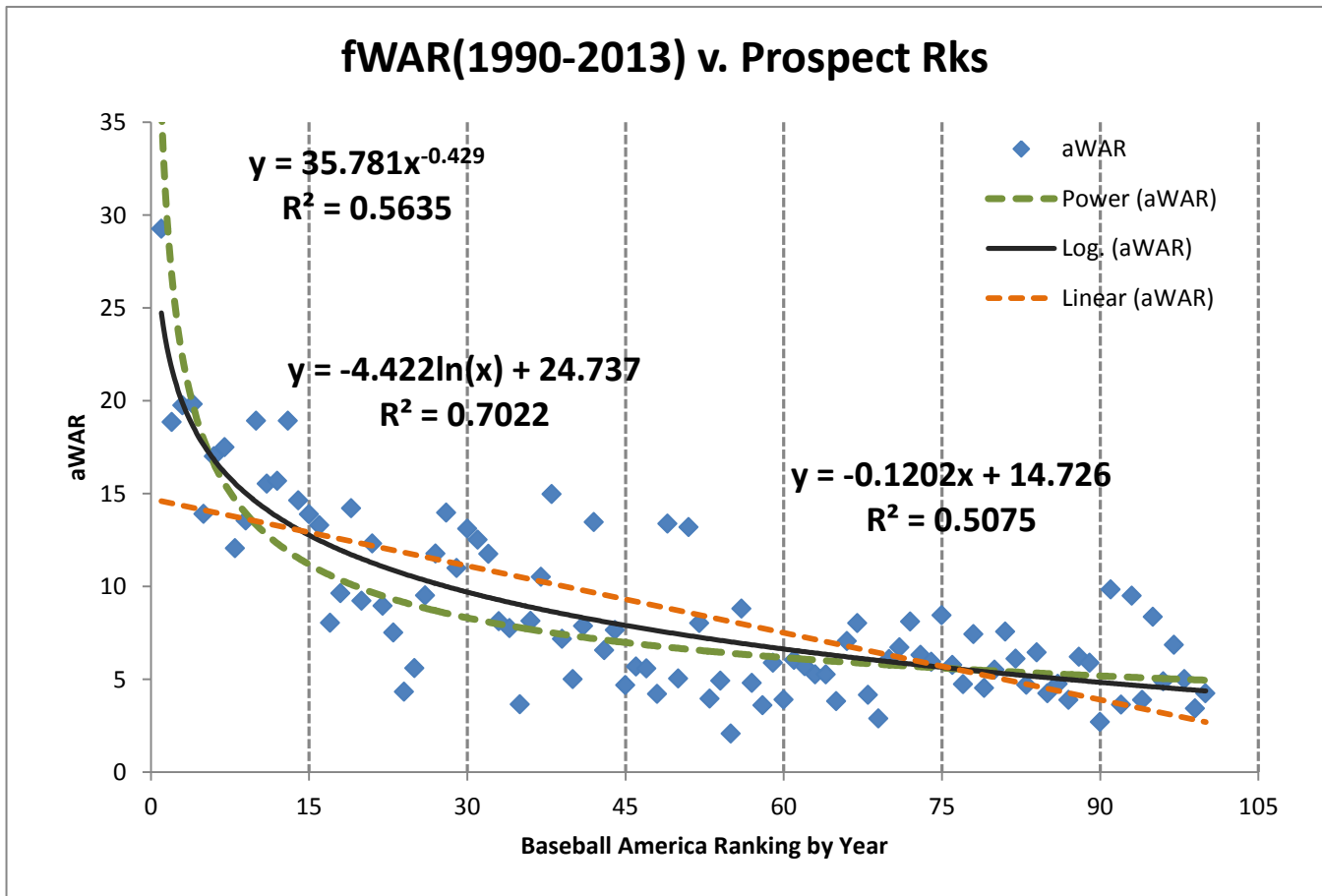
BA RK (1990-2012 Batter)



BA_RK (1990-2012 Pitcher)







These graphics reflect the log/exponential nature of acquired talent from any source. That once outside the top 15 rated prospects, there is a substantial drop off. The WAR value, in rankings 15 to 70, is close to linear. The results of the regressions performed and displayed above are below. Batters, were more variable (standard deviation), but higher starting values (intercept). In 1998-2013, the advent of better analysis of hitting tools/rates may be reflected in the variation as the batter deviation ticked down. But it is early for some prospects included as it takes 2-4 seasons to know if a player can be a success. Pitchers across time, seem more stable (slope and deviation), until recent analysis. 1998-2013 span is a bit troubling for them, as it could reflect the change in usage (the call up rate); higher incidence of arm troubles; and just the *churn effect* discussed. Batters intercept dropped the most, but again too early yet to know.

Linear Regression				
Type	Results	1990-2005	1990-2012	1998-2013
Batter	St. Dev.	9.76	8.04	6.78
Pitcher	St. Dev.	6.6	5.65	7.56
Batter	Linear Slope	-0.22	-0.19	-0.11
Pitcher	Linear Slope	-0.13	-0.12	-0.135
Batter	Linear Intercept	24.72	21.04	13.2
Pitcher	Linear Intercept	14.46	13.46	13.71

BA Farm System Rank: Do Prospects Convert to Wins?

Branch Rickey developed an enormous farm system that result in World Series titles for the organization he led, years after his departure. (Dodgers and Pirates did not win the World Series while he was their top guy. But the residual effects were in place.) But Rickey advantaged smartly this sheer quantity of prospects to use as he felt was needed in trades for quality men, or cash.

The modern GM does not have this great luxury. The minor system is even Steven in its framework with 6-7 teams under the logo of a team. No ability to overtly exploit the talent market due to the constraints in place.

GMs have their TV market size and fan bases that ties to payroll size that can be adjusted most readily to acquire talent, fully developed at premium prices in free agency. And then, only after 50% or more of the players' productivity is used up by his opponents. Thus, development of homegrown talent comes with advantages, slimmer though they are, and less costly too.

Even a wonderful player development system can likely produce, at its maximum, 6-10 "top" prospects (ranked in or near the top 100) every two seasons. And some of these were just other team's prospects acquired by trade, not truly homegrown, but taking a veteran MLB player, and swapping him for his theoretical replacements.

And with the bust rates, maybe 2 or 3 prospects will be the MLB guys down the road, if a GM keeps just the "right" guys. This puts 3-7 prospects as "trade bait" in any given season to acquire: another MLB player and his contract, sometimes with salary relief. But which are the right guys to keep or let go? And how much can you leverage out of trade? These are both considerations for GMs. And some do this better than others.

From a farm system perspective, individual system rankings may not provide the results one wants near term, or even, 3-4 seasons down the road. It is why you make such trades to compete near-term, realizing the future is not that secure, or may never come at all. Job security plays a role too.

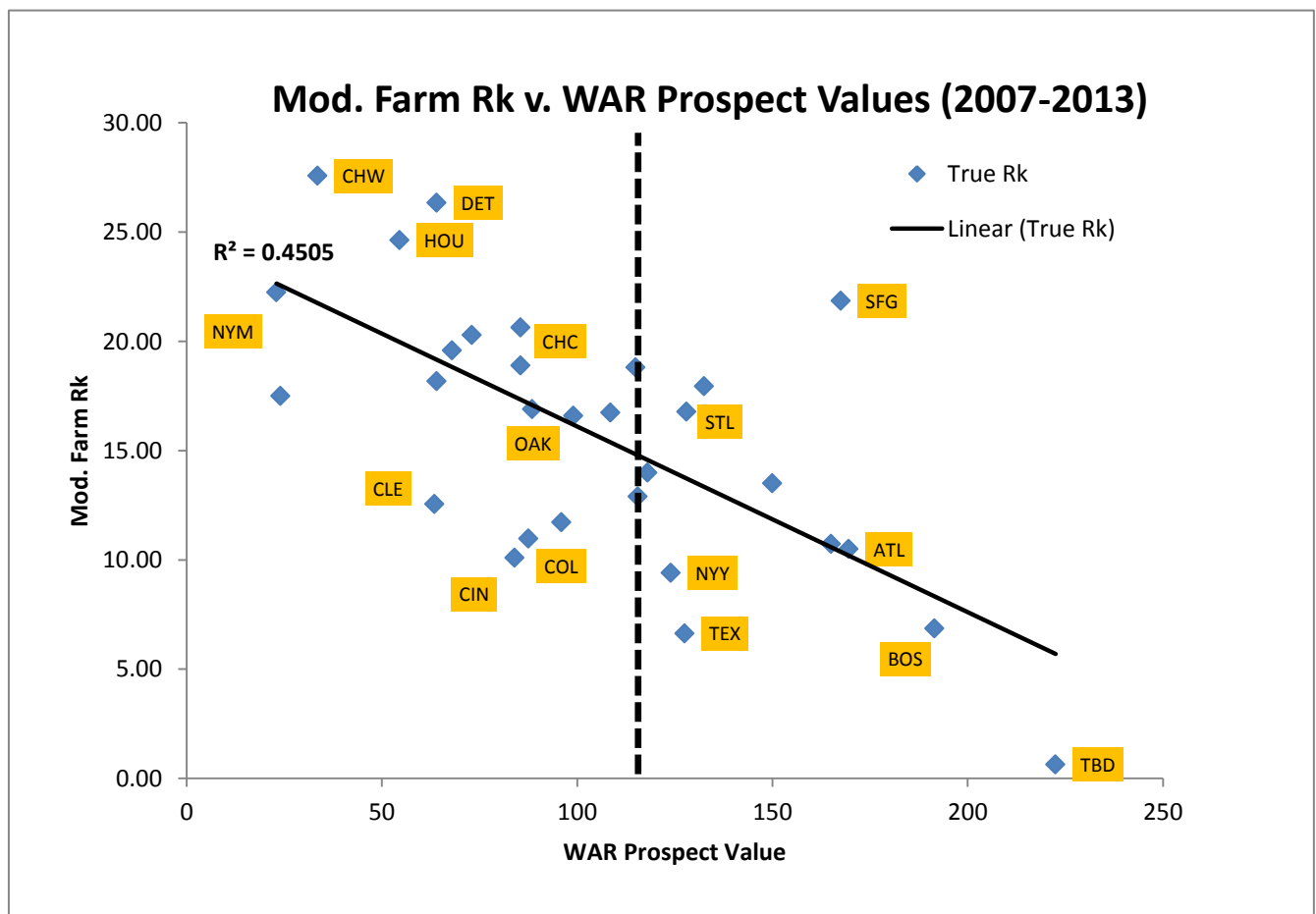
Baseball America (BA) again ranks the farms yearly; produce their very detailed guide that some "prospect hounds" follow and swear by it like a bible. It provides details on most teams systems, their top players, the best arms and bats, best tools – throwing, power, speed, glove, contact/average hitter – and deciphers this all down to team by team rankings. Do these follow their top 100 rankings? From quick analysis: yes.

Running a quick and rough model on their team ranking data versus prior WAR models of the top 100, provided a 45% R-square fit from 2007-2013. The pre-existing categorizations: elite, high, average, and low were summed up by team (389 separate prospects) and values for their WAR were added:

Prospect	aWAR
Elite	32
High	9.5
Average	0.5
Low	0.5

There was not a differentiating between pitching and hitting prospects, as that would provide a better fitting model undoubtedly. The goal here *was not* to perfect how BA ranks their farm systems, but rather to show it does correlate to their individual top 100 over a period of years. Another reason is to reflect that in average rankings for 2007-2013, the exponential curve fit better than a linear model did, once a deviation factor was made to a farm's average rank for the linear model. The standard deviation was 8.6 for all 30 teams. So wide variations in how well teams rank yearly arise due to trading talent, talent doing poorly (regression), injuries, moving up to the MLB, or out of the ranking system by other means, make jumps, a given, year to year in farm rank.

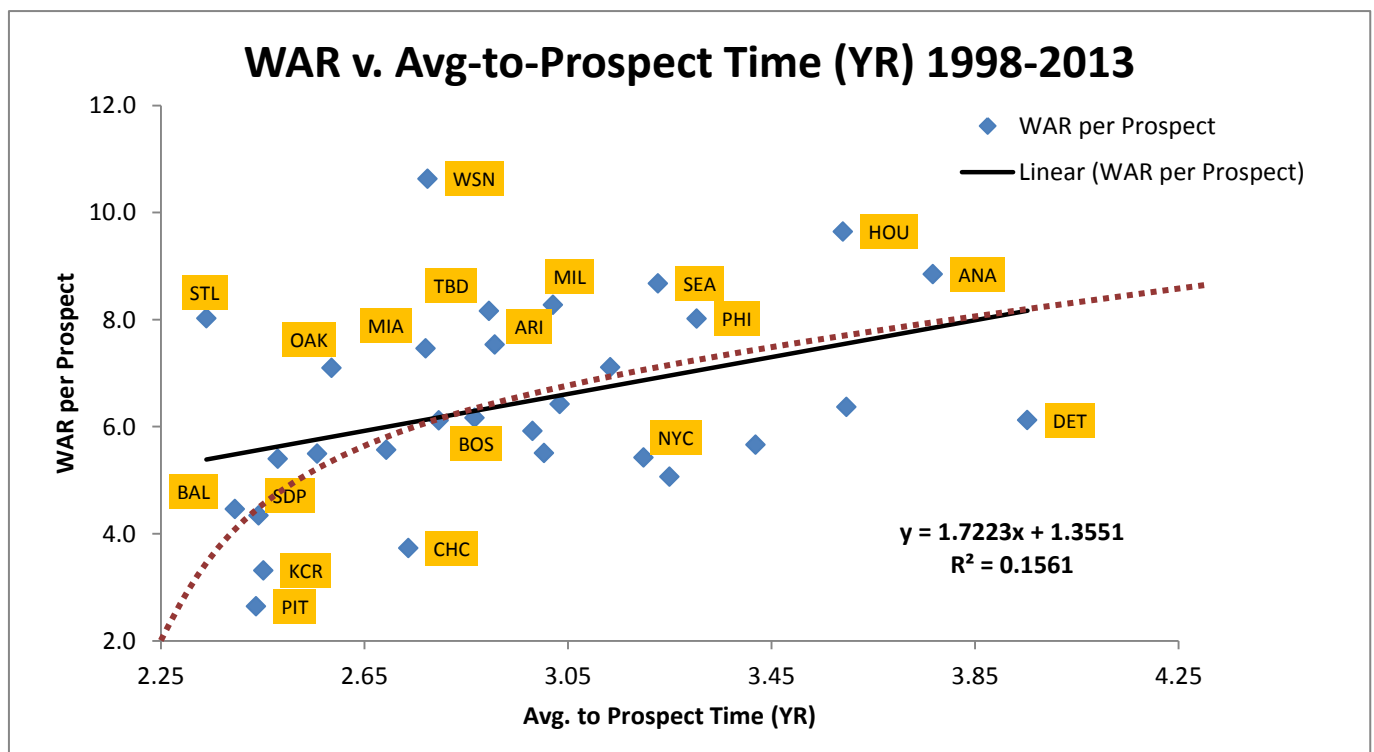
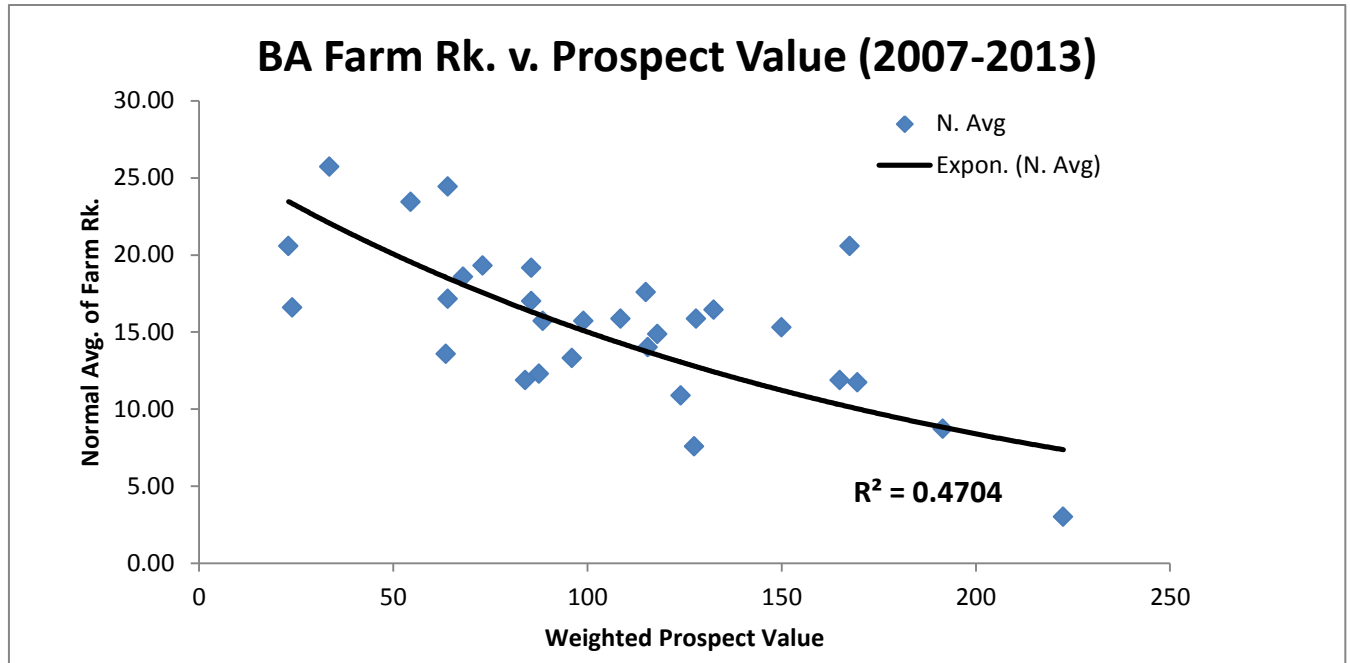
Note: From that, the teams with lower deviations were calculated higher rankings (high equals better) based a rough stability factor. And more variable ones a lower ranking (worse). But this is centered off comparing to a 15.6 (30 to 1) *average* farm ranking average. So, if you were below 15.6 on average, the value moved down. This way, it spreads the ranking system, adding differences, instead of bunching them up. The Rays were adjusted due to a negative ranking value, as they have rated very highly, and varied little. The graph is as follows.



One can notice that prospect WAR potential values (over 120) are slightly indicative too of team success. As Tampa, Boston, Texas, San Francisco, Atlanta,

New York, and St. Louis appeared in the playoffs (multiple times), even if their farm rankings are widely variable. (**Not shown:** Baltimore (150) and Pittsburgh (132.5) made strides, attending playoffs.) Detroit wrinkles this notion a bit with more money put in *at the top* on players added, or extended: Miguel Cabrera, Prince Fielder to go with Justin Verlander, to name a few, noteworthy high salary players (then trading away Fielder in late 2013 to Texas.)

Many of those same teams have substantial revenues, aside from Tampa and Atlanta. Tampa is a *Baseball America* darling since 2007. As the 2014 season progressed, the Rays shopped David Price to restock their farm system.



In graph one above, the analysis without the ranking adjustment was done. The resulting best fit by R-square, was a curve, not a line. The final analysis is reflected below in a table. **Note:** As it was a quick-to-see regression, this was not tested against season-to-season ratings versus prospect number and quality.

Time to Prospect Rating: Maturation Cycle Complete?

In the 2nd graph above, was a rough analysis of time from team signing to becoming a prospect and the resulting WAR per prospect was calculated in the system. The prospect time is the average time to becoming a top prospect. For example, if a player is rated multiple times, the average of the difference from his acquisition to his average of prospect year was calculated. Example: AJ Burnett was signed in 1995 and ranked in 1999 and 2000 by BA. So 4.5 years to become the highly touted prospect AJ was, who also succeeded.

This was done to see if any patterns arose. It seems smaller market teams have shorter times for their prospects being rated. But their WAR per prospect are generally lower too. This can be misleading. As one truly successful prospect can and does influence such averages, making a huge difference to the results. Success is truly dependent on the weight of that success. 1 Chipper Jones outweighs 8 Corey Pattersons in looking for quality over quantity. The Mike Trouts can make up for anemic farm production. Especially if they rated once, as an average or low prospect, then move on to solid careers.

Nevertheless, this tends to reflect a *maturation cycle*. By a player's third year after turning professional, if he rates as a top prospect, he is close to his ultimate level of success, whatever that is going to be. Another year may provide the polish to achieve better results. But teams are likely guilty of rushing this curve to get that potential win out of top prospect, if an injury has hamstrung their chances to go to the playoffs. The prospect is "ready enough" compared to the failed or bench guys they readily have access to in their minors usually.

Is this right to do? Every GM and team's situation is different. Gambles that work are applauded; failures are quietly placed in the failure pile with countless others.

Yasiel Puig came to the majors a bit raw after the Dodgers appeared more like a *M*A*S*H* unit than a baseball team in early 2013. Puig's results were very good – 4.0 fWAR in half a season – but he appeared a bit overmatched at times, and lacking the polish many would say is a mark or hallmark of a MLB player, base running and sliding an identifiable problem. (His complex path is a worthy plight. He landed in America after a harrowing defection from Cuba.)

Nevertheless, he improved in year two, no sophomore slump, through adapting, slowing down the game, becoming more patient. Or too it just shows a final progression of a physically talented man, gaining stability with time and an assured position. Puig presents rough edges still, but slightly less of them. This is a very broad stroke example; more anecdotal than purely objective. And the curve fit above, and R-square, do not support any far reaching conclusions. It was a test of data collected on these prospects.

Baseball America Farm Rankings (2007-2013) and Projected Prospect Value

BA Rank	2007	2008	2009	2010	2011	2012	2013	Norm. Rk	Mod. Rk	Prospect Rated	WAR Prospect Total	Prospect Type	aWAR
ANA	4	11	25	26	15	19	30	18.6	19.6	10	68	Elite	32
ARI	3	20	26	28	22	4	8	15.9	16.7	10	108.5	High	9.5
ATL	15	8	6	9	3	15	26	11.7	10.5	15	169.5	Average	0.5
BAL	17	14	9	8	21	21	17	15.3	13.5	12	150	Low	0.5
BOS	9	2	13	5	17	9	6	8.7	6.9	23	191.5		
CHN	18	18	27	14	16	14	12	17.0	18.9	18	85.5		
CHW	25	30	16	23	27	30	29	25.7	27.6	13	33.5		
CIN	12	3	14	17	6	16	15	11.9	10.1	15	84		
CLE	10	19	7	3	7	29	20	13.6	12.6	10	63.5		
COL	2	7	20	10	9	17	21	12.3	11.0	13	87.5		
DET	14	27	28	27	25	23	27	24.4	26.3	11	64		
FLA	16	17	2	7	29	28	5	14.9	14.0	11	118		
HOU	22	29	30	30	26	18	9	23.4	24.6	10	54.5		
KCR	11	24	11	16	1	2	18	11.9	10.7	15	165		
LAD	6	6	23	21	11	24	19	15.7	16.9	15	88.5		
MIL	7	21	10	13	30	26	28	19.3	20.3	11	73		
MIN	8	15	22	6	12	20	10	13.3	11.7	12	96		
NYM	13	28	17	25	20	25	16	20.6	22.3	10	23		
NYY	5	5	15	22	5	13	11	10.9	9.4	14	124		
OAK	27	9	3	11	28	7	25	15.7	16.6	9	99		
PHI	21	22	12	18	10	27	24	19.1	20.6	18	85.5		
PIT	19	26	18	15	19	11	7	16.4	17.9	13	132.5		
SDP	29	13	29	20	8	3	14	16.6	17.5	12	24		
SEA	24	12	24	12	18	6	2	14.0	12.9	15	115.5		
SFG	20	23	5	23	23	22	28	20.6	21.9	11	167.5		
STL	23	16	8	29	24	10	1	15.9	16.8	13	128		
TBD	1	1	4	1	2	8	4	3.0	0.6	13	222.5		
TEX	28	4	1	2	14	1	3	7.6	6.6	12	127.5		
TOR	26	25	19	19	4	5	22	17.1	18.2	11	64		
WSN	30	10	21	24	13	12	13	17.6	18.8	14	115		
S. Dev./Totals							8.66	4.8	6.0	389.0	3128.5		
Avg. Rk./Totals							15.6	15.6	15.7	13.0	104.3		

Source: Baseball America (2007-2013)

Prospect Success/Failure Rates by Team Signings (1990-2006)

1990-2006	60+ WAR	<60 WAR	<40 WAR	<25 WAR	<15WAR	<7WAR	<2WAR	Prospects	Bust %	Product%	fWAR_bat	fWAR_pitch	WAR/Pros
Team	HOF	All-Star	VG Player	Every day	Product	Bench	Bust						
ANA			4	5	5	5	14	33	42%	42%	177.6	129	9.3
ARI			1	2	4	4	4	15	27%	47%	84.6	40.8	8.4
ATL	2		6	5	8	6	27	54	50%	39%	367.7	174.2	10.0
BAL	1		1	5	4	3	17	31	55%	35%	76.3	185.2	8.4
BOS	1	1	5	5	3	4	22	41	54%	37%	282.6	150.1	10.6
CHC			1	4	3	5	22	35	63%	23%	48.9	114.8	4.7
CHW	1	2	3		8	4	17	35	49%	40%	307.8	66.4	10.7
CIN			1	3	6	2	15	27	56%	37%	129.5	45	6.5
CLE	3	1	2	2	6	7	11	32	34%	44%	209.7	213	13.2
COL		1	1	6	1	2	15	26	58%	35%	98.1	117	8.3
DET		1	2	2	5	6	13	29	45%	34%	134.6	99.1	8.1
FLA		1	6	2	1	2	13	25	52%	40%	209	101.4	12.4
HOU	1	4	3	3	3	3	13	30	43%	47%	253.8	219.8	15.8
KCR	1	2	1	3	2	5	15	29	52%	31%	171.7	120.9	10.1
LAD	3		3	6	6	6	21	45	47%	40%	289.1	209	11.1
MIL			4	5	3	2	11	25	44%	48%	188.1	58.8	9.9
MIN		2	1	3	3	7	16	32	50%	28%	183.2	50.6	7.3
NYM		1	3	2	9	8	19	42	45%	36%	186.1	139	7.7
NY Yankees	2	1	2	4	5	8	22	44	50%	32%	281.4	138	9.5
OAK		1	4	6	5	6	22	44	50%	36%	212.8	152.5	8.3
PHI	1	2	2	6	2	6	5	24	21%	54%	268.9	105.8	15.6
PIT		2	2		4	5	16	29	55%	28%	170.6	39.6	7.2
SDP			3	2	4	6	13	28	46%	32%	135.6	79.4	7.7
SEA	1	4	1	8	1	5	13	33	39%	45%	351.8	153.5	15.3
SFG			1	2		5	18	26	69%	12%	23.6	65.7	3.4
STL	1	1	3	2	4	6	13	30	43%	37%	275	59.2	11.1
TBD			2	2	3	2	5	14	36%	50%	111.6	26.7	9.9
TEX	1	1	2	6	7	5	19	41	46%	41%	268.8	95.1	8.9
TOR	1	2	4	4	8	6	16	41	39%	46%	300.9	185.7	11.9
WSN	1	3	5	5	3	6	14	37	38%	46%	414.5	126.8	14.6
Total /Avg	21	33	79	110	126	147	463	977	47%	38%	6214	3462	9.9

HOF Signings by Player WAR Since 1990

Braves: Chipper Jones, Andruw Jones

Dodgers: Adrian Beltre, Pedro Martinez, Mike Piazza

Indians: CC Sabathia, Manny Ramirez

Orioles: Mike Mussina

Yankees: Derek Jeter, Andy Pettitte

Prospect Success/Failure Rates by Team (1998-2013)

98-2013	60+WAR	<60WAR	<40 WAR VG Player	<25 WAR Everyday	<14WAR Productive	<7WAR Bench	<2WAR Bust	Total	Bust %	Prod%	fWAR_bat	fWAR_pitch	WAR/Pros
ANA		1	2	4	4	6	12	29	41%	38%	121.1	135.5	8.8
ARI			1	3	7	6	8	25	32%	44%	110.8	77.6	7.5
ATL			3	3	8	8	19	41	46%	34%	152.8	108.3	6.4
BAL			1	2	2	4	15	24	63%	21%	69.9	37.2	4.5
BOS			3	3	7	4	23	40	58%	33%	138.2	108.6	6.2
CHC			1	3	3	5	26	38	68%	18%	45.7	96.2	3.7
CHW			2		8	4	17	31	55%	32%	108.3	64.3	5.6
CIN			1	3	5	5	15	29	52%	31%	116.7	42.7	5.5
CLE	1		1	1	3	4	16	26	62%	23%	62	92	5.9
COL			1	5	3	5	13	27	48%	33%	72.7	92.6	6.1
DET		1	1	2	5	6	17	32	53%	28%	84.9	111.1	6.1
FLA		1	2	1	1	3	16	24	67%	21%	104.9	74.2	7.5
HOU		2	1	2	2	2	13	21	62%	33%	95.4	107.1	9.6
KCR			1	1	2	7	20	31	65%	13%	39.4	63.4	3.3
LAD			2	4	5	5	20	36	56%	31%	76.6	127.3	5.7
MIL			3	5		3	13	24	54%	33%	144.1	54.6	8.3
MIN		1		3	1	6	14	25	56%	20%	91.7	46.1	5.5
NYM		1	2	2	4	4	17	30	57%	30%	105.5	108.1	7.1
NYN			2	3	5	5	21	36	58%	28%	132.3	63.1	5.4
OAK			2	6	5	5	17	35	49%	37%	129	119.5	7.1
PHI		2	2	5	1	2	21	33	64%	30%	166.8	97.8	8.0
PIT			1		2	4	17	24	71%	13%	43.3	20.2	2.6
SDP			1	2	2	5	16	26	62%	19%	60.2	52.7	4.3
SEA		3		4	2	7	14	30	47%	30%	154.7	105.7	8.7
SFG			2	2	1	6	14	25	56%	20%	25.6	109.5	5.4
STL	1	1		2	4	3	15	26	58%	31%	186.1	22.6	8.0
TBD			3	3	4	7	10	27	37%	37%	157.9	62.5	8.2
TEX		1	1	4	7	6	15	34	44%	38%	161.6	56.8	6.4
TOR			1	3	2	6	15	27	56%	22%	115.7	21.1	5.1
WSN		2	4	2	3	6	14	31	45%	35%	193.9	135.7	10.6
Total/Avg	2	16	47	83	108	149	486	887	55%	29%	3292	2401	6.4

A Few Undrafted Free Agents Top Prospects & Stars Since 1990

Astros: Bobby Abreu, Johan Santana

Athletics: Miguel Tejada

Blue Jays: Carlos Delgado

Expos: Larry Walker, Vladimir Guerrero

Marlins: Miguel Cabrera

Rangers: Ivan Rodriguez

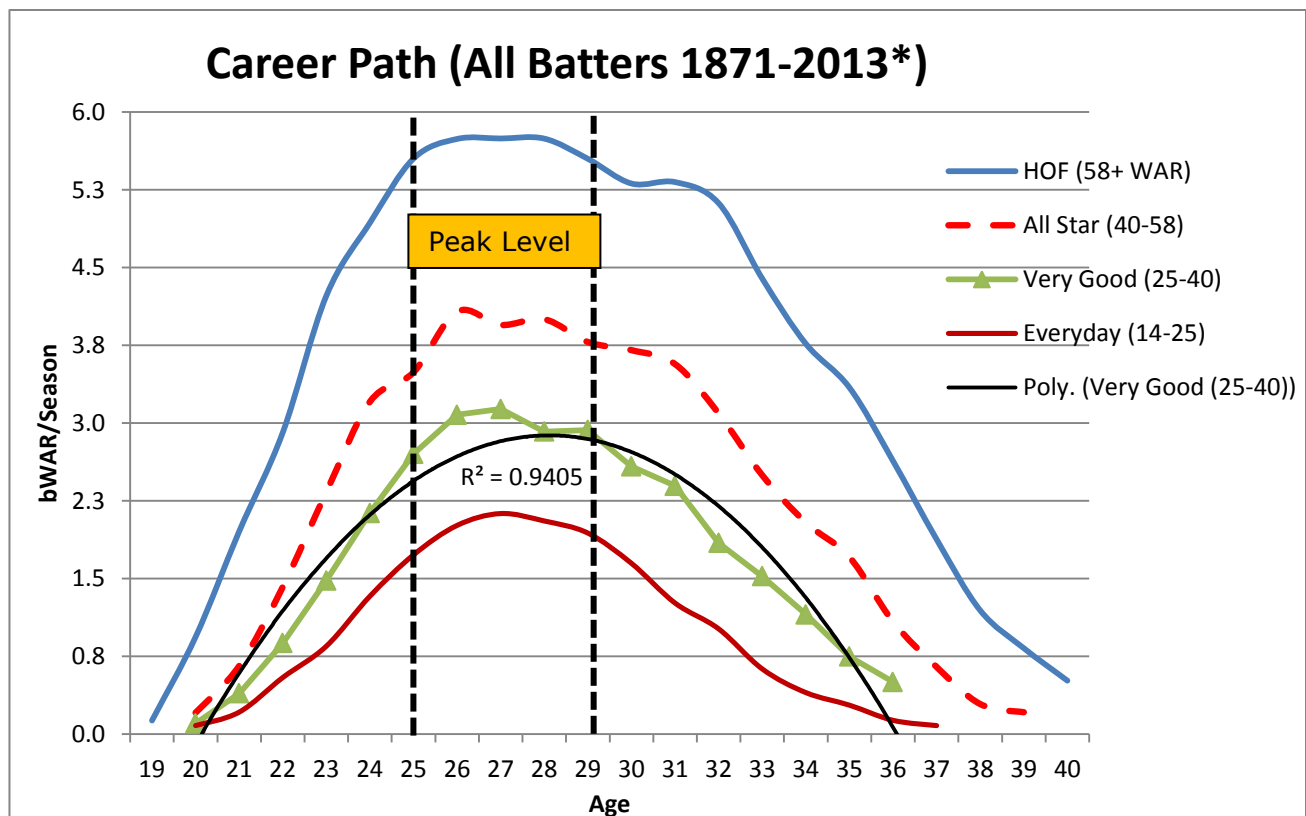
Mariners: Felix Hernandez, David Ortiz, Ichiro Suzuki

Projecting a Career: Age Curves Matter to Valuation

If the above has taught us anything, it is that talent is skewed. And that prospects are highly variable, risky, and often teams can self-delude themselves into believing that various, independent scouts and ratings confirm they have a winner; or that the outcomes are good only for that said ball player. (More information is great, only if accurate.)

What helps here is baseball history. While we can project outcomes onto a ballplayer by scouting and progressions up through the minors against same-similar age competition, the earlier he progresses to the big leagues, and impacts winning, the more firm his projection level can be. History shows us that ballplayers fall into unique patterns – age curves and performance levels – and by 23-25 one can surmise quite a bit about their budding star or everyday ballplayer. This benefits everyone – the player for his career planning and money earning – and the team as they project what it takes to pay to keep that talent.

The following graph on hitters takes in account all ballplayers in Baseball Reference Database up to May 2014*. It includes active ones too, so it is an imperfect study. But, the key is notice the shape of curves and the comparison across their age as player's peak and then regress.



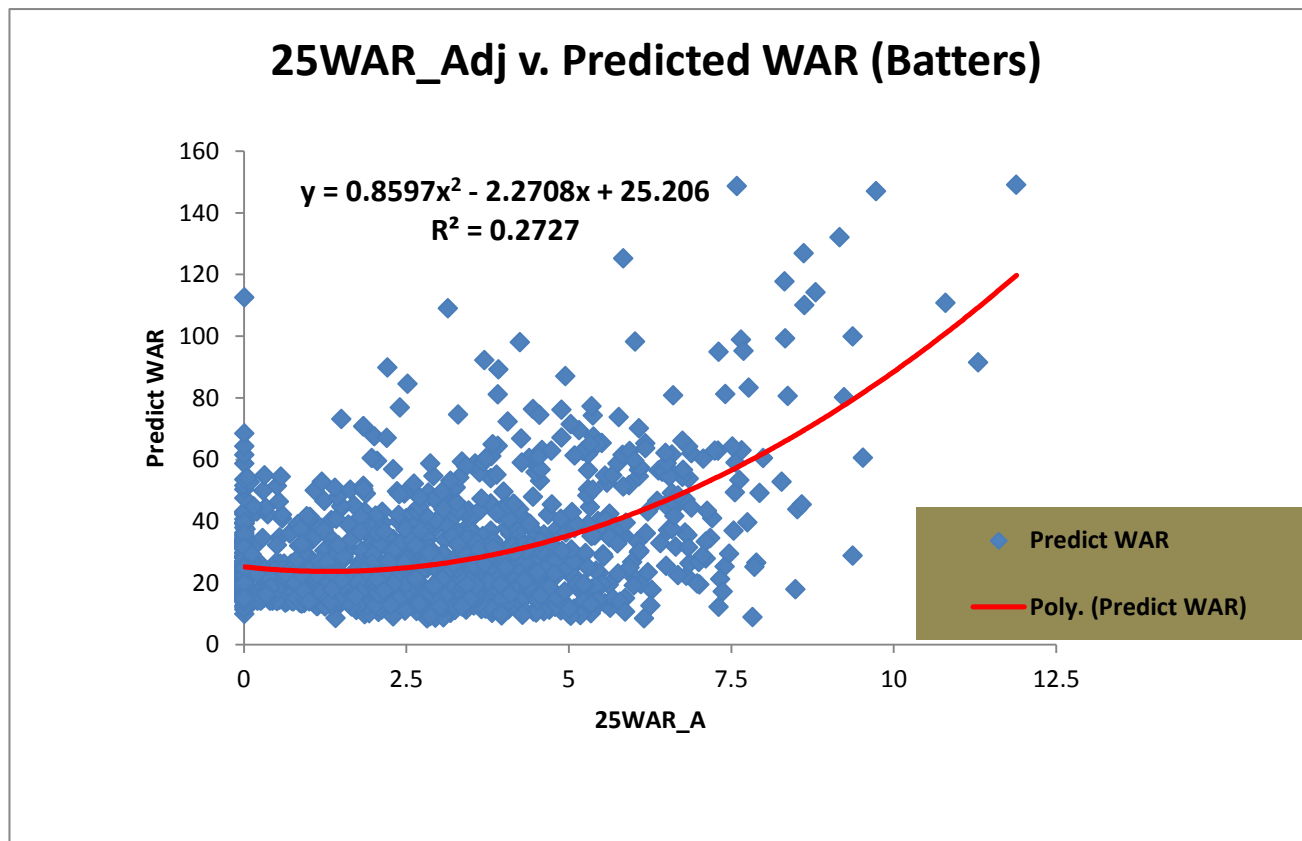
There is a corridor of time 25-29 where players perform best – at their peak levels, even if we segment these levels. HOF players have their duration at the top longer than anyone, going to 32 with HOF/all-star play, and 36 with very

good levels. No surprise there. The next level down, All-stars, too provide their good to great levels beyond an early peak at 26. In short, you can see the parabolic nature. And the fit to a curve is very good, albeit with a small number of data points by age and average WAR obtained.

This though helps to define cut offs. From the six years of time an MLB player has to free agency, to development time to get a quality guy from the minors. If by 25 years of age, a player is not achieving above 1.5 WAR for a season, he is likely more bust than any boom. Earlier than that, if by 22 he is above 2.0 WAR, a team may have a HOF potential on their hands.

In running a regression of age influence, the 22 and 25-year age levels provided the most significant influence on predicting future WAR. In those years, if a high school sign, would be the fourth year removed from one's drafting. A college junior is at least 21 years of age, so too, he would be 4 years removed from his signing. This ties to player development time peaking at three years. In year four, promotion to the MLB, makes sense if one is to measure that player's future in the bigs. A half year plus of A ball (draft year), 1 year of AA, then AAA for a year, plus some time in year 4, is a path of quickest success. Of course, injuries and other issues hamper that ideal time line. And likely that influences a great deal some teams' development track or their usage of older than those broad cutoffs on age; or early promotions.

Such predictions come with a wide error rate. As the regression statistics will reflect. Here first, is the 25-year plot of WAR versus predicted WAR.



This regression was run against the Baseball Reference database to generate 1,205 batters who produced at everyday levels (15+WAR) in their careers, so far. (Again, some data points are still active – but those would tend to reinforce results as they are older than 25 (Trout and Harper aside), and have achieved the minimum levels evaluated.)

<i>Regression Statistics</i>	
Multiple R	48.6%
R Square	23.7%
Adjusted R Square	23.5%
Standard Error	16.5
Observations	1205

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	101764.5	50882.2	186.3	3.45809E-71
Residual	1202	328372.9	273.2		
Total	1204	430137.3			

	<i>Coefficients</i>	<i>Std. Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>
Intercept	18.95	0.752	25.20	7.4E-113	17.5
25WAR_A	3.00	0.230	13.08	1.249E-36	2.6
22WAR_A	2.41	0.289	8.36	1.771E-16	1.8

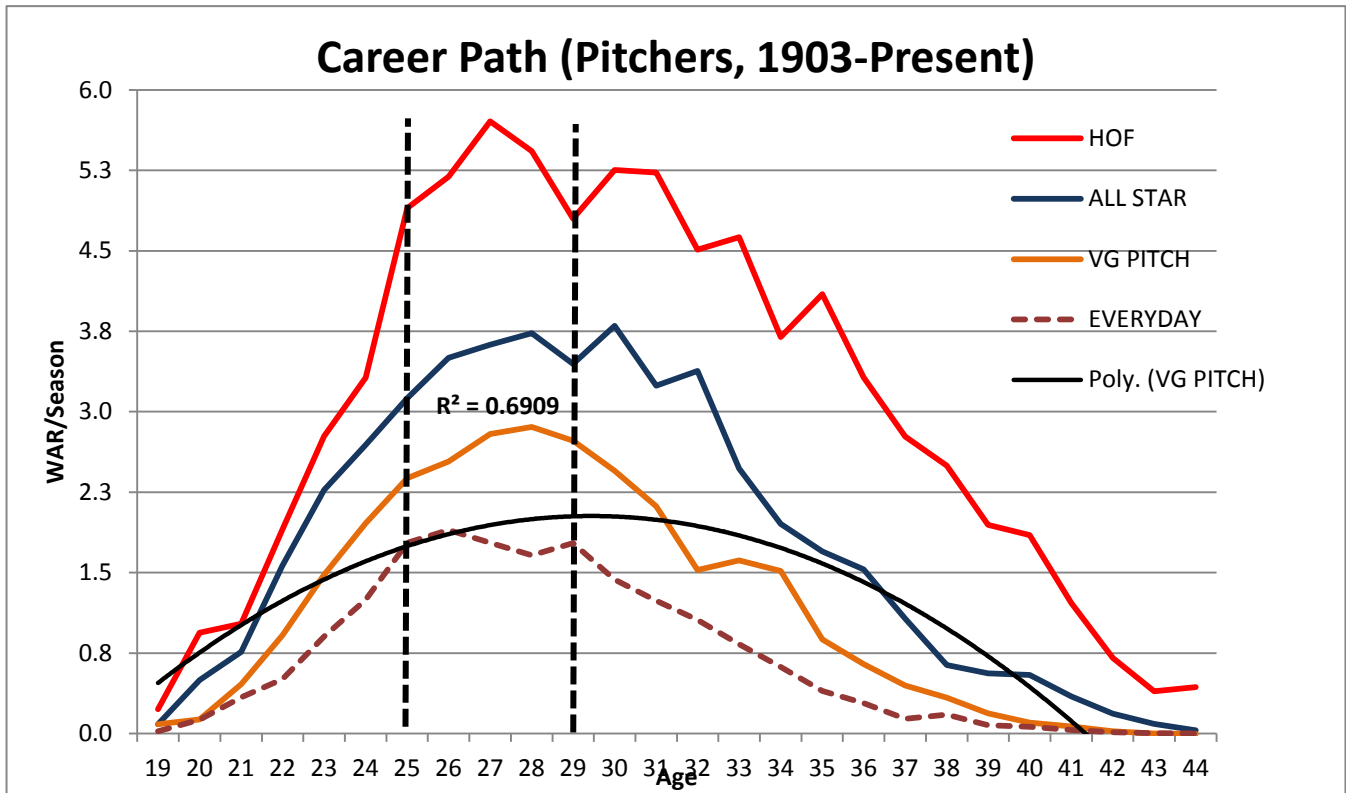
Some adjustments were made to yield results (run exponential/log fits). Namely, players with either negative or zero WAR (age 22) were adjusted to .01 WAR. The linear fit was not substantially altered – the resulting ANOVA above, coefficients, standard errors, did not alter enough to be relevant to include. But the changes to totals reflect too the maturation of prospects:

Age Level	25	22
Modified	195	654
Total Obs.	1205	1205
% to .01WAR	16.2%	54.3%

As these productive players reached 25, only one in six, needed this adjustment, versus over half the population by 22 years of age.

In the above regression, 25 years of age was a more valuable predictor (3.00 versus 2.4) with less error rate (.23 versus 2.89) than one's 22 year level. This reflects the greater variation in progress. Again, a maturation cycle in a prospective star or productive big leaguer likely turns on what a player produces WAR-wise at 25 years old. And this tendency should be logically tied back to initial signing and moving through the minor leagues. Even going back to the outset of the big leagues, the pattern is there, for batters.

Pitchers are not quite the same beast. A similar graph shows a different story regarding peak value and longevity of a career.



The jagged nature could be tied to various factors:

- 1) Missed Seasons: War service for HOF pitchers (Dazzy Vance, Bob Feller)
- 2) Tommy John surgeries (Chris Carpenter, A.J. Burnett et. al.)
- 3) Regular and odd injuries leading to stints on the DL; shortened careers
- 4) Old-fashioned bad performances during a season
- 5) Starting out in a different roles (reliever/spot starting)

Pitchers results were much more variable, year to year. Career years before a bust, or a bad year happened in the 24-32 year range, but a recovery to better form could happen. The *22 and 25 year age theory* did not correlate well to pitchers' future results above 10% (only 3% for 25 years of age.) Why?

A broad theory: pitching is not like hitting, for one. Learning how to pitch takes much longer, even amongst the elite since 1903. Only 51 pitchers rated above the 58WAR+ level (Chuck Finley, the last in that group). Notice too that the All Star and HOF pitches are barely differentiated at 22-24 years old. That is not the case for batters. A distinct difference exists by that time frame between the elite and the all-star and very good hitters. The gap for pitchers: not so clear.

Pitchers have much more to learn – about their crafts- to get out their opponents. Pitch types, rubber point, arm slot, windup mechanics, follow

through, pitching in the stretch, left versus right-handed hitters, defense, physical training, and overall arm health, are the short card. Each one of those has specific nuisances to a young pitcher without a good teacher. Focus on just three pitches, or have a fourth? Improve breaking stuff or focus on fastballs types – sinking, four-seamer, or a splitter? What is one's rubber point, to be effective, and do you change hitter to hitter, giving away strategy? Consistent arm slot – comfortable to repeat – and how that affects one's pitches is weighed. Training, whether with or without running, still takes throwing to gain arm strength via long tosses over 150 to 200 feet, and so on the particulars go.

Moreover, for most of the game's history, significant ground rule changes have benefited hitters – mound height, distance thrown, restrictions on ball manipulation, counts for strikeouts and balls, plate size, strike zones adjustments – in attempts to equalize the growth of pitcher's dominance. So the adjustments to make came primarily from the pitcher's side. The batter takes his cuts regardless – repetitively training of a motion to a singular perfection – but a pitcher has to figure himself out as well as a hitter's weaknesses.

So, pitchers, regress as much as they progress even as their arms mature – better velocity – up to 25 years old. Then, they likely hold that peak plateau until 28 or 29, and the gas thereafter gradually goes, aside from the Nolan Ryans in the elite category. The best will learn how to command better secondary pitches much later, generally, than their fastballs. (Again, Ryan got his curve working later on.) And once they get that 3rd offering, or have supreme command of two pitches, dominance can follow. Above it seems 28-29 provides the high water mark and the regression in one's stuff (velocity issues or endurance) changes results going into their thirties.

But once 30, they must be more than just great with their gas. As one's velocity shortens up their competitive advantage, the best work with less room for error in the game. They adapt off their knowledge of hitters and work on location, location, location, of all pitches, or add wrinkles to their games. Bartolo Colon, recently of an aged vintage, lives off a slightly above average fastball that he throws 80%+ of the time. He once was a gas pumper well above 95MPH, but now does less with power, more with guile and spot location of a sinker. He falls into the All-star category as such veteran pitchers have prolonged value (at premium dollars paid) because they adapted their games as such.

They apply experience in how to pitch out of trouble when their best remaining stuff is not present too. But that's a process game to game. Some guys are always behind the curve mentally, and that is likely the distinct separator between greats, and the merely good, and determines career length.

At 25, something must click on for the HOF set. The All Star-level (or high #2 starters) slide to a lower productivity level – maintain this until 32 – thereafter a fall off. But a HOF pitcher can even produce considerably past 35-37 years of age. Indicative too of the different natures of every day play versus starting one in four or five games as pitchers do. Pitchers' bodies gain less wear and tear, and if their arm holds up to that strain, pitching to 41-42 is not out of the question for the top two tiers. Hitters, by then, have only DH to save them, in

just one league, as daily fielding is a younger man's game to excel at with quickness.

Summarizing the Fan Model, So Far

- High correlations to baseball events are one way to spot 'good' outliers
- Run scoring: *OBP and SLG matter most*; but other models can predict and have predicted runs scored (wOBA- Linear Weights)
- Run stoppage ties to *controllable and uncontrolled events* for pitchers – FIP/DICE Era predictions
- A *low BABIP* can significantly help a team perform above average on wins through runs allowed metric (but regression to the mean is bound to catch up)
- Defense is the next *Big Data* area to leverage (unexplored in this section)

- Branch Rickey, Jim McLaughlin, and Johnny Sain, among others, were innovators in the sport
- Drafting talent is *much more bust than boom*; talent evaluation versus risk of high reward high school to surer returns on college prospects
- Top *Baseball America* prospects are not destined for greatness; odds are against them producing much above a *bench level*
- *Farm Systems* are rated by Baseball America based off their top 100 rankings
- Talent is *exponential* even as you reach the MLB level
- Prospect value does tend to help teams succeed in getting to playoffs recently
- *Age Curve* factors on evaluation both at a prospects levels and MLB players
- *Age 25* year is important for batters to assess their overall contributions
- Pitchers are a more *variable commodity* from their drafting to retirement age

Sabermetricians have studied countless slices of data to define:

- Who and what is going on in baseball game or season?
- Who is contributing more to wins?
- Exactly why do they contribute that much?
- How does that factor in evaluation of talent?
- And what advantage is there to be gleaned from that/those insights?
 - ✓ For drafting?
 - ✓ International signings?
 - ✓ Extensions and salary obligations?
 - ✓ Team building, the core players teams add

The next section will be heavy on financial valuation of prospects and the idea of "excess value." How can one take historical data, prospect rankings and insights, risk and volatility factors, and turn that into a dollar or value amount in a simplified manner, if that is possible. Ranking the teams weighs winning, salaries, valuation of prospect success, risk ratio, and win residuals all together.

Financial Valuation: Risk Inherent to Top Prospects

Prospects fail. At much higher rates than discussed by many fan on forums tied to major league teams. This is to be expected, as, of course, these are fans' opinions and hopes. Good intentions meet the obsession. Even well-written blogs and books with good analysis tend to promote towards the best case scenarios far more than any downside of any top-rated prospects. For these lucid writers (interested in retaining readers), it is an easier tactic to sell hope for the team, tied to yearly farm system rankings and rating bureaus from *Baseball Prospectus* to *Scouting Book*, than to focus on baseball downside.

Internally, all teams have their methods for evaluating prospects, success rates, and financial valuing of "the muscle" they base future moves on. Whether pure scouting, modeling from past data, minor league performance, or a combination of them all, teams are making these assessments just like fans, but with more on the line. At least that would be a logical byproduct of instituting data analytics and determining how to best design a team to win on the field and in the revenue stream game. The ability to see risks and rewards with a player's projected floor and ceiling determine valuation for the club once the numbers fall out and field reports are emailed. Someone then must make a decision – the *HIPPO* – highest paid person's opinion not playing the game of baseball.

Top evaluators, such as Tampa Bay GM Andrew Friedman, whose farm typically rated high, and with more winning than market size would predict, stated prospects are, "really overvalued," and, "the attrition rate and the hit rate isn't factored in nearly enough or appreciated enough (Kepner 2014)." One noticed his attention to both "attrition" (the downside 'bust' risk) and "overvalued" (financial worth tied to said prospects). His calculus ties in variables only a Harvard MBA or nerdy MIT math geek could get excited about. But they matter in a game of millions of fans and billions of dollars.

It is these key factors that get missed in rating prospects for trades by fans, and plausibly, GMs alike. If, for example, I trade Team A, pitcher X – whose value on the field is Y – then how many prospects do I need back from Team A to assure $Y(1+ROI\%)$ for my player's production? Not factoring in a discount rate (how long it takes for those prospect(s) to reach the MLB) that also has to be considered. As often, the best results are had long after the player departed.

Both opposing GM and fan can say, "but you are not going to win with him this year, so I should not have to pay such a premium." Well, then you do not get the player you want, and Team B, who is willing, obtains his services at that premium.

In such trades, financial incentives or relief aside from just a production move are factored. Personnel decisions based off a player's psychological issues or inability to adapt to management's expectations play their part. A better player that plays the same role/position makes trading excess talent for areas in deficits a very popular strategy, unless, an injury, ensues, thereafter. Then the fans howl about the lack of anticipation of unforeseen/foreseeable events. All again are tied to the risk factors weighed out by GMs to various degrees.

But exactly how much is a MLB player worth in his pre-free agency years? What can one expect from a top 100 prospect? Top 15? Are there ways to value them correctly? Can one easily reflect this? That is the nature of this section.

In the prior section on drafting and prospect rankings it was clear that talent is exponential, bust and bench players litter the field, and one can be successful with a load of prospects that pan from either drafting or international signings.

A quick fact on the 1990-2006 Baseball America Top 100:

- 15% of pitching prospects never make it the MLB. A few to note:

B.J. Wallace	Donnie Bridges	Tyrone Hill
Bobby Bradley	Kiki Jones	Geoff Goetz
Brien Taylor	Ryan Anderson	Jeff Allison

Simulating Players' Excess Value: WAR Costs and Production

The determination of what a player's worth is likely linked to a player's first two seasons in the majors. In that window, while cheap, a front office must evaluate the peak value of the player – is he a sure fire HOF talent (Mays, Trout) or just a utility player that can be replaced through one's minors or the 'free market' readily. Popularity and likeability do not factor that much into this cold hearted assessment – it is all about dollars to pay out and projected statistics amassed by the player. Exceptions occur here; as managers have their favorites.

Victor Wang in [The Bright Side of Losing Santana](#) (2008) and Michael Valancius in [A Detailed Look at Prospect Values](#) (2012) created good frameworks to study a player's *excess value* and how that relates to prospects. Each work at this problem from various angles that informed, but is not duplicated here.

An @RISK (Palisades) simulation was done. Several factors were varied (through distribution – normal, pert) for input variables: arbitration values, \$Cost/WAR, discount rate, WAR produced by levels of player (HOF, All Star, Bench) over the 6 seasons of control a team has. Arbitration was set at 20, 40, and 60% using a normal distribution placed on each variable. The \$Cost/WAR mean was \$6.1M, distributed normally with a 90% interval of \$5.5 and \$6.6 million. The discount rate is at 8.5% using a pert distribution. WAR production by year was as follows for Hitters and Pitchers:

Player Production: Hitter

<u>Year</u>	<u>HOF</u>	<u>ALL STAR</u>	<u>VG PLAY</u>	<u>EVERYDAY</u>	<u>PRODUCTIVE</u>	<u>Bench</u>	<u>Bust</u>
0	2.5	2	1.5	0.75	0.25	0.25	0.1
1	3	2.5	2	1.5	0.5	0.5	0.15
2	4	3.5	2.5	1.75	1	0.75	
3	4.5	4	2.75	2	1	0.75	
4	5.5	4.5	3.25	2	1.25	0.75	
5	5.8	4.6	3.4	2.1	1.5	0	
Total WAR	25.3	21.1	15.4	10.1	5.5	3	0.3

Player Production: Pitcher

Year	HOF	ALL STAR	VG PLAY	EVERYDAY	PRODUCTIVE	Bench	Bust
0	2	1.75	1	0.75	0.25	0.25	0.1
1	2.5	2	1.5	1.25	0.75	0.55	0.15
2	3.5	2.5	1.75	1.25	0.75	0.75	
3	4.5	3.25	2.5	1.5	1.25	0.75	
4	5.5	3.5	2.5	1.5	1.25	0.5	
5	5.8	3.8	2.85	1.85	1.25	0	
Total WAR	23.8	16.8	12.1	8.1	5.5	2.8	0.25

The total WAR was simulated with a normal distribution and deviations that made sense by the level produced. This effected only the final year's production as that was tied to prior production (subtracted out). This was a compromise - to reduce the number of variables and to simulate a variable "walk year."

These total baseline WAR values were determined by using historical data since 1900 that created the age curves seen in the above section. Taking the first six seasons of each player's career, one rationally increased player's performance up to their peak levels as closed to the average as possible with rational compromises that made sense.

Given just these raw (not discounted) WAR rates, one can conclude why teams are "extending" their most talented guys. The capturing of two (or more seasons) after these initial six years, at a team friendly rate, assures that over 50% of a player's value is seen in one uniform: the team that put him in the big leagues.

The \$100 Million Dollar Man?

HOF/All-Star players are a rare breed. About 5% in the top 100 rankings met that level. Their value as an asset greatly influences the actual results of a ball club, both the wins and the revenues generated – as those link – from previous exploration. But the *excess value* of these assets could vary. The following table reflects the results of the simulation for hitters in 5,000 trials.

@RISK Simulation Results for Hitters

In (\$M)	HOF	All Star	VG Play	Everyday	Product	Bench
Expect Val.	65.3	42.6	30.6	20.2	14.3	5.9
Min	5.1	-5.2	2.9	-8.1	-21.1	-23.9
Max	140.8	96.7	62.9	47.6	43.6	34.0
St. Dev.	17.47	13.4	7.8	7.5	7.5	7.4
20%	50.4	31.4	23.9	13.7	7.9	-.34
80%	80.0	53.8	37.0	26.4	20.5	12.1

The expected value is just the average in millions for each type of player. The *excess value* of players in All Star/HOF level can be rightly seen as between \$31-80M, with a narrower range of \$42-65M if we reflect the averages. Busts are not shown because the costs, particularly in initial acquisition, drafting or

international signings, would outweigh the first two seasons of salary and their player contributions. (Busts were no longer playing after season two anyways.) Meanwhile, a few categories produced a negative value (guy had a really bad last season – and costed more than he is worth) – at *black swan* rates.

The higher variations shown are due to a higher deviation introduced to this model for the best players. A HOF/All-star player could overachieve in their walk year, or have a setback along the way, a bad year. To model this, the model value was tweaked a bit. Some would argue the HOF and All-stars vary less, but this wrinkle only affected the final year of performance, and pushes up the potential excess value seen at the *Max levels*. In short, a team could get just a peak age/MVP year in that 'walk year.' Not often, but 1-2% to get to \$100,000,000 excess value guy.

There is a 20% probability of a HOF player being worth \$80,000,000 to a ballclub in *excess value* – or roughly 13 wins during his stay with the team. An all-star at his average value is 7 wins to the good. A very good player generates about 5 wins. Everyday, productive and bench are 3, 2, and 1 win over their 6 seasons with a team. Remember: this is value above their open market costs.

Hitters Costs, WAR and Excess Value

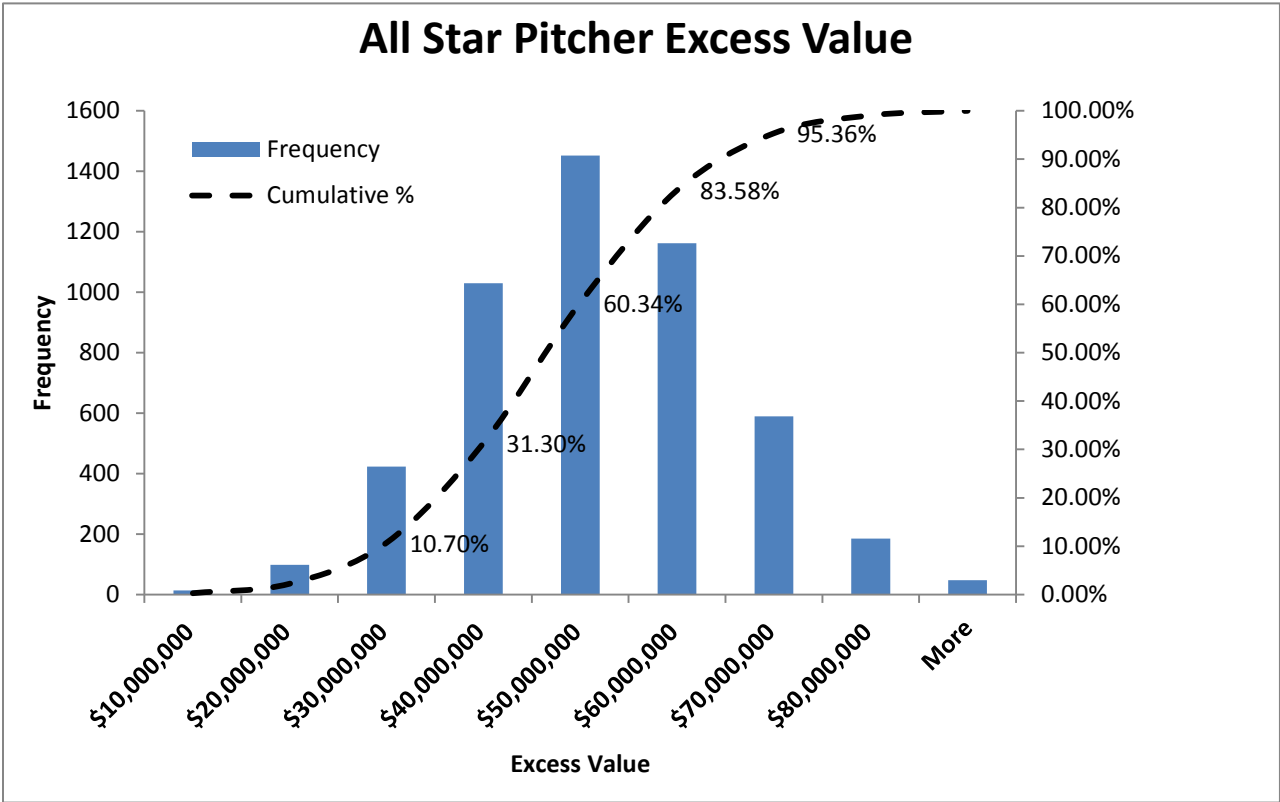
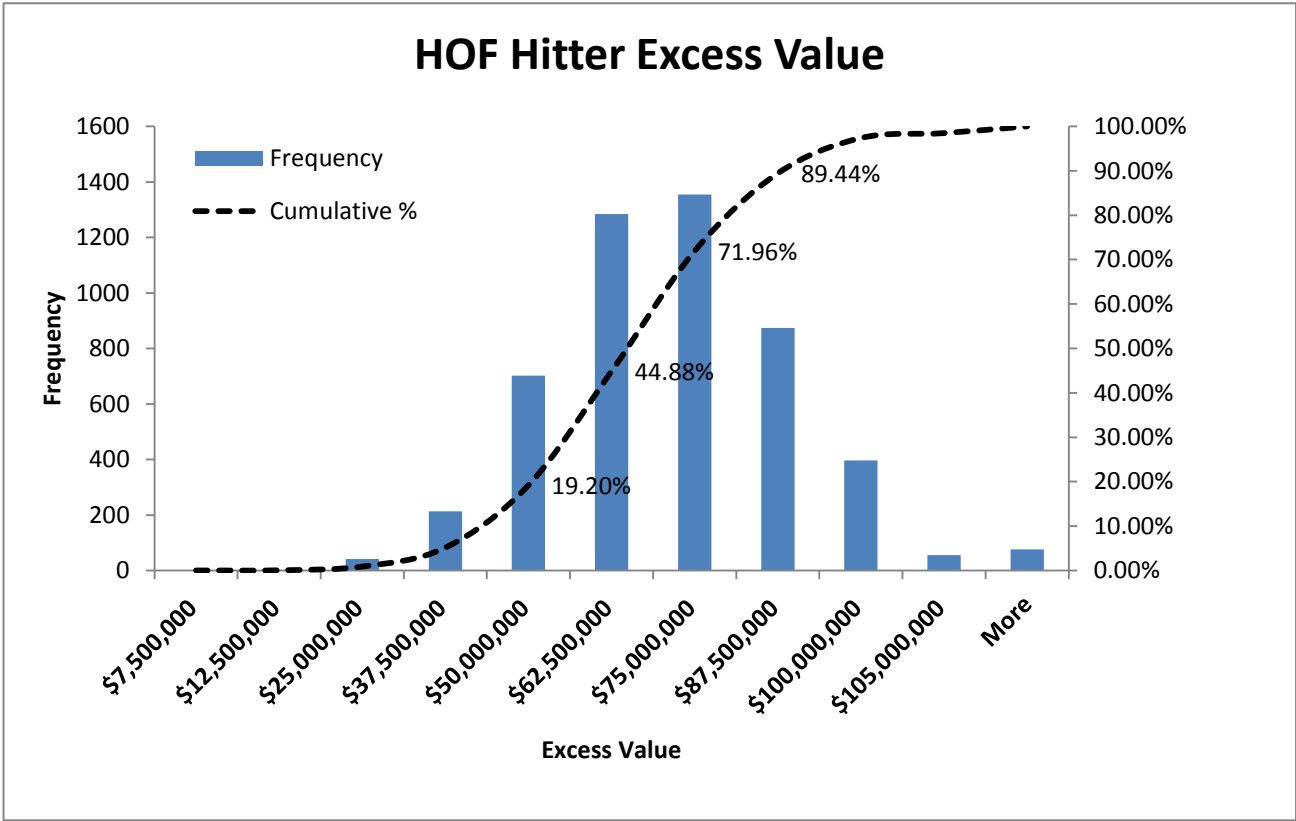
Year	HOF	ALL STAR	VG PLAY	EVERYDAY	PRODUCTIVE	Bench
0	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
1	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
2	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000
3	\$4,880,000	\$4,270,000	\$3,050,000	\$2,135,000	\$1,220,000	\$915,000
4	\$10,980,000	\$9,760,000	\$6,710,000	\$4,880,000	\$2,440,000	\$1,830,000
5	\$20,130,000	\$16,470,000	\$11,895,000	\$7,320,000	\$4,575,000	\$2,745,000
Total Costs	\$23,829,864	\$20,370,233	\$14,796,383	\$10,183,541	\$6,339,506	\$4,609,691
<i>WAR Value</i>	\$91,488,026	\$64,579,783	\$46,512,820	\$31,136,681	\$21,142,191	\$10,763,297
<i>Excess Value</i>	\$67,658,162	\$44,209,550	\$31,716,437	\$20,953,140	\$14,802,685	\$6,153,606

Note: A discount rate of 8% is reflected here.

@RISK Simulation Results for Pitchers

In (\$M)	HOF	All Star	VG Play	Everyday	Product	Bench
Expect Val.	65.7	46.6	33.1	22.4	14.1	6.5
Min	.7	-2.3	5.9	-7.0	-13.4	-22.0
Max	148.7	96.5	64.8	55.1	43.8	33.6
St. Dev.	17.7	13.5	7.8	7.6	7.5	7.4
20%	50.7	35.3	26.6	16.0	7.7	.22
80%	80.1	57.9	39.7	28.8	20.4	12.4

Both very good and everyday pitchers are slightly more valuable based on the parameters entered and WAR levels modeled in year 3-4. This ties to the arbitration basis calculated for those seasons. Since they are below hitters in their WAR rates in Years 3-4, Years 4-5 costed less by the model.



There is over a 55% chance (1-44.8%) of a batter accumulating \$62.5M in excess value. And a 10% chance of that value being over \$87.5M during his first 6 seasons. Again, like hitters, the HOF pitcher can be a \$100 million dollar man if

they overperform, racking up MVP numbers, to join their brethren in the Hall of Fame. An All-Star pitcher above has 40% chance of being a \$50M excess asset. (Negative rates: are not 'actual' millions lost, but negative WAR*6.1M.)

Comparison to Valancius Study

Michael Valancius study was done in 2012, just two years ago. His values for players at the apex of the prospect chart should closely match the values just given above – though a different age methodology on prospects was employed in his study. As he stated:

“The first step is to divide the prospects into the ranges based on their ranking and to give them an average WAR value that corresponds with their ranking. Once that is completed, the prospects are given regressed weights to account for ARL and their position. The weights are regressed to help account for both variance and ranking. Variance may be partially to blame for the struggle of LHPs. Lower rankings may also have played its part. By using regressed weights, these variables are minimized.

After applying the regressed weights, the net WAR values are then transformed into dollar figures. Here is the formula: $WAR * 5 * 6 - 1.2 * WAR * 5 - 1.2$. *Explanation:* The average WAR is multiplied by five to convert to dollars and then six to find the total WAR accumulated by the player over his first full six years. Then, the player's costs (120% of his performance in dollars using the 20%, 40%, 60% arbitration figures and 1.2 million for pre-arbitration) are subtracted. With this formula, the player's net dollar value can be attained (Valancius 2012).”

Top BA Prospects 1-5				Top BA Prospects 6-15			
	Young	Average	Old		Young	Average	Old
RHP	\$53.76	\$50.40	\$44.88	RHP	\$43.50	\$40.70	\$36.28
LHP	\$48.24	\$44.64	\$39.12	LHP	\$38.84	\$36.05	\$31.62
C	\$63.60	\$60.24	\$54.72	C	\$51.41	\$48.62	\$44.20
1B	\$69.60	\$66.20	\$60.75	1B	\$56.30	\$53.51	\$49.08
2B	\$54.73	\$51.28	\$45.84	2B	\$44.20	\$41.40	\$36.98
3B	\$66.77	\$63.33	\$57.88	3B	\$53.97	\$51.18	\$46.76
SS	\$65.05	\$61.61	\$56.16	SS	\$52.58	\$49.78	\$45.36
OF	\$63.90	\$60.46	\$55.01	OF	\$51.65	\$48.85	\$44.43

Source: (Valancius 2012)

If we look at the range of expected values (from \$36.28M for an old RHP to \$69.6M for a Young 1B), we have a ticket to the ballpark and are seated, at least, near the dugout, lower level. His \$Cost/WAR is at \$5M in comparison to \$6.1M. Though with the distribution inserted through this model and the same dollar-cost comparative structure in arbitration years, this should not factor much in the differences. The WAR basis per year likely introduces the most variation to the mix between these two studies.

Valancius’s breakdown by position and rankings are the next step to the prospect equation. The results below do reflect a much lower overall valuation

methodology that speaks to the overvaluation of certain prospects that GM Andrew Friedman mentioned above. The *expected excess value* is not the *real value* of any prospect once you factor in *the risk profile* of the prospect actually succeeding. The real *expected value* and variation has to account for the busts – the zero value player with acquisition costs – that teams must churn through to get to the rare top talents (an all-star) that maybe traded during a playoff run.

Risk and Volatility Profile on Top 100 Prospects

Michael Lewis in his seminal baseball work spoke of “market inefficiency” a lot. He knew from personal experience how such ideas worked. About twenty years prior, he landed on Wall Street at Salomon Brothers after his London School of Economics “player development” program. He had made it to the bigs of investment banking, hoping to become an all-star, with his Money Above Replacement (MAR) topping the many millions threshold. So his idea-turned-best seller came directly from and through personal experiences had on *The Street*.

Baseball too is a market; or rather, many markets. The MLB is like the Dow Jones (DJIA); the BA Top 100 is the NASDAQ; the minors are the Russell 2000; and the international players are on the “unlisted” exchange at their outset. They interact, move often together, but each is its own universe too, requiring both statistics and scouting to gauge where *the market* will go next. Each too has a rate of return on the investment made – whether the cold hard cash of revenues or the sheer delight gained in a baseball being crushed or blazed by an all-star for strike three.

These markets, of course, are made up of individual stocks as baseball is made up of individual players. Each has uniqueness – their quirks of being – even as market makers (scouts, GMs, et. al.) compare them to others in the same segment and make their notes, values vary too. They evaluate floors and ceilings, the riskiness of a prospect, the average return expected is all considered through what they have as their methodology. But through comparisons in these segments, and across the markets, can market makers tell if they have a buy, sell, or hold proposition, most generally?

Two ways to measure risk and return volatility is to calculate a Coefficient of Variation and a Beta. The following is similar, but not exactly how Wall Street does it.

Risk – Coefficient of Variation on Prospects (CVP): St. Dev of WAR/Avg. WAR

So if the St. Dev is 15.6 and the WAR Avg is 9.9, then the CVP is 1.58 or 1.58 times riskier than a deviation at 9.9. This measures how two investments can present an average return, but one is decidedly more riskier based on outcomes that move deviation upwards. Or if two investments differ on their average returns, but they can be equally risky, based on varying deviations.

Applied to baseball, it factors a projection of what a prospect is – floor to ceiling. It can compare two positions or prospects, as one could evaluate the risk

chances between the two – by this measure, based off position history of success. And it applies particularly well as will see by ranking levels.

Return Volatility – Prospect Player Beta (PPB). From 1990-2006, 977 prospects generated 9,676 WAR, averaging 9.9WAR per prospect. This market universe fairly represents the usual outcomes of a MLB player. Those who were prospects in the last year, 2006, have seen seven full seasons since they were the hottest commodity on the *Baseball America* exchange. By late 2013, most have reach either reached a productive outcome, or have washed out. As discussed above, this works out for determining a “market universe” to study.

For the sample population standard deviation was 15.6. The distribution again is not normal. The beta of an entire market is 1.00 and is calculated by:

PPB*: ((Avg. WAR(prospect type) – Avg. WAR (All Prospects)/ Avg. WAR (All Prospects))*((St. Dev.prospect type)/St. Dev (All Prospects)))

*For the entire market the value of 1 was added to gain this result.

The *Baseball America* Top 100 Player Market (1990-2006)

Prospects (1990-2006)	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	285	1833	6.4	12.3	1.91	-0.28
Elite (1-15)	191	3934	20.6	20.8	1.01	1.44
High (16-40)	261	2573	9.9	14.9	1.51	0.00
Low (71-100)	240	1336	5.6	10.3	1.85	-0.29
Prospects Profile	977	9676	9.9	15.6	1.58	1.00

CVP meanings:

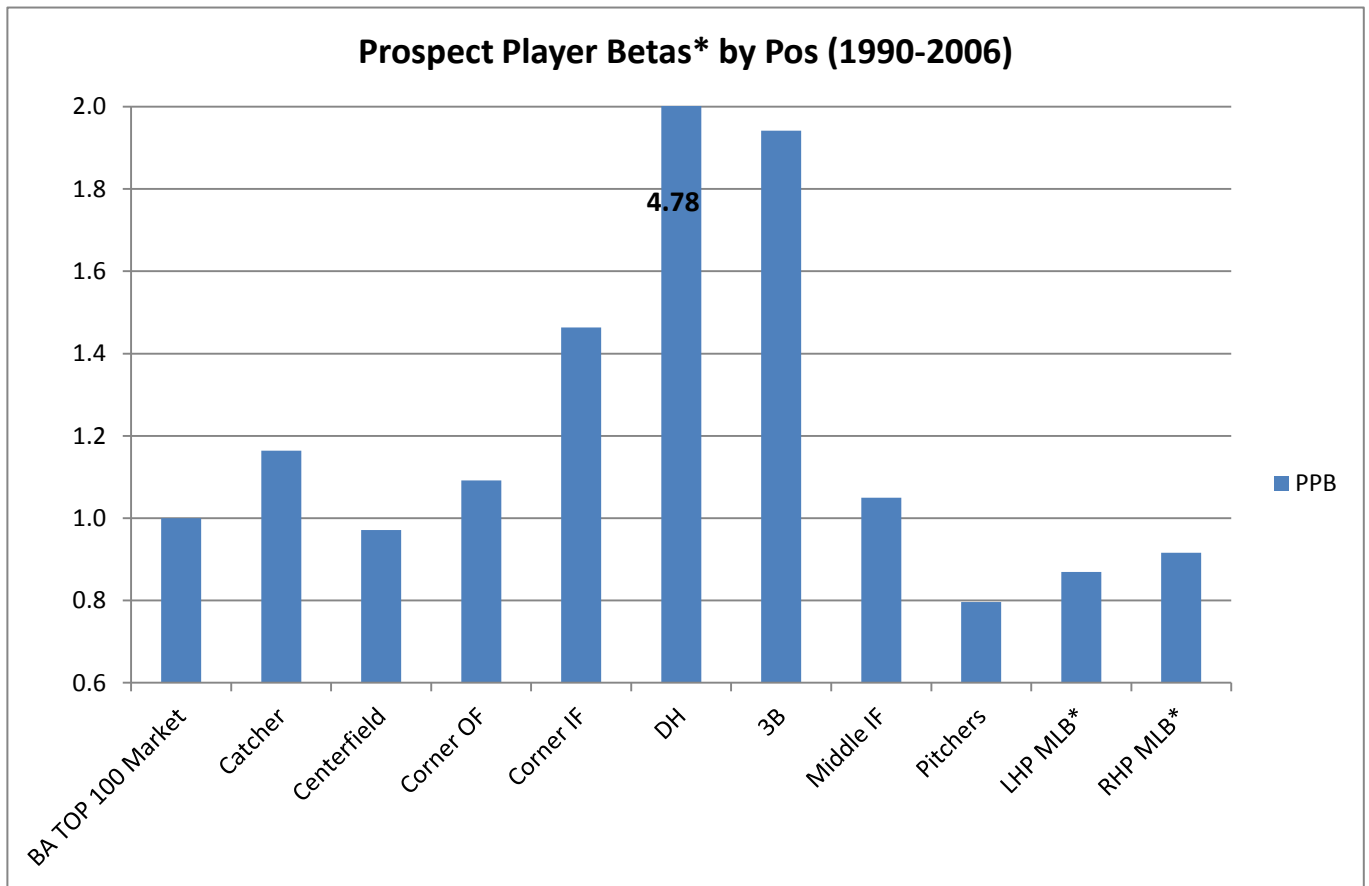
As mentioned, 1.58 was the CVP average. Values below this are less risky in comparison to the overall market. So elite prospects (1.01) are, in fact, less riskier given their deviation and averages. While average and low prospects are at an increased risk per this market. High prospects are slightly better than the norm. This makes sense overall, and follows prior analyses.

PPB meanings:

- 1) Beta greater than 1 – more volatile, greater returns in relation to the market
- 2) Beta less than 1 – less volatile than the market, stable to the market
- 3) Beta less than 0 – the prospect return runs negative to the market (avg WAR)
- 4) Beta equal to 0 or 1 – correlates exactly to the market by deviation measures

Elite prospects provide more return than the entire market; that higher ceiling of providing more WAR, but less overall risk to this market. High prospects match the market – exactly* – but would not correlate on a prospect-to-prospect basis. Average prospects and low Prospects are “losers” in regard to valuation to the entire prospect market. They may be actually “misvalued” – market up, they go down. Market at the top is down (busting more), and they succeed more.

*(Exactly is a *relative* term as with rounding it is -.004. KISS was employed.)



Centerfield and pitchers, in general, provide the best PPB for the market if one is looking for an assured market return (avg WAR), but less volatile in gaining a superstar player (a PPB over one). Those PPBs slightly over one are slightly better shots to land that star, while still getting the market return of 9.9 WAR on average. But you see the big time differences at 1B/DH/and 3B. In general, DH and 3B would be your stocks with great chances of windfalls, or busts, if by position alone, like a newly issued tech stock.

In this dataset, you have the likes of Alex Rodriguez, Chipper Jones, Albert Pujols (corner IF and DH too), Scott Rolen, Jim Thome, Adrian Beltre, Miguel Cabrera in that top tier; Hank Blalock represents an average MLB WAR rate; and Wilson Betemit, Mark Teahen, Sean Burroughs, and Andy Marte, and Drew Henson are the once promising guys that underperformed the average by a wide margin. Remember, there still is a market risk in any player investment. (To diversify holdings, and mitigate the risk factor, you have to get multiple elite prospects at the same position on the field. An elite prospect holding of one does not assure success. Whereas, 6 "low" prospects would diversify, but have lower than expected "return rates.")

DH, as a position, truly means a player has two well scouted tools: he hits for power and average. David Ortiz, the all-time leader at DH in numerous categories, may be one of bests example of a guy that found a home in the American League at this position. (Edgar Martinez signed by the Mariners, like

Ortiz, as an amateur free agent in 1982 was also a leader at the position, moving off 3B. What are the odds Mariners sign them both?)

According to the Fangraphs' defensive metrics, these DH hitters are all bad at defense, but really good at offense. (Martinez was an average catcher).

Top Designated Hitters (Fangraphs, 2014)

Name	PA	HR	BB%	K%	ISO	BABIP	wOBA	Def	WAR
Frank Thomas	10075	521	16.50%	13.90%	0.254	0.304	0.416	-267.4	72.4
Jim Thome	10313	612	16.90%	24.70%	0.278	0.322	0.406	-199.9	67.7
Paul Molitor	12167	234	9.00%	10.20%	0.142	0.326	0.361	-114.4	67.7
Edgar Martinez	8678	309	14.80%	13.90%	0.204	0.335	0.405	-133.5	65.6
Jim Rice	9058	382	7.40%	15.70%	0.204	0.318	0.375	-106.3	50.8
Jason Giambi	8890	440	15.30%	17.60%	0.24	0.294	0.394	-223.5	48.9
Brian Downing	9309	275	12.90%	12.10%	0.158	0.28	0.36	-100.3	48.4
Reggie Jackson	8262	406	12.20%	22.00%	0.225	0.297	0.373	-179.1	45.8
Jose Canseco	8129	462	11.10%	23.90%	0.249	0.299	0.375	-165.4	42.1
David Ortiz	8602	450	13.20%	17.80%	0.261	0.303	0.391	-212.2	41.6
Ken Singleton	7374	214	14.90%	14.00%	0.157	0.311	0.375	-173.6	39
Harold Baines	11092	384	9.60%	13.00%	0.175	0.303	0.358	-235.7	38.5
Chili Davis	9997	350	11.90%	17.00%	0.177	0.302	0.354	-172	37.9
Victor Martinez	5820	177	9.30%	10.60%	0.167	0.314	0.362	-3.9	31.1
Greg Luzinski	6777	286	11.60%	19.80%	0.206	0.308	0.375	-193.5	28.8

Jason Giambi, an Oakland A's draftee, did not rate a Top 100 prospect ever. (Others in this study are highlighted in the table.) Minor league prospect expert John Sickels on Giambi: "Scouts were certain he would hit for average and get on base, but there were questions about how much home run power he would develop. Based on his college record, draft status, and early pro performance, he would have been a Grade B prospect heading in to '93 (Sickels 2005)."

The Risk (CVP) was not discuss in much detail above. The following tables will provide ways to look at the risk factor across positions, and better assess both risk and return volatily at each position. Remember: such markets evolve over time. This study was just a snapshot of prior data – much as the CAPM financial markets model is based off a past tense records.

As we know, a dynamic picture exists in the baseball world and on Wall Street. As big data, scouting and statistical tools blend together, the expectation is rating talent will also improve too. Just as financial theories and risk departments are working towards a better capture of instant data to fuel their decisions better. Or, at least, that is this author's hope.

Catcher	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	20	152	7.6	10.0	1.31	-0.15
Elite (1-15)	6	164	27.3	25.8	0.94	2.91
High (16-40)	12	164	13.7	20.7	1.51	0.51
Low (71-100)	7	32	4.6	9.4	2.03	-0.32
Prospects Profile	45	513	11.4	17.0	1.49	1.16

Centerfield	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	16	84	5.3	10.0	1.90	-0.30
Elite (1-15)	12	188	15.6	14.4	0.92	0.53
High (16-40)	15	196	13.1	19.5	1.49	0.40
Low (71-100)	13	69	5.3	8.1	1.53	-0.24
Prospects Profile	56	537	9.6	14.2	1.48	0.97

Corner OF	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	34	313	9.2	16.2	1.75	-0.07
Elite (1-15)	45	868	19.3	18.5	0.96	1.12
High (16-40)	46	436	9.5	14.1	1.49	-0.04
Low (71-100)	37	132	3.6	8.7	2.45	-0.36
Prospects Profile	162	1749	10.8	15.9	1.47	1.09

Corner IF	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	10	83	8.3	9.2	1.12	-0.10
Elite (1-15)	17	412	24.2	18.5	0.76	1.71
High (16-40)	24	371	15.5	21.4	1.39	0.77
Low (71-100)	18	100	5.5	6.4	1.16	-0.18
Prospects Profile	69	965	14.0	17.5	1.25	1.46

Designated Hitter	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	4	176	44.0	40.3	0.92	8.87
Elite (1-15)	4	140	35.0	31.0	0.88	5.02
High (16-40)	3	61	20.4	9.7	0.47	0.66
Low (71-100)	3	49	16.2	21.5	1.33	0.87
Prospects Profile	14	426	30.4	28.5	0.94	4.78

As you can see, the prospect count (stocks) should factor into conclusions significantly. The breakdown by position was based of original drafting/signings and MLB history of the player. Even at that, errors and positionally flexible players would distort this data more. Over 900 plus prospects, and finite time, means good was a better alternative to perfect. And perfect information is never achievable. Corner IF and OF are large datasets one feels comfortable basing decisions on. Whereas, DH and Catchers, have less data points, and thus more likelihood to make judgments that do not conform to strict statistical analysis.

Realize too, team to team, some are just better at turning out particular types of prospects – corner OF, or middle infielders, or top pitching – as methods of selection (scouting) and player development (coaching mechanisms) are at play. Much like Wall Street likely identifies companies led by competent executives versus fly-by-night companies with an actual good idea or innovation, but no likelihood to convert that idea into profits. Once baseball management techniques are included, the picture gets only murkier.

3B	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	10	75	7.5	9.3	1.24	-0.14
Elite (1-15)	16	587	36.7	34.4	0.94	5.95
High (16-40)	18	196	10.9	15.5	1.43	0.10
Low (71-100)	14	67	4.8	7.2	1.51	-0.24
Prospects Profile	58	925	16.0	24.1	1.51	1.94

Middle IF	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	33	171	5.2	7.9	1.54	-0.24
Elite (1-15)	23	440	19.1	19.1	1.00	1.14
High (16-40)	22	194	8.8	14.4	1.63	-0.10
Low (71-100)	28	300	10.7	15.3	1.43	0.08
Prospects Profile	106	1105	10.4	14.9	1.43	1.05

Pitchers (ALL)	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	158	778	4.9	10.1	2.05	-0.32
Elite (1-15)	68	1136	16.7	17.6	1.05	0.77
High (16-40)	121	953	7.9	12.1	1.54	-0.16
Low (71-100)	120	589	4.9	9.9	2.02	-0.32
Prospects Profile	467	3456	7.4	12.6	1.70	0.80

LHP (MAJORS)	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	39	313	8.0	14.3	1.79	-0.17
Elite (1-15)	11	194	17.6	17.0	0.96	0.85
High (16-40)	28	251	9.0	11.9	1.33	-0.07
Low (71-100)	29	132	4.6	7.1	1.56	-0.25
Prospects Profile	107	890	8.3	12.8	1.54	0.87

RHP (MAJORS)	Prospects	WAR total	Avg. WAR	StdDev (P) WAR	CVP	PPB
Average (41-70)	95	465	4.9	8.8	1.79	-0.28
Elite (1-15)	50	942	18.8	17.9	0.95	1.03
High (16-40)	82	702	8.6	12.7	1.48	-0.11
Low (71-100)	60	457	7.6	12.4	1.63	-0.18
Prospects Profile	287	2566	8.9	13.4	1.50	0.92

An @RISK simulation calculated values of prospects by position. Negative values ties to salary/negative WAR. No team loses \$40M to a prospect;10M yes.)

Prospects (1990-2006)	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$18.63	\$12.58	\$12.59	-\$40.12	\$32.12	\$73.78
Elite (1-15)	\$59.68	\$40.29	\$40.35	-\$27.86	\$74.71	\$132.38
High (16-40)	\$28.56	\$19.28	\$19.29	-\$36.08	\$43.18	\$81.84
Low (71-100)	\$16.13	\$10.89	\$10.90	-\$24.08	\$27.34	\$54.03
Prospects Profile	\$28.70	\$19.37	\$19.35	-\$38.29	\$44.30	\$75.91

Catcher	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$22.06	\$14.89	\$14.87	-\$18.99	\$31.19	\$59.48
Elite (1-15)	\$79.20	\$53.46	\$53.32	-\$40.36	\$95.68	\$172.65
High (16-40)	\$39.70	\$26.79	\$26.77	-\$58.25	\$60.09	\$130.04
Low (71-100)	\$13.41	\$9.05	\$9.03	-\$25.87	\$24.01	\$49.89
Prospects Profile	\$33.04	\$22.30	\$22.27	-\$35.54	\$49.63	\$87.20

Centerfield	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$15.23	\$10.28	\$10.30	-\$33.92	\$26.49	\$47.81
Elite (1-15)	\$45.30	\$30.58	\$30.56	-\$23.47	\$54.50	\$98.72
High (16-40)	\$37.92	\$25.60	\$25.66	-\$49.54	\$56.55	\$104.30
Low (71-100)	\$15.42	\$10.41	\$10.37	-\$19.08	\$23.58	\$38.05
Prospects Profile	\$27.80	\$18.76	\$18.76	-\$31.42	\$41.64	\$89.74

Corner OF	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$26.70	\$18.02	\$18.05	-\$52.63	\$43.83	\$82.44
Elite (1-15)	\$55.87	\$37.71	\$37.69	-\$39.56	\$68.70	\$123.10
High (16-40)	\$27.49	\$18.55	\$18.50	-\$43.64	\$41.35	\$76.33
Low (71-100)	\$10.30	\$6.95	\$6.94	-\$30.61	\$20.80	\$42.23
Prospects Profile	\$31.28	\$21.11	\$21.06	-\$39.24	\$46.59	\$81.03

Corner IF	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$23.99	\$16.19	\$16.15	-\$20.21	\$31.15	\$57.00
Elite (1-15)	\$70.22	\$47.40	\$47.38	-\$10.38	\$79.10	\$139.23
High (16-40)	\$44.78	\$30.23	\$30.17	-\$56.40	\$65.02	\$103.69
Low (71-100)	\$16.02	\$10.81	\$10.80	-\$16.02	\$21.37	\$36.98
Prospects Profile	\$40.53	\$27.36	\$27.36	-\$55.43	\$55.98	\$104.60

Designated Hitter	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$127.42	\$86.01	\$86.03	-\$48.72	\$155.55	\$290.66
Elite (1-15)	\$101.41	\$68.45	\$68.44	-\$70.09	\$119.97	\$215.38
High (16-40)	\$59.21	\$39.96	\$39.98	\$3.10	\$58.13	\$84.97
Low (71-100)	\$46.84	\$31.62	\$31.60	-\$50.40	\$66.95	\$119.93
Prospects Profile	\$88.10	\$59.47	\$59.46	-\$44.73	\$108.24	\$201.18

3B	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$21.73	\$14.67	\$14.67	-\$20.58	\$29.87	\$54.97
Elite (1-15)	\$106.34	\$71.78	\$71.77	-\$45.60	\$128.78	\$217.81
High (16-40)	\$31.55	\$21.30	\$21.32	-\$35.03	\$46.40	\$81.09
Low (71-100)	\$13.85	\$9.35	\$9.32	-\$21.47	\$21.11	\$42.73
Prospects Profile	\$46.22	\$31.20	\$31.21	-\$57.37	\$70.31	\$126.92

Middle IF	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$14.99	\$10.12	\$10.15	-\$21.20	\$23.29	\$43.21
Elite (1-15)	\$55.43	\$37.42	\$37.44	-\$26.08	\$69.95	\$114.71
High (16-40)	\$25.59	\$17.27	\$17.29	-\$38.43	\$40.41	\$83.23
Low (71-100)	\$30.99	\$20.92	\$20.89	-\$43.41	\$46.08	\$87.91
Prospects Profile	\$30.19	\$20.38	\$20.34	-\$35.29	\$44.33	\$86.58

Pitchers (ALL)	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$14.27	\$9.64	\$9.61	-\$28.88	\$25.68	\$50.27
Elite (1-15)	\$48.40	\$32.67	\$32.69	-\$27.73	\$61.12	\$102.84
High (16-40)	\$22.83	\$15.41	\$15.38	-\$31.45	\$35.49	\$72.00
Low (71-100)	\$14.21	\$9.59	\$9.58	-\$28.24	\$25.42	\$47.17
Prospects Profile	\$21.44	\$14.48	\$14.53	-\$39.02	\$35.28	\$66.85

LHP (MAJORS)	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$23.28	\$15.71	\$15.70	-\$35.44	\$38.50	\$72.73
Elite (1-15)	\$51.08	\$34.48	\$34.40	-\$23.29	\$62.13	\$107.49
High (16-40)	\$25.98	\$17.54	\$17.53	-\$25.02	\$36.74	\$66.71
Low (71-100)	\$13.19	\$8.90	\$8.89	-\$17.15	\$20.37	\$42.04
Prospects Profile	\$24.11	\$16.27	\$16.30	-\$34.22	\$37.21	\$73.46

RHP (MAJORS)	WAR Value(M)	Excess Val (M)	SIM Mean	Min (M)	95% (M)	Max (M)
Average (41-70)	\$14.19	\$9.58	\$9.57	-\$25.86	\$23.81	\$49.67
Elite (1-15)	\$54.58	\$36.84	\$36.80	-\$40.22	\$66.42	\$148.40
High (16-40)	\$24.82	\$16.75	\$16.75	-\$32.31	\$37.34	\$75.03
Low (71-100)	\$22.05	\$14.89	\$14.90	-\$28.78	\$34.82	\$64.72
Prospects Profile	\$25.91	\$17.49	\$17.45	-\$30.39	\$39.34	\$71.60

First, a few notes on how these were calculated (See: Appendix E):

- 1) WAR cost was again \$6.1M; normal distribution, \$350K deviation
- 2) % of WAR in 6 seasons: 47.5%, Pert (38-57%)
- 3) Cost of Player: 32.5% WAR; 4.7% deviation

4) Modified Deviation of WAR (not shown): $.475 * \text{St. Dev of WAR}$

Cost structure was essentially the same. The average cost across the spectrum of players HOF-Bench was 32.5% of WAR contribution, with a 4.7% deviation. Percentage of WAR earned in six seasons was determined by ratioing the progression of a players' career up to peak (at free agency), with the Pert distribution reflecting pessimistic and optimistic outcomes of WAR production.

Modification of WAR deviation was required to reduce the spread in relation in the time span measured. Shorter amount of time to produce, the less deviation from the baselines. Excess value was calculated on top of those variations to get the results above.

Pitchers are very plausibly undervalued, though not by much. Again, the DH/3B positions are helped by the healthy WAR values generated by those players in the Clinton era and juiced baseballs.

A simpler final chart with some logical adjustments is shown for the *average* excess values:

Excess Val (M)	Elite (1-15)	High (16-40)	Average (41-70)	Low (71-100)
Avg. Prospect	\$40.35	\$19.29	\$12.59	\$10.90
Catcher	\$53.32	\$26.77	\$14.87	\$9.03
Centerfield	\$30.56	\$25.66	\$10.30	\$10.37
Corner OF	\$37.69	\$18.50	\$18.05	\$6.94
1B/3B/DH*	\$59.12	27.284	\$15.41	\$10.06
Middle IF	\$37.44	\$17.29	\$10.15	\$20.89
RH Pitcher	\$36.80	\$16.75	\$9.57	\$14.90
LH Pitcher	\$34.40	\$17.53	\$15.70	\$8.89
<i>* Average Positions in first two columns; last columns, DH was dropped.</i>				

The Middle IF ranked in the average tier are undervalued as the Corner OFers are overvalued the average range. These are tied to outliers above that overperformed their BA ratings, like Utley above. But the ranges of average make sense again. Top tier talent averages on the low side at 30M- 59M at their peak. Adjustments and combining the 1B/3B/DH together still shows a healthy weighted average. Catchers, so few are rated highly (only 6 in 17 seasons here), that this reflects stastical bias just from the overachievers. Overall, the elite are rationally valued here across the spectrum. Once outside the top 40 guys, \$7-15M is a relativistic expected excess value on prospect valuation.

An elite prospect is worth four times as much in excess value of a lower tier prospect; but the risk game spreads if a team has those four prospects compared to one blue chip at the casino of chance. In some years, teams have prospect hoarded well to very successful outcomes.

Again a comparison to prior studies holds up well:

Top BA Prospects 41-75				Top BA Prospects 76-100			
	Young	Average	Old		Young	Average	Old
RHP	\$20.00	\$18.67	\$16.57	RHP	\$17.23	\$16.08	\$14.26
LHP	\$17.79	\$16.46	\$14.37	LHP	\$15.31	\$14.16	\$12.34
C	\$23.75	\$22.43	\$20.33	C	\$20.50	\$19.34	\$17.52
1B	\$26.07	\$24.74	\$22.65	1B	\$22.51	\$21.36	\$19.54
2B	\$20.33	\$19.00	\$16.91	2B	\$17.52	\$16.37	\$14.54
3B	\$24.96	\$23.64	\$21.54	3B	\$21.55	\$20.40	\$18.58
SS	\$24.30	\$22.98	\$20.88	SS	\$20.98	\$19.82	\$18.00
OF	\$23.86	\$22.54	\$20.44	OF	\$20.59	\$19.44	\$17.62

(Valancius 2012)

Valancius has much greater values on his prospects, in part, due to using a smoothing of variation: "Using individual rankings does not paint an accurate picture for finding values. For example, there is a steep drop from ranking #56 to ranking #57, which is more of a testimony of previous success than an accurate view for finding future values. A glance at the rankings by every fifth spot (1-5, 6-10, etc...) helps clear up the variance involved." This is a fair and logical technique used by him.

For finite comparisons:

C – average age and 41-75: \$22.43M versus 14.87M;

2B – average age and 41-75: \$19M versus 10.1M

1B – average age and 76-100: \$21.36M versus 10.06M

As noted, the adjustments above left out DH at the low end.

The actual values can fluctuation significantly – and again – prospects are not certainties. Risk measures by position, dependable projections of talent, and injury factors all add into the overall picture. A final prospect valuation could look something like this:

Excess Val (M)	Elite (1-15)	High (16-40)	Average (41-70)	Low (71-100)
<i>Avg. Prospect</i>	32-48M	15-25M	8-14M	3-15M
<i>Catcher</i>	45-62M	18-30M	6-15M	3-10M
<i>Centerfield</i>	25-40M	20-35M	8-16M	8-16M
<i>Corner OF</i>	32-48M	16-28M	10-20M	8-15M
<i>1B/3B/DH*</i>	45-70M	20-35M	10-20M	6-15M
<i>Middle IF</i>	32-52M	16-36M	8-24M	8-24M
<i>RH Pitcher</i>	30-65M	15-30M	9-20M	6-18M
<i>LH Pitcher</i>	30-60M	14-28M	10-18M	5-15M

But this too is just a compromise and one can logically question that lower prospects can never have a higher range than the average ones. It is why such discussions are ever intriguing and the measurement method are just a matter of who is looking at it, and why.

Salaries and Prospects: It Take Two to Make A Team Go Right

There is a reason why the Yankees keep winning enough to get people to come. It's not mystique; or "the pinstripes," as Leonardo DeCaprio suggested in *Catch Me If You Can*. To which Tom Hanks responded, "No. It's because they have Mickey Mantle." The Yankees themselves know this thinking. To have a 21st century Mickey Mantle, the Yankees pay with real dollars, not the fake currency that DeCaprio expertly peddled for years before he got caught; and then, DeCaprio went to work for "The Evil Empire": the U.S. government. If you can't beat them, might as well draw a healthy, real paycheck from them.

Prospects excess value methodology is similar to that funny money DeCaprio created. They look real enough in the present day, but as time wears on, there are a large percentage of those bets that become worthless. The elite prospect that produces heartache after 2 or 3 seasons in the wait for them to turn into real dollars. A certainty realized: a "worth less" investment.

This section wraps up the concept of salaries and prospects combining (along with trading, not discussed) to model why some teams do better than others. The trade mechanism would undoubtedly add the final piece to the predictive puzzle as the following does suggest that is the missing piece.

The methodology. Regular season wins were taken as the goal: 1998-2013 for all thirty teams. The salaries were compiled and combined from those seasons from the *Lahman database* – where errors could rightly exist – but checking against *Baseball Reference* seemed to correlate well. Prospect excess values came from 1995-2010 rankings for all teams (with Arizona and Tampa Bay having a 3 year disadvantage). This wrinkle captures the 3 year window of time discussed for prospect development from ranking to generating success (defined as over 7WAR.)

Using the baselines listed in the below table, and valuation adjustments based off ranking in a group (an elite #1 prospect was 1.4 times more valued than a #15 prospect, for example), prospect excess values was then adjusted (as were the salaries) against various inflation rates converted to 2014 dollars. The inflation variable did not, in general, affect the outcomes of regression. Using AIER.org website, that keeps track of inflation, provided a rational option for this rate, though 2.5 to 5% were tested in a sensitivity analysis. Prospects remained constant in all states, however. (KISS was employed once again.)

Baseball does not follow necessarily a normal consumer inflation rate. One only has to calculate the dollars spent in free agency and sports venue builds to know its likely much higher than 5%. Inflation is not a set or universal number across all thirty teams either. Each new 9-figure contract resets the top dollar market rate, if only by the winner's curse (to win the bid – but significantly overpay). The small market losers of the bidding wars attempt to keep their salary costs down, judiciously. Trying to emulate the Yankees, Rangers, Red Sox, Dodgers, or Angels in their 9-figure, quarter-billion pursuits is not the best way for small markets to compete as was reiterated in the *Moneyball* flick. Though, every rule has enough exceptions to massage these levels of salaries up.

TV contracts were renewed recently (2013-4); and MLB will infuse more revenues into the thirty teams. *Where do such revenues go?* Ask the owners – and the answer will reflect their biases or desires or put a winner together by certain means. Return on investments (team purchase) is in the financial side.

Excess Valuations Base Values

Prospect Excess Val(M)	Catcher	Centerfield	Corner IF	Corner OF	Designated Hitter	Hot Corner	Middle IF	Pitcher
Average 41-70	12.5	12.5	15	14	12	14	18	14
Elite 1-15	55	35	55	40	50	65	57.5	60
High 16-40	25	25	30	22.5	25	32	30	29.5
Low 71-100	12.5	12	7.5	10	7.5	10.5	14	10

Rank Adjustments to Valuations (Abridged)

BA Rank	Rk Factor	BA Rank	Rk Factor	BA Rank	Rk Factor	BA Rank	Rk Factor
1	1.4	16	1.25	41	1.15	71	1.075
2	1.35	17	1.235	42	1.145	72	1.0725
3	1.3	18	1.22	43	1.14	73	1.07
4	1.25	19	1.205	44	1.135	74	1.0675
5	1.2	20	1.19	45	1.13	75	1.065
6	1.15	21	1.175	46	1.125	76	1.0625
7	1.1	22	1.16	47	1.12	77	1.06
8	1.05	23	1.145	48	1.115	78	1.0575
9	1	24	1.13	49	1.11	79	1.055
10	0.975	25	1.115	50	1.105	80	1.0525

Regression Results

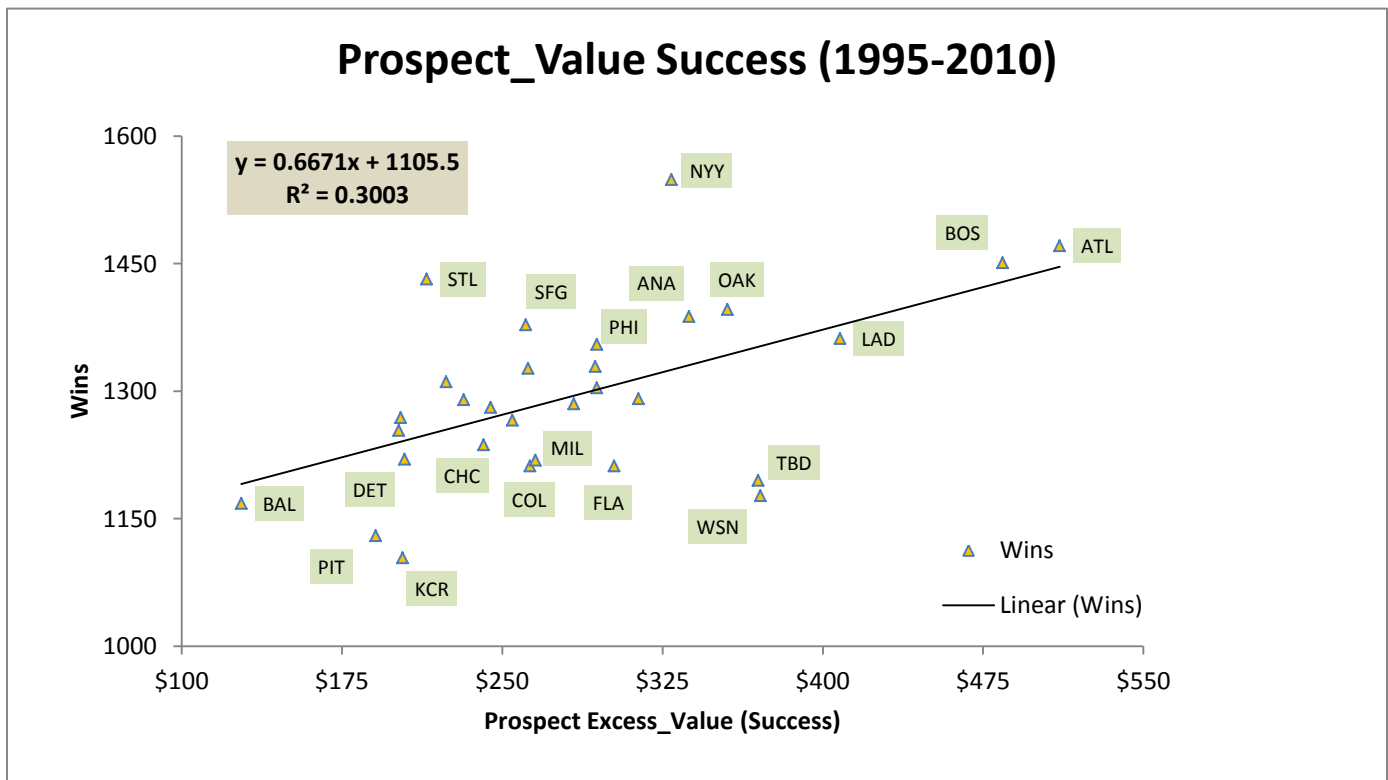
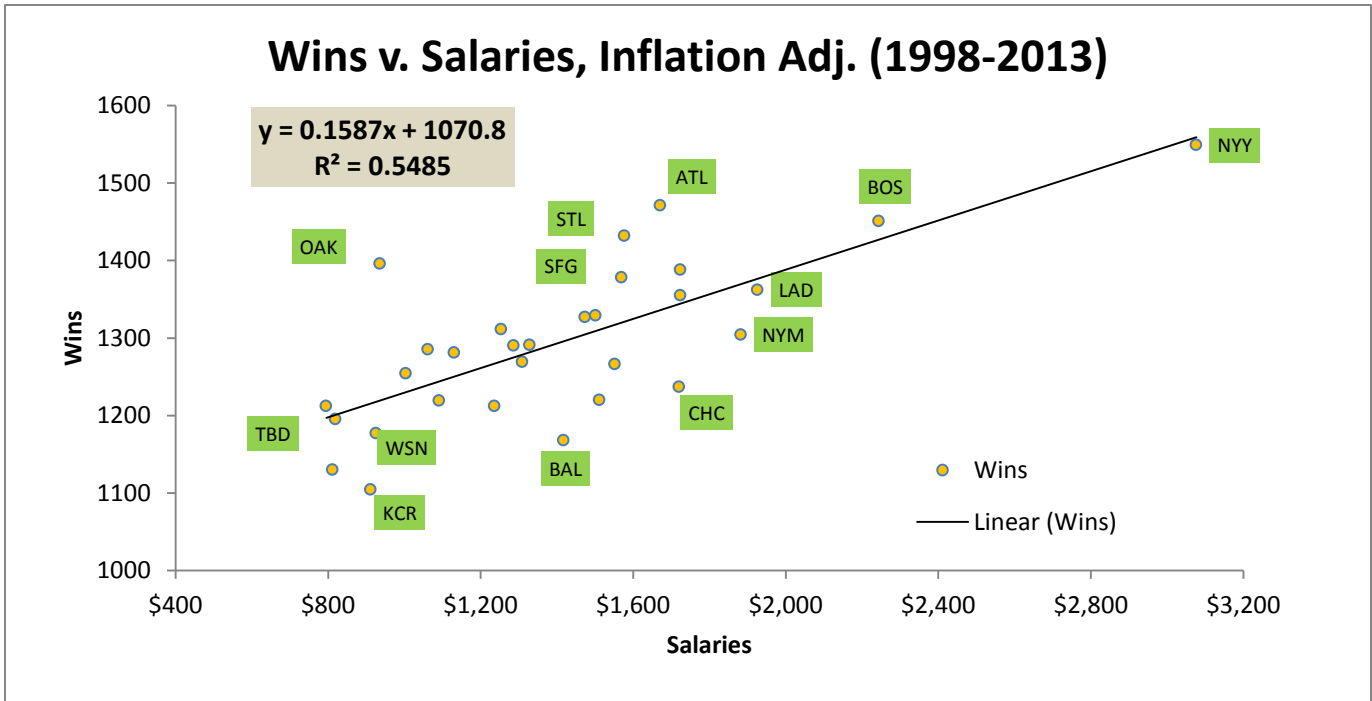
Regression Statistics

Multiple R	81.00%
R Square	65.62%
Adjusted R Square	63.07%
Standard Error	62.9
Observations	30

Variables	Coefficients	Std. Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	984.4	46.8	21.1	2.8E-18	888.5	1080.3
Salaries	0.135	0.026	5.3	1.4E-05	0.0826	0.1873
Prospect Excess Value	0.422	0.145	2.9	0.0072	0.1240	0.7191
Wins (Min) per season	61.5				55.5	67.5
Risk Factor Salaries	0.19					
Risk Factor Prospect	0.34	1.82	Prospect/\$			

The model coefficient values reflect the disparity between *Prospect Dollars* and *Real Dollars*, as the risk factor for prospects are higher. Smaller market teams are actually riskier by the nature of investments; as they depend on the

prospect success over big free agent acquisitions broadly. Using standard error divided by coefficients (the slope/average movement in Y based on X) the risk factors are as shown. As a result, those spending real dollars are more likely to influence winning immediately. Makes sense based on the discussions above.



Final team rankings assessed winning; dollars invested; prospect value that succeeded; ratio of those two factors; player development rates; and win residuals reflective of management's function to come to an overall rating.

Team 98-13	Wins	Salaries(M) (98-13)	Prospect_Success Val	Play Develop % (95-10)	Risk Sal/Prospect Ratio	Win Res (Field MGMT)	Salary Rk	Play Develop Rk	Risk Pref \$\$\$ Rk	Win Rk	Final Rating	Final Score
BOS	1451	\$2,244.4	\$484.1	57.2%	4.64	-40.3	2	2	12	3	1	14.0
ATL	1471	\$1,671.2	\$510.8	45.9%	3.27	45.7	8	13	5	2	2	15.8
OAK	1396	\$935.5	\$355.3	51.0%	2.63	135.6	25	6	4	5	3	25.5
ANA	1388	\$1,724.1	\$337.3	51.9%	5.11	28.7	5	5	16	6	4	29.1
ARI	1291	\$1,328.9	\$313.7	63.1%	4.24	-5.0	16	1	8	14	5	30.1
LAD	1362	\$1,926.0	\$408.0	43.5%	4.72	-54.3	3	17	14	8	6	38.9
PHI	1355	\$1,724.1	\$294.2	52.8%	5.86	13.9	6	4	21	9	7	41.4
WSN	1177	\$925.6	\$370.8	56.0%	2.50	-88.6	26	3	2	27	8	45.6
MIN	1285	\$1,061.6	\$283.6	45.9%	3.74	37.8	23	14	6	16	9	47.8
CIN	1281	\$1,130.2	\$244.5	49.7%	4.62	41.0	21	8	11	17	10	49.8
TEX	1329	\$1,501.1	\$293.5	46.1%	5.12	18.3	13	12	17	10	11	50.1
TBD	1195	\$818.8	\$369.7	48.5%	2.21	-55.8	28	9	1	26	12	50.3
MIL	1219	\$1,091.0	\$265.6	48.4%	4.11	-24.6	22	10	7	23	13	52.6
CLE	1311	\$1,254.1	\$223.8	46.2%	5.60	63.0	19	11	19	12	14	60.0
FLA	1212	\$794.9	\$302.4	44.4%	2.63	-7.1	30	16	3	24	15	60.1
NYN	1549	\$3,076.7	\$329.1	38.3%	9.35	10.7	1	23	29	1	16	62.0
SFG	1378	\$1,569.2	\$261.0	38.9%	6.01	71.8	10	22	22	7	17	62.3
STL	1432	\$1,577.3	\$214.6	39.7%	7.35	144.3	9	20	27	4	18	64.2
TOR	1290	\$1,286.2	\$232.0	45.6%	5.54	34.2	18	15	18	15	19	64.7
NYM	1304	\$1,882.3	\$294.3	40.5%	6.40	-58.5	4	19	24	13	20	65.1
CHW	1327	\$1,473.5	\$262.1	39.6%	5.62	33.3	14	21	20	11	21	66.3
HOU	1269	\$1,309.0	\$202.6	50.7%	6.46	22.6	17	7	25	18	22	71.6
SEA	1266	\$1,551.3	\$254.7	42.4%	6.09	-35.1	11	18	23	19	23	74.9
SDP	1254	\$1,003.4	\$201.6	37.4%	4.98	49.2	24	25	15	20	24	79.9
COL	1212	\$1,236.3	\$263.0	36.0%	4.70	-50.1	20	27	13	24	25	80.0
PIT	1130	\$811.7	\$190.8	37.8%	4.25	-44.4	29	24	9	29	26	83.6
CHC	1237	\$1,720.3	\$241.2	36.4%	7.13	-81.2	7	26	26	21	27	87.1
KCR	1104	\$911.4	\$203.3	34.0%	4.48	-89.1	27	28	10	30	28	89.2
DET	1220	\$1,511.3	\$204.2	33.8%	7.40	-54.4	12	29	28	22	29	99.3
BAL	1168	\$1,417.3	\$127.9	24.4%	11.08	-61.6	15	30	30	28	30	113.1

The ratings reflect some conclusions made from many MLB observers: Boston, with their enormous resources and recent successes in player development came a long way. 3 titles in 16 seasons and a few near misses reflected that idea. Atlanta and Oakland are both mid-to-small markets that succeeded with player development and management skills (the win residual for Oakland). The Cardinals and the Yankees are not bad operations. New York used enormous resources, dollars, to get their needs fulfilled. Less risky, as noted, and rated based on that occurrence (a multiplier of 1.8 was used). St. Louis has the greatest win residual over this time frame – nearly 9 wins per season. Is that tied to their front office? Tony LaRussa? Something inherent with their way of playing? There having one Albert Pujols for a time?

In the bottom tier (BAL, DET, KCR, CHC): poor prospect development, large salary investments versus prospects, poor win residuals (had at the behest

of their brethren) and overall wins caused this result. The teams rated at 45-67 (WSN-CHW) are closely bunched that ranking them is a matter of one or two years being better than expected, or hitting once on an all-star acquisition.

The greater moral of the story is: while one can build a team through prospect acquisition and superior player development, the ability to use both real money and prospect acquisition well will defeat any better farm system over the long run. Success rates are not high enough to outweigh cold hard cash.

Teams that have balanced their risks well enough, and can reach for their checkbooks, win, and big, over the span. Some that cannot put prospects in the system, and get high successes, will always struggle too. Their checkbooks are more about papering over mistakes made in drafting, player acquisitions, and poor facilities and development regimes.

Free agents are, by their nature, developed players – their obvious drawbacks are a decline after thirty-thirty two years of age, depending on their peak levels historically. The key to their timely acquisition is duration of contract, terming those deals to at best a three to four year window, and thereby allowing for their prospective replacements to mature. This is a risk game too.

These are but a few broad conclusions, and not set in stone. The nature of paying for Mickey Mantle or valuing the *next Mickey*, is one of taking both in account.

Summarizing Both Macrosabermetric Models

The Fan Model is an engine that needs elite fuel. Players acquired must create this fuel to generate runs or to stop runs. A player's walk ability plus firm contact promotes the offense to top status. Pitchers must balance the tasks of strikeouts, reducing walks, and keeping the ball in play versus throwing too many balls and tiring out, thus turning the task over to relievers. Good gloves are a matter of positioning, scouting, and repetition. These abilities work towards creating wins; which influences home attendance; which too fuels stable revenues. Profits will come from this good product.

The Business Model has to reinvest ample assets into scouting talent at home, or abroad; build up talent through development systems that combine psychological and physical analytics; and realize the overall percentages in prospect development are risky bets. Therefore, teams must acquire the cost effective free agents that can work as the bridge for the daily gambit of winning games. The identification of efficient additions requires too a final asset.

Top analytical talent – to tie together these two models – has to be found by MLB front offices. The era of Big Data infuses not just baseball, but the entirety of humanity, with new found ways to understand our world, even if through the 100MPH movements of a little white sphere that bedevils normal batters 75% of the time. The analyst too will miss at times on data that strongly fits the pattern.

Ballplayers are far from a known quantity, resulting in the dynamics seen in the game daily. The best any fan, or analyst can do, is to appreciate the aspects of the game he knows; and try harder to empathize on those he does not.

Front Offices in Baseball: The *Moneyball* Evolution

First, no general manager was interviewed, nor can this author speak specifically to their daily task lists. From a naive perspective, it would be easy to chalk their jobs up to acquiring the best players: improvement of the on field talent. That would be a very narrow job description, and certainly is a part of it, but not as high a percentage of it as fans would hope.

A GM's job has evolved as the business of baseball grew more complex, especially since free agency in 1976. A great deal of personnel and personality management exists through intense preparations for major events such as the June draft; player scouting and delegation of important tasks with limited staffing and budgets; newest to the scene are "analytics hiring" for technical support of all systems; an influence in field and ballpark staff operations; and, as always, final acquiescence to ownership's wishes. Minnesota's GM Terry Ryan stated that, "he was responsible for all aspects of the baseball operation: scouting, the drafts, major league coaching staff, budgeting, dealing with the media, contract negotiations, arbitration background and preparation, and representing ownership (McKelvey 2000, 252)." Thus, the range of tasks is not just player acquisitions.

In earlier incarnations, a general manager's responsibilities ran an even greater gambit from directing on-field promotions to any and all levels in between. Employees did as directed, but the game then was much smaller, and players did not have the power they possess today. As former Atlanta GM John Schuerholtz, stated, "Many had [speaking of GMs], in fact, direct responsibility for all facets of the organization. But by the '90s, baseball had become so sophisticated, so technically specific in each area, that it became impossible for a GM to manage it all. We're in that age of specialization (Guest and Schuerholz 2006, 131)." From that insight, a baseball GM is akin to an upper-level division head for a multi-billion corporation with business operation heads that supersede one's authority; or share a co-review of decisions status; while ballplayers leverage control away by salaries multiples of any GM's pay. And the ownership, in its many forms, expects this "divisional GM" to return ample profits, and World Series titles, or at least, participation.

Thus an all-consuming job with tasks from the basic, but very important, personnel hires to courting \$200 million dollar free agents to social functions, that are opportunity cost moments, exists. The tradeoffs are endless for a GM: as one could build a crack staff and winning team, but by shirking social connecting, or delineated ownership duties, be on a fast track to not being the GM. The year round cycle of the sport – from winter meetings to acquiring talent through trade or purchase, spring training evaluations of players and staff, the May and June preparations for 40 new players, July's determination of playoff worthiness, and then, focus on minor league talent and call-ups in the early fall – these all put pressure on

building the right staff to manage all the tasks better than any one man or woman can.

Moreover, crises will happen: an all-star blows out his arm; arrests or media worthy behavior; or even, tragedy, as catcher Thurman Munson's plane crash in 1979 or pitcher Darryl Kile's death in 2002. The GM has to respond appropriately to all situations. Evaluation is ultimately the most useful characteristic of any GM: the ones that can do it the most effectively, and efficiently, stay GM, or get promoted by title and salary.

Since the landmark *Moneyball* book, interest in front offices doings, sports management positions, and their complex duties have grown in lock step with the baseball websites dedicated to blogging analytical insights about their successes and mistakes. Baseball front offices, from the GM on down, are dissected for their "makeup," the titles of personnel, and where they get "the talent." This is a likely byproduct of Michael Lewis's description of where the A's jumpstarted successfully "winning an unfair game" of resource management by employing more *Wall Street* arbitraging brains to finding the undervalued brawn.

This focus started out on Billy Beane's assistant GM who was then Paul DePodesta, a Harvard man with economics as his undergraduate. Benjamin Baumer and Andrew Zimbalist, in *The Sabermetric Revolution*, stated this baseline: "He certainly has the quantitative background to perform and interpret linear regression models, but, like [Bill] James, lacks formal training in mathematical statistics or advanced techniques at the level of, say, hierarchical Bayesian models. This background (undergraduate social science major at an elite university with some quantitative training) is now very common among front offices executives at all levels of the baseball operations hierarchy (2014, 24)." This pedigree or biography carried forward quite readily to many 21st century GMs and their front office hires across the MLB landscape.

Former GM in Boston, Theo Epstein, graduated from Yale; obtained his JD while working in the San Diego front office. Jed Hoyer, now GM of the Cubs, reports to his long-time friend Epstein, went to and played for Wesleyan University, a private northeastern college. J.P. Ricciardi, grew up in Worcester, Massachusetts, and attended and played baseball for Saint Leo University, a private catholic school. Keith Law, Harvard undergrad with honors, Carnegie Mellon master's degree, worked for Ricciardi in Toronto on negotiations and scouting after a suggested interview by Paul DePodesta. Law started off penning articles at *Baseball Prospectus* in 1997.

Jeff Luhnow, MBA from Northwestern, started out with Cardinals, now is GM of the Houston Astros. The Cardinals employed a human factors engineer from Lockheed-Martin, Sig Mejdal, who modeled out a system to identify pitching injury factors and created STOUT – named after statistics and scouting. Sig works for Luhnow at present in 2014.

Back in the 1960s, Houston's Tal Smith, implemented the computerization of scouting reports and player data; directed the Colt 45's scouting and player development programs; and from 1961 through 1973 produced the most players that reached the show. Tal received his undergrad in business administration from Duke University in 1955; and was GM for the Houston Astros in the late 1970s, before going into consulting on player arbitration hearings.

Adam Fisher is with the Mets, Harvard grad, alongside DePodesta (player development), Ricciardi (special assistant), and Sandy Alderson, another elder statesmen of these sabermetric front offices. Alderson, the Harvard-educated lawyer, hired Billy Beane (the one-time Stanford bound kid) after his Mets' career (drafted 23rd overall in 1980) floundered.

Texas GM Jon Daniels is a Cornell graduate in applied economics. He is assisted by A.J. Preller, his college roommate. Tampa Bay's GM Andrew Friedman went to Tulane for finance and management, worked at ill-fated Bear Stearns – his owner, Stuart Sternberg, a St. John grad in finance, is a former Goldman Sachs partner. Galen Carr, left Salomon Smith Barney to Boston Red Sox in 2000, and still works for the Sox in scouting.

Chris Antonetti, the newest GM in Cleveland, is a Georgetown graduate with two brothers working as doctors from Hoya-land. Mike Chernoff works as an assistant GM in Cleveland graduated from Princeton, an archrival of Georgetown in basketball. The former Cleveland GM, now president, Mark Shapiro, graduated too from Princeton in 1989, majoring in history.

Pittsburgh hired Neal Huntington after years with the ill-fated Expos and Indians. He played college baseball and graduated from Amhurst College in Massachusetts. Pirate quantitative analyst, Mike Fitzgerald, was a math major at MIT (Forde 2013). Dan Fox, is their analytics head, as Travis Sawchik noted, "Fox never played baseball beyond high school. He graduated not with Ivy League pedigree but from Iowa State with a degree in computer science."

Oakland does not lack for talent either. After graduating DePodesta, first to Dodger GM post, they hired Farhan Zaidi, with a doctoral in behavioral economics from Cal Berkeley. All in all, the broad strokes:

- 1) Northeastern origins or "coastal" ties
- 2) Elite schools: Harvard, Yale, Princeton, MIT, Georgetown, Stanford, UC Berkeley, Duke, Cornell
- 3) Legal, financial, or engineering sectors in their prior work histories
- 4) Near obsession with the game – analytic writing, playing, or scouting

Bill James was hired by Boston in 2003. He fits the fourth point the best. By 2012, Bauman and Zimbalist, found 26 of the 30 teams in MLB had at least one person spending time on analytics; over half (17) had a small department of 2-4 personnel dedicated to generating results (Baumer and Zimbalist 2014, 26). (See below.)The pay for some of these baseball jobs is

not exactly high-end (50-150K for the entry level to a senior analyst), reflecting still an under importance. But one is not starving here either.

A host of others have landed positions from their blogosphere connections in the right outlets, specifically *Baseball Prospectus*, titled like Wall Street does for investor information on securities. People that read columns are getting a prospectus on players, correlative variables, new statistics, and backgrounds to what teams are doing right to win, or lose.

Pure results of data analytics cannot be measured completely to this point. If *Moneyball* was just an 18-year old kid with huge promise, the 2014 version just turned 30 years of age and expects free agency dollars. The mature talent is there as professors Baumer and Zimbalist note, "Today, sabermetrics is certainly highly influential in many front offices (Tampa, Boston, Cleveland, Baltimore, the New York Mets and Yankees, and of course, Oakland, to name a few (2014, 26)..." But their results are a matter of revisionist history: "When did they become analytical?" Or, when and where did one take that cellphone selfie and uploaded it to Snapchat?

So close to the revolutions in interactive media, Web 3.0, mobile technology outbreak worldwide, and the explosion of big data, the influence of sabermetrics will come down even further to micro-levels, as discussed. So this "player development" phase of sabermetrics has moved forward to the veteran looking for ways to tweak his outcomes with new insights, an edge, to defeat both the like-minded, and the tradition-bound alike.

MLB Analytics, 2012 (Baumer and Zimbalist, 2014), modified

American League - 2014 GMs		
East Division	Central Division	West Division
Dan Duquette (Baltimore Orioles)	Rick Hahn (Chicago White Sox)	Jeff Luhnow (Houston Astros)
Ben Cherington (Boston Red Sox)	Chris Antonetti (Cleveland Indians)	Jerry Dipoto (Los Angeles Angels of Anaheim)
Brian Cashman (New York Yankees)	Dave Dombrowski (Detroit Tigers)	Billy Beane (Oakland Athletics)
Andrew Friedman (Tampa Bay Rays)	Dayton Moore (Kansas City Royals)	Jack Zduriencik (Seattle Mariners)
Alex Anthopoulos (Toronto Blue Jays)	Terry Ryan (Minnesota Twins)	Jon Daniels (Texas Rangers)
National League - 2014 GMs		
East Division	Central Division	West Division
Frank Wren (Atlanta Braves)	Jed Hoyer (Chicago Cubs)	Kevin Towers (Arizona Diamondbacks)
Michael Hill (Miami Marlins)	Walt Jocketty (Cincinnati Reds)	Dan O'Dowd (Colorado Rockies)
Sandy Alderson (New York Mets)	Doug Melvin (Milwaukee Brewers)	Ned Colletti (Los Angeles Dodgers)
Rubén Amaro, Jr. (Philadelphia Phillies)	Neal Huntington (Pittsburgh Pirates)	Josh Byrnes (San Diego Padres)***
Mike Rizzo (Washington Nationals)	John Mozeliak (St. Louis Cardinals)	Brian Sabean (San Francisco Giants)
Analytics Dept. >=2	1 Full-time Analyst	Limited/No analytics titling

Oakland's major thesis was not to smack the baseball establishment down – as a traditionalist might attest it was – instead, it was a tactic to combat an unfair market with whatever ideas took shape and made sense in *that moment*. The cheapest and effective pieces available were not the multi-million dollar developed player, but the undervalued in the draft or castoffs from other teams. Drafted talent were tossed into the fire quickly (Huston Street, 2005, less than a year removed from his drafting 40th overall), thus employed for immediate returns. Any insights garnered from looking at player statistics generated against worthy competition levels – a college man, less risky, versus the high school player, a plausible bust. Or, identifying the castoff's skills that stop runs or produces runs at 30-50%, or less, of the going rate offered to a premium free agent. These went towards improving at the margins for Oakland for a moment: a snapshot in time.

Most of the 2014 Oakland A's (first place on July 24th) were not drafted by Oakland. Instead, it's a free agent-trade-waiver line approach:

Name	Age	Salary	Acquired	Name	Age	Salary	Acquired
Sonny Gray	24	\$502,500	Amateur Draft	Jed Lowrie#	30	\$5,250,000	Traded
Sean Doolittle*	27	\$505,000	Amateur Draft	Jim Johnson	31	\$10,000,000	Traded
Yoenis Cespedes	28	\$10,500,000	Amateur Free Agent	John Jaso*	30	\$2,300,000	Traded
Stephen Vogt*	29	\$502,500	Conditional Deal	Jason Hammel	31		Traded
Nick Punto#	36	\$2,750,000	Free Agency	Luke Gregerson*	30	\$5,065,000	Traded
Eric O'Flaherty*	29	\$1,500,000	Free Agency	Craig Gentry	30	\$1,145,000	Traded
Brandon Moss*	30	\$4,100,000	Free Agency	Josh Donaldson	28	\$500,000	Traded
Scott Kazmir*	30	\$7,000,000	Free Agency	Ryan Cook	27	\$505,000	Traded
Sam Fuld*	32		Free Agency	Alberto Callaspo#	31	\$4,875,000	Traded
Coco Crisp#	34	\$7,500,000	Free Agency	Kyle Blanks	27		Traded
Brad Mills	29		Purchased	Daric Barton*	28	\$1,250,000	Traded
Jesse Chavez	30	\$775,000	Purchased	Fernando Abad*	28	\$525,900	Traded
Eric Sogard*	28	\$510,000	Traded	Andy Parrino#	28		Waivers
Josh Reddick*	27	\$2,700,000	Traded	Dan Otero	29	\$502,500	Waivers
Derek Norris	25	\$505,000	Traded	Nate Freiman	27		Waivers
Tommy Milone*	27	\$510,000	Traded	Jeff Francis*	33		Waivers
Jeff Samardzija	29		Traded	Team Total	29.6	\$71,778,400	

Did the A's thesis work? Well yes, and no, according to professors Baumer and Zimbalist. They reflected the *Moneyball* draft did not prove them quite visionary, "while the A's 2002 draft slightly surpassed expectations, the draft fails to bolster the case that statistics should supersede scouting in the evaluation of amateur players (10)." While a decade ago, "Beane didn't have 'the slightest interest' in Scott Kazmir, because he was a high school player (11)." Nevertheless, time heals or changes, all wounds and scenarios. Kazmir was acquired from free agency before the 2014 season. This move happened after Kazmir's tumultuous ride for several seasons through independent league ball to the Indians in 2013.

Kazmir garnered an American League 2014 All-star selection (19 starts, FIP 3.20, 2.38 ERA, and 27 walks in 117.1 IP).

So, did not Beane adapt again to market forces? See an undervalued arm, risky, but available, to pay a well-reasoned price (2 years at \$21 million)? Did he let ego get in the way of logic by avoiding Kazmir once again?

This again is a central tenet to baseball operations: never be afraid to try a technique if supported well by thoughtful insights and reasonable analysis. Not perfect analysis, or ideas everyone else uses, but rather, try to risk when others are afraid to do so. With the brain power in front offices, and the technology capturing data by the terabyte, the one who employs quickest gathered insights, will win, if only, for a short time. Religiously adhering to "the way it always was," is a good way to keep things, "just that way." But that smacks of watching time and progress pass by, treasuring something no longer attainable, or even, really seen. Yet, yearning to win – but without the guts to try something new.

It is the constant evolution of baseball to utilize people with various backgrounds, generating worthwhile statistics and analysis to further success on the field of play. As Paul Caron and Rafael Gely emphasize in quoting Mark Gerson's *Home Run* from *The Weekly Standard*, "[I]f the market for baseball players is not efficient, then no industry can be safely considered efficient. And inefficient markets create opportunities for people who think in new ways. Billy Beane is a baseball genius, but it doesn't take a genius to follow his example and start asking the right questions (Caron and Rafael 2004, 1498)." And with this questioning, the ever important evaluation process must consider people from other industries as more talented in controlling teams' futures than long-time standard bearers of the sport: the well-travelled scouts; the minor league managers; people with generational ties in the sport; and former players whose knowledge is often skewed by certain experiences and colored beyond logical ends. (Inside the forest, unable to see the trees for their beauty, one misses a great deal.)

The work of the SABR organization and the individual efforts of Bill James has resulted (if only years later) in a more salient, tangible, and productive usage of stats incorporated into the complex realm of baseball operations. The Oakland Athletics were most visible and usually best (under Sandy Alderson and Billy Beane's regime) to understand the power of statistics, the financial opportunity of cheaper replacement parts, the paying accordingly to those special skill sets. But before *Moneyball* could properly assessed that for what it was (in a written documentary of how the Oakland team was put together under a newly learned or exploitable method in the late 1990s-2002), several teams also instituted their unique versions of that particular program, with failures (Kansas City) and successes (Boston, Tampa) alike. Even in labeling those particular teams above, the changes are faster than one can accurately write about them in either camp.

As noted above, analytics departments are now the rule. The expansion of data analytics reflects baseball is a copy-cat league, much in the vein the NFL has with incarnations of defenses (4-3, 3-4, Tampa 2) and offenses (West Coast and Fun and Gun) evolved forward. This can be seen in player movements as the sabermetric bunch tend to work amongst themselves, trading players, picking up cast offs – once rated highly, now under appreciated, a bargain – to fill a hole or take a flier. Not always, but a similar bent, that certain player types get noticed by certain organizations, much like NFL schemes require a type. (And analysis of trading patterns – the circles of teams – would be an enlightening story to do.)

Whatever seems to work for one team – high school player development, college drafting, trading excess talent, recyclable superstars, great bullpens, platoons splits, pitch type teaching, fielding shifts, international acquisitions, all market inefficiencies – that can be leveraged, if never quite reproduced. The key is commitment to analytics as an overall strategy from evaluating the market to building a framework into daily operations, but expected gains can take years, the player development cycle discussed is not immediate.

Lastly, as *Baseball Prospectus* writer Dayn Perry noted in *Baseball Between the Numbers* back in 2006, “Why make an either-or quandary out of two options that can coexist and be equally embraced? Beer or tacos? Nope: beer and tacos. Stats and scouts. After all, when it comes to evaluating baseball talent, stats and scouts are complementary, not contradictory approaches (Keri 2006, 370-371).” The purpose of each method should be to draw up a better sketch of what a player is, and how that will work in a game to the benefit of the team’s success. The reality again is with millions of dollars at stake, anything available should be entertained to improve on such knowledge.

Maybe an unrelated, yet a true statement of what has happened in recent baseball management and scouting comes from Thomas Friedman’s *The World is Flat* in providing this baseball applicable quote: “It is this triple convergence – of new players [in the front office], on a new playing field [of statistical analysis], developing new processes and habits for horizontal collaboration [in building a professional baseball team] – that I believe is the most important force shaping...the early twenty-first century [of baseball] (181-182).”

And thus this statistical management mantra is sung to fruition...with traditional scouting still very important to the future of the game. What started in farm system building, nearly a century ago, under Branch Rickey, the “quality from quantity” idea applies here. Quantity of data can provide quality of data once creatively analyzed by types that enjoy, obsess over, and even, dream they will produce new answers. The players can apply the lessons; and GMs will exploit that for the final edge: leading to victory.

Appendix A: Team Statistics by Era

Taft Era (1908-1921) Team Statistics

LG	Team	Years	Avg. Runs	Avg. Allow	Earned	W	L	Attendance	Avg. Attend	Win%
AL	Boston Red Sox	14	616.3	549.5	415.4	1167	926	6,518,902	6,133	0.558
AL	Cleveland Indians	7	667.9	593.3	456.1	571	463	3,623,876	6,982	0.552
AL	Chicago White Sox	14	599.6	551.1	416.5	1122	980	8,069,134	7,562	0.534
AL	Detroit Tigers	14	678.4	649.9	483.8	1110	996	6,659,429	6,324	0.527
AL	New York Yankees	9	623.1	582.6	458.2	680	653	5,193,897	7,593	0.510
AL	Cleveland Naps	7	592.6	612.0	436.3	524	546	2,540,482	4,636	0.490
AL	Washington Senators	14	565.8	592.4	438.6	1012	1089	3,555,134	3,289	0.482
AL	Philadelphia Athletics	14	610.9	653.9	492.5	974	1123	5,348,400	5,065	0.464
AL	New York Highlanders	5	597.8	684.6	486.4	339	421	1,706,995	4,445	0.446
AL	St. Louis Browns	14	558.3	655.1	483.9	898	1200	4,095,507	3,856	0.428
NL	New York Giants	14	667.6	530.5	405.4	1259	841	8,825,529	8,279	0.600
NL	Chicago Cubs	14	623.6	559.2	424.4	1168	940	6,220,010	5,775	0.554
NL	Pittsburgh Pirates	14	591.1	533.2	414.7	1113	987	4,934,306	4,607	0.530
NL	Brooklyn Robins	8	558.3	549.1	416.5	615	568	2,956,322	4,985	0.520
NL	Philadelphia Phillies	14	588.3	612.4	459.0	1032	1061	4,582,248	4,356	0.493
NL	Cincinnati Reds	14	584.0	610.8	448.6	1019	1090	4,525,880	4,202	0.483
NL	Boston Braves	10	578.4	604.8	469.9	710	772	2,309,393	3,138	0.479
NL	St. Louis Cardinals	14	571.9	656.0	497.4	917	1178	3,764,668	3,522	0.438
NL	Brooklyn Dodgers	2	595.0	706.5	532.5	122	181	512,000	3,413	0.403
NL	Brooklyn Superbas	4	478.3	594.8	453.5	237	373	1,223,221	3,908	0.389
NL	Boston Doves	3	489.0	668.7	473.0	161	299	597,965	2,577	0.350
NL	Boston Rustlers	1	699.0	1021.0	776.0	44	107	116,000	1,547	0.291

Coolidge Era (1922-1935) Team Statistics

LG	Team	Years	Avg. Runs	Avg. Allow	Earned	W	L	Attendance	Avg. Attend	Win%
AL	New York Yankees	14	887.0	707.4	600.4	1301	841	13,292,161	12,399	0.607
AL	Philadelphia Athletics	14	804.9	735.5	623.6	1177	950	7,800,927	7,387	0.553
AL	Washington Senators	14	783.1	727.0	622.1	1155	986	6,533,175	6,016	0.539
AL	Detroit Tigers	14	825.1	791.9	661.5	1109	1040	10,193,481	9,335	0.516
AL	Cleveland Indians	14	775.3	771.7	643.9	1082	1063	6,558,118	6,061	0.504
AL	St. Louis Browns	14	743.2	820.4	695.9	982	1159	4,019,632	3,718	0.459
AL	Chicago White Sox	14	706.2	798.6	673.8	934	1205	7,008,736	6,520	0.437
AL	Boston Red Sox	14	639.4	811.7	681.4	822	1318	5,002,273	4,671	0.384
NL	New York Giants	14	795.1	665.9	564.6	1231	909	10,983,014	10,207	0.575
NL	Chicago Cubs	14	772.9	686.1	582.2	1204	945	12,777,632	11,777	0.560
NL	Pittsburgh Pirates	14	784.8	705.4	588.9	1196	949	7,200,406	6,649	0.558
NL	St. Louis Cardinals	14	800.3	703.9	595.9	1198	951	6,616,188	6,092	0.557
NL	Brooklyn Robins	10	713.5	729.9	600.5	760	773	7,077,109	9,227	0.496
NL	Brooklyn Dodgers	4	707.0	751.0	634.8	287	325	2,113,347	6,774	0.469
NL	Cincinnati Reds	14	650.1	700.6	583.2	1001	1144	5,788,419	5,330	0.467
NL	Boston Braves	14	622.0	766.6	651.5	872	1274	4,619,616	4,325	0.406
NL	Philadelphia Phillies	14	738.2	910.5	769.6	829	1308	3,459,296	3,257	0.388

Appendix A: Team Statistics by Era

FDR Era (1936-1949) Team Statistics

LG Team	Years	Avg. Runs	Avg. Allow	Earned	W	L	Attendance	Avg. Attend	Win%
AL New York Yankees	14	829.1	616.2	537.4	1338	810	18,073,666	16,689	0.623
AL Boston Red Sox	14	793.0	704.4	620.8	1185	958	12,039,905	11,138	0.553
AL Detroit Tigers	14	751.6	686.6	593.0	1171	984	15,456,481	14,180	0.543
AL Cleveland Indians	14	707.0	660.4	577.9	1136	1009	13,295,156	12,153	0.530
AL Chicago White Sox	14	650.6	694.1	597.4	1024	1110	9,031,412	8,496	0.480
AL Washington Senators	14	668.1	757.3	643.2	972	1172	8,036,234	7,420	0.453
AL St. Louis Browns	14	689.9	812.9	713.0	899	1244	3,786,843	3,506	0.420
AL Philadelphia Athletics	14	639.1	796.6	687.1	853	1291	7,520,453	7,002	0.398
NL St. Louis Cardinals	14	752.2	617.1	530.9	1291	861	9,507,396	8,659	0.600
NL Brooklyn Dodgers	14	730.6	669.8	573.1	1176	973	14,783,435	13,550	0.547
NL Chicago Cubs	14	670.9	651.1	560.8	1089	1063	12,216,385	11,270	0.506
NL Pittsburgh Pirates	14	701.0	690.6	588.4	1080	1063	9,996,703	9,163	0.504
NL Cincinnati Reds	14	629.3	639.6	553.8	1076	1072	8,712,142	8,000	0.501
NL New York Giants	14	696.6	681.4	587.3	1071	1068	13,212,927	12,325	0.501
NL Boston Braves	9	629.1	655.1	562.0	654	721	6,187,438	9,046	0.476
NL Boston Bees	5	593.2	658.6	568.8	355	406	1,594,683	4,219	0.466
NL Philadelphia Blue Jays	2	555.0	667.0	575.0	125	182	836,561	5,328	0.407
NL Philadelphia Phillies	12	574.3	778.5	670.7	664	1172	5,399,617	5,901	0.362

Appendix A: Team Statistics by Era

IKE Era (1950-1963) Team Statistics

LG	Team	Years	Avg. Runs	Avg. Allow	Earned	W	L	Attendance	Avg. Attend	Win%
AL	New York Yankees	14	781.2	600.2	529.2	1361	815	22,311,226	20,450	0.625
AL	Cleveland Indians	14	716.6	647.3	568.8	1217	960	15,208,102	13,952	0.559
AL	Chicago White Sox	14	698.8	612.8	551.0	1199	981	16,377,147	14,902	0.550
AL	Minnesota Twins	3	757.3	697.7	613.3	252	231	4,096,491	16,789	0.522
AL	Boston Red Sox	14	735.3	716.6	634.4	1107	1069	14,968,143	13,745	0.509
AL	Detroit Tigers	14	702.9	699.9	621.0	1074	1105	16,699,189	15,195	0.493
AL	Baltimore Orioles	10	593.2	640.6	570.8	751	810	9,269,183	11,763	0.481
AL	Los Angeles Angels	3	686.3	716.7	620.3	226	258	2,568,588	10,527	0.467
AL	Kansas City Athletics	9	644.6	787.2	701.4	577	831	8,054,848	11,425	0.410
AL	Washington Senators	14	626.5	746.3	658.9	890	1286	8,204,151	7,548	0.409
AL	Philadelphia Athletics	5	648.8	811.0	730.6	311	459	2,069,153	5,319	0.404
AL	St. Louis Browns	4	613.5	827.3	726.5	228	388	1,356,955	4,434	0.370
NL	Brooklyn Dodgers	8	809.6	658.8	593.3	754	479	9,016,587	14,496	0.612
NL	Milwaukee Braves	11	715.8	612.8	541.5	972	740	18,084,748	21,004	0.568
NL	Los Angeles Dodgers	6	708.7	661.3	580.7	531	414	13,268,524	28,052	0.562
NL	San Francisco Giants	6	746.5	654.7	570.3	518	425	9,044,690	19,203	0.549
NL	New York Giants	8	702.9	655.5	570.6	659	576	7,127,156	11,551	0.534
NL	St. Louis Cardinals	14	700.9	685.7	609.7	1119	1052	14,072,432	12,910	0.515
NL	Cincinnati Redlegs	6	745.2	707.5	636.0	470	454	5,184,487	11,222	0.509
NL	Cincinnati Reds	8	667.8	684.0	607.5	615	632	5,901,334	9,457	0.493
NL	Boston Braves	3	692.3	683.0	600.7	223	238	1,713,144	7,321	0.484
NL	Philadelphia Phillies	14	650.6	676.5	597.5	1041	1130	12,362,003	11,341	0.480
NL	Pittsburgh Pirates	14	629.4	722.8	633.5	953	1217	13,602,945	12,514	0.439
NL	Chicago Cubs	14	641.1	735.1	644.7	937	1233	11,773,912	10,762	0.432
NL	Houston Colt .45's	2	528.0	678.5	586.0	130	192	1,643,958	10,086	0.404
NL	New York Mets	2	559.0	861.0	727.0	91	231	2,002,638	12,439	0.283

Appendix A: Team Statistics by Era

LBJ Era (1964-1977) Team Statistics

LG	Team	Years	Avg. Runs	Avg. Allow	Earned	W	L	Attendance	Avg. Attend	Win%
AL	Baltimore Orioles	14	683.8	561.6	502.4	1316	933	14,220,159	12,765	0.585
AL	Oakland Athletics	10	677.8	595.5	522.2	885	725	8,428,535	10,431	0.550
AL	Minnesota Twins	14	705.5	642.9	557.0	1194	1060	15,092,101	13,391	0.530
AL	New York Yankees	14	643.6	597.1	523.6	1184	1068	18,269,744	16,168	0.526
AL	Boston Red Sox	14	715.2	691.0	610.8	1176	1082	21,320,638	18,885	0.521
AL	Detroit Tigers	14	659.5	659.7	589.4	1164	1094	19,864,238	17,563	0.516
AL	Kansas City Royals	9	671.9	647.7	570.6	743	706	10,417,238	14,388	0.513
AL	Los Angeles Angels	1	544.0	551.0	469.0	82	80	760,439	9,388	0.506
AL	Chicago White Sox	14	622.8	636.9	562.1	1108	1148	14,031,112	12,362	0.491
AL	Cleveland Indians	14	611.4	660.3	587.7	1057	1196	11,135,398	9,863	0.469
AL	California Angels	13	570.8	628.3	550.4	983	1114	13,290,454	12,622	0.469
AL	Texas Rangers	6	644.5	702.0	609.7	444	518	6,086,589	12,680	0.462
AL	Washington Senators	8	582.1	676.0	592.4	563	725	5,452,029	8,466	0.437
AL	Milwaukee Brewers	8	609.9	694.8	618.8	550	738	7,654,019	11,830	0.427
AL	Seattle Mariners	1	624.0	855.0	769.0	64	98	1,338,511	16,525	0.395
AL	Seattle Pilots	1	639.0	799.0	707.0	64	98	677,944	8,268	0.395
AL	Kansas City Athletics	4	575.8	724.8	647.0	252	393	2,671,390	8,245	0.391
AL	Toronto Blue Jays	1	605.0	822.0	725.0	54	107	1,701,052	21,263	0.335
NL	Cincinnati Reds	14	739.5	642.2	576.4	1287	971	21,895,931	19,377	0.570
NL	Los Angeles Dodgers	14	639.7	559.4	491.3	1242	1017	30,701,336	27,217	0.550
NL	Pittsburgh Pirates	14	707.2	622.8	545.4	1241	1019	15,469,575	13,678	0.549
NL	Milwaukee Braves	2	755.5	688.5	611.0	174	150	1,466,495	9,052	0.537
NL	St. Louis Cardinals	14	661.8	629.4	552.9	1186	1073	22,286,966	19,671	0.525
NL	San Francisco Giants	14	676.9	652.4	560.9	1181	1078	13,359,464	11,812	0.523
NL	Philadelphia Phillies	14	654.9	662.1	588.6	1123	1137	19,650,150	17,405	0.497
NL	Chicago Cubs	14	670.6	697.9	614.6	1096	1163	16,187,355	14,262	0.485
NL	Atlanta Braves	12	663.8	697.9	614.1	926	1008	12,359,079	12,741	0.479
NL	Houston Astros	13	641.0	668.6	593.3	989	1107	17,450,483	16,620	0.472
NL	New York Mets	14	578.1	629.9	557.1	1037	1223	25,955,289	22,929	0.459
NL	Montreal Expos	9	614.6	717.2	633.3	629	821	10,325,149	14,301	0.434
NL	Houston Colt .45's	1	495.0	628.0	541.0	66	96	725,773	8,960	0.407
NL	San Diego Padres	9	558.4	732.0	637.3	567	881	8,162,154	11,227	0.392

Appendix A: Team Statistics by Era

Reagan Era (1978-1991) Team Statistics

LG	Team	Years	Avg. Runs	Avg. Allow	Earned	W	L	Attendance	Avg. Attend	Win%
AL	Boston Red Sox	14	760.9	707.8	637.0	1183	1027	29,316,364	26,531	0.535
AL	New York Yankees	14	722.7	684.2	616.3	1181	1028	30,821,060	27,994	0.535
AL	Detroit Tigers	14	742.7	694.1	626.9	1173	1040	25,460,887	22,958	0.530
AL	Kansas City Royals	14	702.6	674.0	600.6	1160	1047	30,254,168	27,479	0.526
AL	Milwaukee Brewers	14	739.3	701.7	626.8	1149	1062	23,896,137	21,704	0.520
AL	Baltimore Orioles	14	698.0	690.8	629.5	1135	1069	26,360,447	23,877	0.515
AL	California Angels	14	712.6	694.6	625.8	1119	1095	33,662,944	30,437	0.505
AL	Oakland Athletics	14	691.8	705.0	629.4	1113	1102	22,260,220	20,090	0.502
AL	Toronto Blue Jays	14	693.6	684.1	620.0	1106	1104	32,026,748	28,983	0.500
AL	Chicago White Sox	14	684.6	693.3	619.4	1083	1122	22,156,586	20,216	0.491
AL	Texas Rangers	14	684.5	705.6	624.9	1058	1149	21,185,334	19,120	0.479
AL	Minnesota Twins	14	692.1	724.8	657.0	1057	1157	20,818,291	18,654	0.477
AL	Cleveland Indians	14	685.4	756.2	679.6	994	1209	14,233,630	12,904	0.451
AL	Seattle Mariners	14	653.5	748.1	666.4	956	1256	15,219,149	13,674	0.432
NL	Los Angeles Dodgers	14	645.3	594.4	519.9	1178	1036	43,454,087	39,183	0.532
NL	Montreal Expos	14	639.3	612.9	546.7	1138	1070	23,569,213	21,564	0.515
NL	St. Louis Cardinals	14	653.9	636.0	567.7	1134	1073	30,945,495	27,829	0.514
NL	Cincinnati Reds	14	661.0	662.1	596.1	1128	1082	26,335,817	23,833	0.510
NL	Houston Astros	14	612.4	617.4	546.1	1122	1095	21,870,319	19,774	0.506
NL	New York Mets	14	649.8	631.4	556.9	1113	1093	27,525,770	24,865	0.505
NL	Pittsburgh Pirates	14	662.4	640.1	569.4	1111	1093	17,865,702	16,153	0.504
NL	Philadelphia Phillies	14	664.2	671.9	598.2	1112	1099	29,974,545	26,980	0.503
NL	San Francisco Giants	14	650.1	655.6	580.9	1093	1123	20,201,908	18,266	0.493
NL	San Diego Padres	14	621.4	640.6	569.6	1073	1141	22,563,237	20,346	0.485
NL	Chicago Cubs	14	666.1	704.6	632.8	1048	1154	24,977,744	22,462	0.476
NL	Atlanta Braves	14	641.1	700.1	617.1	1006	1197	17,812,685	16,267	0.457

Appendix A: Team Statistics by Era

Clinton Era (1992-2005) Team Statistics

LG	Team	Years	Avg. Runs	Avg. Allow	Earned	W	L	Attendance	Avg. Attend	Win%
AL	New York Yankees	14	845.1	723.4	665.3	1295	902	39,743,366	36,196	0.589
AL	Los Angeles Angels of Anaheim	1	761.0	643.0	598.0	95	67	3,404,686	42,033	0.586
AL	Boston Red Sox	14	811.6	746.3	670.6	1190	1012	34,404,493	31,051	0.540
AL	Cleveland Indians	14	828.2	764.4	697.2	1185	1014	36,705,507	33,582	0.539
AL	Chicago White Sox	14	803.3	761.5	692.1	1162	1037	26,444,376	24,084	0.528
AL	Oakland Athletics	14	787.5	755.8	687.9	1157	1044	24,459,800	22,236	0.526
AL	Seattle Mariners	14	803.9	761.4	703.6	1129	1070	36,834,945	33,794	0.513
AL	Anaheim Angels	8	788.1	765.4	706.9	664	632	19,349,952	29,769	0.512
AL	Toronto Blue Jays	14	770.2	768.3	703.1	1098	1104	34,560,862	31,305	0.499
AL	Texas Rangers	14	826.6	837.0	768.8	1094	1108	35,370,190	31,951	0.497
AL	Baltimore Orioles	14	762.5	763.4	710.6	1078	1121	44,220,092	40,237	0.490
AL	Minnesota Twins	14	740.1	784.1	727.9	1062	1136	22,804,460	20,656	0.483
AL	Milwaukee Brewers	6	722.5	728.3	665.3	437	469	8,672,572	19,230	0.482
AL	California Angels	5	673.8	748.2	683.8	338	407	9,204,727	24,351	0.454
AL	Kansas City Royals	14	725.2	814.0	751.3	969	1230	21,627,677	19,787	0.441
AL	Detroit Tigers	14	735.4	850.7	778.3	925	1276	22,903,970	20,822	0.420
AL	Tampa Bay Devil Rays	8	706.1	867.6	787.1	518	775	11,358,175	17,582	0.401
NL	Atlanta Braves	14	756.6	613.6	554.8	1337	863	40,985,812	37,294	0.608
NL	Houston Astros	14	766.8	686.7	625.2	1190	1013	32,232,750	29,196	0.540
NL	St. Louis Cardinals	14	755.6	703.8	638.9	1179	1021	39,552,116	35,924	0.536
NL	San Francisco Giants	14	753.7	717.7	653.1	1178	1024	33,808,750	30,568	0.535
NL	Los Angeles Dodgers	14	684.6	663.5	600.1	1131	1071	42,640,986	38,800	0.514
NL	Arizona Diamondbacks	8	753.8	754.1	688.3	652	644	22,892,149	35,327	0.503
NL	Washington Nationals	1	639.0	673.0	627.0	81	81	2,731,993	33,728	0.500
NL	Cincinnati Reds	14	736.8	756.1	691.4	1091	1112	28,905,086	26,135	0.495
NL	New York Mets	14	693.1	690.9	627.6	1070	1130	30,018,661	27,464	0.486
NL	Philadelphia Phillies	14	726.6	740.9	678.9	1068	1134	29,421,699	26,698	0.485
NL	Montreal Expos	13	682.2	716.6	642.2	988	1052	14,855,187	14,650	0.484
NL	Chicago Cubs	14	716.0	732.2	671.9	1061	1141	35,885,270	32,534	0.482
NL	San Diego Padres	14	700.1	736.0	665.0	1053	1152	29,316,926	26,628	0.478
NL	Florida Marlins	13	682.0	734.5	672.3	963	1076	22,085,337	21,695	0.472
NL	Colorado Rockies	13	832.8	886.2	818.8	949	1094	41,994,444	41,171	0.465
NL	Pittsburgh Pirates	14	687.5	757.1	688.2	998	1201	22,828,963	20,754	0.454
NL	Milwaukee Brewers	8	712.9	809.8	741.1	561	733	15,840,963	24,484	0.434

Appendix A: Top 100 Offenses (1908-2013) by WAR

Era	Season	Team	Runs Scored	FG WAR	Era	Season	Team	Runs Scored	BR WAR
Taft	1908	Giants	652	34.3	Taft	1910	Philadelphia Athletics	673	39.6
Taft	1909	Pirates	701	35.5	Taft	1911	Philadelphia Athletics	861	33.6
Taft	1910	Athletics	670	36.1	Taft	1912	Philadelphia Athletics	779	37.9
Taft	1912	Athletics	779	34.5	Taft	1913	Philadelphia Athletics	794	39.3
Taft	1913	Athletics	794	37.3	Taft	1914	Philadelphia Athletics	749	38.7
Taft	1915	Tigers	778	33.2	Taft	1915	Detroit Tigers	778	34.2
Taft	1917	Giants	635	33.5	Taft	1921	New York Yankees	948	35.1
Taft	1921	Yankees	948	36.4	Coolidge	1922	St. Louis Browns	867	37.1
Taft	1921	Giants	840	34	Coolidge	1924	New York Giants	857	35.4
Coolidge	1922	Giants	852	36.1	Coolidge	1927	New York Yankees	975	48.0
Coolidge	1924	Giants	857	36.3	Coolidge	1928	New York Yankees	894	34.5
Coolidge	1927	Yankees	976	49.3	Coolidge	1929	New York Yankees	899	38.8
Coolidge	1928	Yankees	894	35	Coolidge	1930	New York Yankees	1062	40.5
Coolidge	1929	Yankees	899	35.2	Coolidge	1931	New York Yankees	1067	45.8
Coolidge	1930	Yankees	1062	38.6	Coolidge	1932	New York Yankees	1002	38.2
Coolidge	1931	Yankees	1067	45	Coolidge	1932	Philadelphia Athletics	981	34.5
Coolidge	1932	Yankees	1001	38.4	Coolidge	1933	New York Yankees	927	35.2
Coolidge	1932	Athletics	981	36.7	Coolidge	1935	Detroit Tigers	919	36.1
Coolidge	1933	Yankees	927	35.4	FDR	1936	New York Yankees	1065	37.2
Coolidge	1934	Yankees	842	33.9	FDR	1939	New York Yankees	967	41.1
Coolidge	1934	Tigers	957	33.5	FDR	1941	Brooklyn Dodgers	800	35.9
Coolidge	1935	Cubs	845	34.3	FDR	1942	New York Yankees	801	36.0
FDR	1936	Yankees	1065	40.4	FDR	1944	St. Louis Cardinals	772	34.6
FDR	1937	Yankees	979	36.6	FDR	1948	Cleveland Indians	840	37.4
FDR	1938	Yankees	966	34.2	FDR	1948	Boston Braves	739	34.5
FDR	1939	Yankees	967	44.7	FDR	1949	Brooklyn Dodgers	879	36.2
FDR	1941	Yankees	830	37.2	IKE	1951	Brooklyn Dodgers	855	36.9
FDR	1941	Dodgers	800	35.1	IKE	1952	New York Yankees	727	38.3
FDR	1942	Yankees	801	39.5	IKE	1953	Brooklyn Dodgers	955	42.4
FDR	1942	Red Sox	761	34.2	IKE	1953	New York Yankees	801	37.0
FDR	1943	Cardinals	679	33.3	IKE	1955	Brooklyn Dodgers	857	40.2
FDR	1944	Cardinals	772	36.9	IKE	1955	New York Yankees	762	34.6
FDR	1946	Red Sox	792	34.3	IKE	1957	Milwaukee Braves	772	38.7
FDR	1948	Indians	840	42.1	IKE	1958	New York Yankees	759	38.4
FDR	1948	Braves	739	33.7	IKE	1958	Milwaukee Braves	675	34.2
FDR	1949	Dodgers	879	33.4	IKE	1960	New York Yankees	746	34.8
IKE	1951	Dodgers	853	34.4	IKE	1961	New York Yankees	827	36.2
IKE	1952	Yankees	727	37.7	IKE	1961	Milwaukee Braves	712	35.6
IKE	1953	Dodgers	955	40.5	IKE	1962	San Francisco Giants	878	41.0
IKE	1953	Yankees	798	34.2	IKE	1963	St. Louis Cardinals	747	35.6
IKE	1955	Yankees	760	37.8	IKE	1963	San Francisco Giants	725	34.4
IKE	1955	Dodgers	857	33.3	LBJ	1964	Milwaukee Braves	803	36.8
IKE	1956	Yankees	857	33.8	LBJ	1965	Cincinnati Reds	825	33.6
IKE	1957	Braves	772	35.1	LBJ	1966	Pittsburgh Pirates	759	35.6
IKE	1958	Yankees	759	36.7	LBJ	1967	Detroit Tigers	683	36.0

Appendix A: Top 100 Offenses (1908-2013) by WAR

Era	Season	Team	Runs Scored	FG WAR	Era	Season	Team	Runs Scored	BR WAR
IKE	1960	Yankees	746	34	LBJ	1968	Detroit Tigers	671	35.9
IKE	1961	Yankees	825	37.2	LBJ	1968	Pittsburgh Pirates	583	34.8
IKE	1962	Giants	878	37.8	LBJ	1969	Baltimore Orioles	779	44.0
LBJ	1964	Braves	803	35.1	LBJ	1969	Oakland Athletics	740	35.1
LBJ	1965	Reds	824	33.2	LBJ	1970	Baltimore Orioles	792	37.1
LBJ	1966	Pirates	759	33.8	LBJ	1971	Baltimore Orioles	742	40.3
LBJ	1967	Tigers	683	33.1	LBJ	1971	Pittsburgh Pirates	788	37.8
LBJ	1968	Tigers	671	34.3	LBJ	1972	Oakland Athletics	604	36.2
LBJ	1969	Orioles	779	44.6	LBJ	1972	Cincinnati Reds	707	35.9
LBJ	1970	Orioles	792	36.9	LBJ	1973	Baltimore Orioles	754	42.6
LBJ	1970	Reds	775	36	LBJ	1973	Oakland Athletics	758	39.5
LBJ	1971	Orioles	742	39.3	LBJ	1974	Los Angeles Dodgers	798	37.8
LBJ	1971	Pirates	788	37.4	LBJ	1974	Cincinnati Reds	776	36.2
LBJ	1972	Reds	707	35.5	LBJ	1975	Cincinnati Reds	840	40.6
LBJ	1973	Orioles	754	41.2	LBJ	1976	Cincinnati Reds	857	43.7
LBJ	1973	Athletics	758	36	LBJ	1976	New York Yankees	730	42.1
LBJ	1974	Reds	776	38.6	LBJ	1977	New York Yankees	831	37.8
LBJ	1974	Dodgers	798	37.4	LBJ	1977	Philadelphia Phillies	847	33.9
LBJ	1975	Reds	840	43.2	Reagan	1978	Milwaukee Brewers	804	37.9
LBJ	1976	Reds	857	45.9	Reagan	1978	Philadelphia Phillies	708	33.9
LBJ	1976	Yankees	730	38.2	Reagan	1980	Milwaukee Brewers	811	34.1
LBJ	1977	Phillies	847	38.5	Reagan	1982	Milwaukee Brewers	891	38.8
LBJ	1977	Yankees	831	37	Reagan	1982	California Angels	814	34.6
Reagan	1978	Brewers	804	34.7	Reagan	1983	Detroit Tigers	789	40.1
Reagan	1978	Dodgers	725	33.3	Reagan	1984	Detroit Tigers	829	36.9
Reagan	1982	Brewers	891	35.9	Reagan	1985	St. Louis Cardinals	747	35.4
Reagan	1982	Angels	814	34.1	Reagan	1985	New York Yankees	839	34.6
Reagan	1983	Tigers	789	34.3	Reagan	1987	Detroit Tigers	896	33.9
Reagan	1984	Tigers	829	35.5	Reagan	1990	Oakland Athletics	733	39.6
Reagan	1985	Cardinals	747	34.3	Clinton	1992	Oakland Athletics	745	34.0
Reagan	1986	Mets	783	33.3	Clinton	1993	New York Yankees	821	36.0
Reagan	1990	Athletics	733	36.4	Clinton	1993	San Francisco Giants	808	35.5
Clinton	1993	Giants	807	35.4	Clinton	1996	Seattle Mariners	993	39.5
Clinton	1996	Mariners	993	37.1	Clinton	1996	Cleveland Indians	952	33.6
Clinton	1997	Mariners	925	34	Clinton	1997	Seattle Mariners	925	37.7
Clinton	1998	Braves	826	37.6	Clinton	1998	New York Yankees	965	39.6
Clinton	1998	Yankees	965	36.1	Clinton	1998	Atlanta Braves	826	37.4
Clinton	1998	Astros	873	35.1	Clinton	1999	Cleveland Indians	1009	35.6
Clinton	1999	Indians	1009	34.4	Clinton	2000	San Francisco Giants	925	34.4
Clinton	2000	Giants	925	34.7	Clinton	2001	Seattle Mariners	927	50.6
Clinton	2001	Mariners	927	44.4	Clinton	2002	Anaheim Angels	851	37.0
Clinton	2002	Giants	783	35.2	Clinton	2002	San Francisco Giants	783	35.6
Clinton	2003	Braves	907	35.5	Clinton	2003	Atlanta Braves	907	36.6
Clinton	2003	Cardinals	876	34.3	Clinton	2003	Boston Red Sox	961	35.2
Clinton	2004	Cardinals	854	33.8	Clinton	2005	Cleveland Indians	790	36.5

Appendix A: Top 100 Offenses (1908-2013) by WAR

Era	Season	Team	Runs Scored	FG WAR	Era	Season	Team	Runs Scored	BR WAR
Bush	2007	Phillies	892	34.5	Bush	2007	New York Yankees	968	38.7
Bush	2007	Yankees	968	33.7	Bush	2009	LA Angels of Anaheim	883	37.5
Bush	2008	Red Sox	845	33.6	Bush	2009	New York Yankees	915	33.8
Bush	2008	Cardinals	779	33.2	Bush	2010	Tampa Bay Rays	802	36.4
Bush	2009	Yankees	915	33.1	Bush	2010	New York Yankees	859	35.6
Bush	2010	Reds	790	33.9	Bush	2011	Boston Red Sox	875	36.7
Bush	2011	Red Sox	875	35.6	Bush	2011	Tampa Bay Rays	707	36.0
Bush	2011	Rangers	855	35.3	Bush	2011	Texas Rangers	855	34.1
Bush	2012	Angels	767	37.8	Bush	2012	Anaheim	767	39.9
Bush	2013	Red Sox	853	36.8	Bush	2013	Boston Red Sox	853	39.9

Note: BR WAR - Baseball Reference; FG WAR - Fangraphs. More commonly known as rWAR; fWAR

Appendix A: Top 100 Pitching Staffs (1908-2013) by WAR

Era	Season	Team	Earned Run Avg	FG WAR	ERA	Season	Team	Earned Run Avg	BR WAR
Taft	1914	Terrapins	3.13	25.3	Taft	1909	Chicago Cubs	1.75	27.3
Taft	1914	Hoosiers	3.06	23.7	Taft	1912	Boston Red Sox	2.76	26.1
Taft	1915	Terriers	2.73	23.9	Taft	1913	Chicago White Sox	2.33	25.1
Taft	1920	Indians	3.41	24.7	Taft	1915	Washington Senators	2.31	27.5
Coolidge	1932	Indians	4.12	24.5	Taft	1915	Chicago White Sox	2.43	24.5
FDR	1936	Red Sox	4.39	25	Taft	1917	Chicago White Sox	2.16	27.1
FDR	1939	Tigers	4.29	23.1	Coolidge	1925	Philadelphia Athletics	3.87	25.8
FDR	1940	Tigers	3.99	24.9	Coolidge	1926	Philadelphia Athletics	3	31.0
FDR	1942	Tigers	3.13	23.9	Coolidge	1929	Philadelphia Athletics	3.44	25.8
FDR	1943	Cardinals	2.57	24.2	Coolidge	1931	Philadelphia Athletics	3.47	25.3
FDR	1944	Tigers	3.09	23	Coolidge	1932	Cleveland Indians	4.12	25.1
FDR	1945	Pirates	3.76	23.7	Coolidge	1933	Cleveland Indians	3.71	25.2
FDR	1945	Cubs	2.98	23.4	Coolidge	1935	Boston Red Sox	4.05	27.1
FDR	1946	Tigers	3.22	25.2	FDR	1936	Boston Red Sox	4.39	30.5
FDR	1948	Red Sox	4.2	23.1	FDR	1940	Brooklyn Dodgers	3.5	28.3
FDR	1949	Red Sox	3.97	23.3	FDR	1940	Detroit Tigers	4.01	25.9
IKE	1955	Indians	3.39	23.3	FDR	1942	Detroit Tigers	3.13	27.0
IKE	1956	Indians	3.32	25.1	FDR	1942	St. Louis Cardinals	2.55	26.8
IKE	1956	White Sox	3.73	22.9	FDR	1949	St. Louis Cardinals	3.44	25.7
IKE	1960	Pirates	3.49	23.7	IKE	1953	Milwaukee Braves	3.3	24.5
IKE	1962	Cardinals	3.55	24.3	IKE	1954	New York Giants	3.09	26.9
IKE	1962	Colt .45's	3.83	23.2	IKE	1954	Milwaukee Braves	3.19	25.0
LBJ	1964	Reds	3.07	27.7	IKE	1954	Cleveland Indians	2.78	24.7
LBJ	1966	Dodgers	2.62	29.1	IKE	1955	Cleveland Indians	3.39	25.7
LBJ	1967	Reds	3.05	24.8	IKE	1956	Cleveland Indians	3.32	26.4
LBJ	1967	Phillies	3.1	23.6	IKE	1957	Brooklyn Dodgers	3.35	25.9
LBJ	1968	Cardinals	2.49	23.5	IKE	1960	St. Louis Cardinals	3.64	25.7
LBJ	1969	Cubs	3.34	28.3	LBJ	1965	San Francisco Giants	3.2	26.0
LBJ	1969	Cardinals	2.94	24.7	LBJ	1966	Los Angeles Dodgers	2.62	28.3
LBJ	1969	Pirates	3.61	23.4	LBJ	1967	Cincinnati Reds	3.05	32.2
LBJ	1969	Astros	3.6	23.3	LBJ	1967	Minnesota Twins	3.14	25.2
LBJ	1970	Cubs	3.76	31.2	LBJ	1969	Chicago Cubs	3.34	28.0
LBJ	1970	Cardinals	4.06	25	LBJ	1969	St. Louis Cardinals	2.94	27.3
LBJ	1971	Cubs	3.61	25.6	LBJ	1971	Chicago White Sox	3.12	26.8
LBJ	1971	White Sox	3.13	24.4	LBJ	1971	Chicago Cubs	3.61	25.9
LBJ	1971	Mets	3	23.7	LBJ	1972	Chicago White Sox	3.12	24.6
LBJ	1972	Cubs	3.22	24.3	LBJ	1973	Chicago White Sox	3.86	26.4
LBJ	1974	Braves	3.06	24.9	LBJ	1973	Detroit Tigers	3.9	25.5
LBJ	1975	Royals	3.49	23.5	LBJ	1974	New York Mets	3.42	24.5
LBJ	1976	Phillies	3.1	23.3	LBJ	1975	Chicago White Sox	3.93	24.3
LBJ	1977	Cubs	4.02	26.7	LBJ	1977	Chicago Cubs	4.01	27.2
LBJ	1977	Royals	3.55	23.4	Reagan	1978	Boston Red Sox	3.54	26.3
Reagan	1979	Red Sox	4.02	23.6	Reagan	1985	Kansas City Royals	3.49	26.9
Reagan	1982	Phillies	3.61	24.9	Reagan	1985	Toronto Blue Jays	3.31	24.5
Reagan	1982	Yankees	4	23	Reagan	1986	Milwaukee Brewers	4.01	25.0
Reagan	1983	Rangers	3.31	23.8	Reagan	1987	Kansas City Royals	3.86	28.0
Reagan	1983	Phillies	3.35	23.3	Reagan	1987	Toronto Blue Jays	3.74	24.1

Appendix A: Top 100 Pitching Staffs (1908-2013) by WAR

Era	Season	Team	Earned Run Avg	FG WAR	ERA	Season	Team	Earned Run Avg	BR WAR
Reagan	1985	Royals	3.49	27.1	Reagan	1989	Kansas City Royals	3.55	27.1
Reagan	1985	Red Sox	4.06	23	Reagan	1989	San Diego Padres	3.38	26.3
Reagan	1987	Royals	3.87	23	Reagan	1990	Boston Red Sox	3.72	27.2
Reagan	1989	Royals	3.55	27.4	Reagan	1990	Cincinnati Reds	3.39	26.6
Reagan	1990	Red Sox	3.72	26	Reagan	1991	Atlanta Braves	3.49	30.7
Reagan	1990	Mets	3.43	23.2	Reagan	1991	California Angels	3.69	26.9
Reagan	1991	Royals	3.92	23.3	Reagan	1991	Toronto Blue Jays	3.5	26.1
Clinton	1992	Red Sox	3.63	24.1	Reagan	1991	Los Angeles Dodgers	3.06	24.5
Clinton	1993	Braves	3.14	26.6	Clinton	1992	Boston Red Sox	3.58	27.2
Clinton	1993	Royals	4.04	24.2	Clinton	1993	Kansas City Royals	4.04	27.5
Clinton	1995	Braves	3.44	23.8	Clinton	1993	Los Angeles Dodgers	3.5	25.0
Clinton	1996	Braves	3.54	28.5	Clinton	1995	Cleveland Indians	3.83	26.3
Clinton	1996	Indians	4.34	24.1	Clinton	1996	Atlanta Braves	3.54	25.2
Clinton	1996	Yankees	4.65	23	Clinton	1996	New York Yankees	4.65	24.9
Clinton	1997	Braves	3.18	28.4	Clinton	1996	New York Yankees	3.84	32.8
Clinton	1998	Braves	3.25	25.9	Clinton	1997	New York Yankees	3.84	32.8
Clinton	1999	Braves	3.65	27.8	Clinton	1997	Toronto Blue Jays	3.92	26.1
Clinton	1999	Red Sox	4	26.8	Clinton	1997	Baltimore Orioles	3.91	24.4
Clinton	1999	Astros	3.84	26.7	Clinton	1998	Minnesota Twins	4.76	27.3
Clinton	2000	Red Sox	4.24	25.1	Clinton	1998	Anaheim Angels	4.49	26.1
Clinton	2001	Yankees	4.04	25.6	Clinton	1998	San Diego Padres	3.63	25.5
Clinton	2001	Athletics	3.59	23.4	Clinton	1998	Houston Astros	3.5	24.6
Clinton	2001	Red Sox	4.18	23.4	Clinton	1999	New York Yankees	4.13	25.5
Clinton	2002	Yankees	3.89	28.9	Clinton	1999	Boston Red Sox	4	24.5
Clinton	2002	Red Sox	3.75	27.4	Clinton	1999	Boston Red Sox	4	24.5
Clinton	2002	Diamondbacks	3.93	26.1	Clinton	2000	Boston Red Sox	4.23	25.4
Clinton	2002	Athletics	3.69	23.5	Clinton	2001	Arizona Diamondbacks	3.87	26.9
Clinton	2003	Yankees	4.03	29.1	Clinton	2001	New York Yankees	4.02	26.6
Clinton	2003	Red Sox	4.49	25.4	Clinton	2001	Oakland Athletics	3.59	26.5
Clinton	2003	Diamondbacks	3.84	25.1	Clinton	2001	Oakland Athletics	3.59	26.5
Clinton	2004	Twins	4.04	27.2	Clinton	2002	Arizona Diamondbacks	3.92	29.7
Clinton	2004	Red Sox	4.19	26.5	Clinton	2002	Arizona Diamondbacks	3.92	29.7
Clinton	2005	White Sox	3.61	23.5	Clinton	2002	New York Yankees	3.87	28.3
Clinton	2005	Angels	3.68	23.3	Clinton	2002	New York Yankees	3.87	28.3
Clinton	2005	Twins	3.72	22.9	Clinton	2002	Oakland Athletics	3.68	27.1
Bush	2006	Angels	4.04	23.8	Clinton	2002	Oakland Athletics	3.68	27.1
Bush	2006	Twins	3.95	23.5	Clinton	2003	Arizona Diamondbacks	3.84	29.2
Bush	2007	Red Sox	3.87	24.6	Clinton	2003	Oakland Athletics	3.63	28.2
Bush	2007	Indians	4.05	23.1	Clinton	2003	New York Yankees	4.02	25.8
Bush	2008	White Sox	4.11	25	Clinton	2003	Chicago Cubs	3.83	24.8
Bush	2008	Blue Jays	3.49	24.6	Clinton	2004	Minnesota Twins	4.03	27.6
Bush	2008	Red Sox	4.01	24.3	Clinton	2004	Chicago Cubs	3.81	25.5
Bush	2008	Diamondbacks	3.99	23.4	Clinton	2004	Chicago Cubs	3.81	25.5
Bush	2009	Red Sox	4.35	24.5	Clinton	2004	Texas Rangers	4.53	24.7
Bush	2009	Rockies	4.24	22.9	Clinton	2004	Boston Red Sox	4.18	24.4
Bush	2010	Rockies	4.14	25.6	Clinton	2005	Chicago White Sox	3.61	26.0
Bush	2010	White Sox	4.09	23.6	Bush	2007	Boston Red Sox	3.87	30.9
					Bush	2008	Chicago Cubs	3.87	29.0
					Bush	2008	Chicago White Sox	4.11	25.7
					Bush	2009	San Francisco Giants	3.55	26.8
					Bush	2009	Chicago White Sox	4.16	25.0
					Bush	2009	Boston Red Sox	4.35	24.7
					Bush	2009	Chicago Cubs	3.84	24.2
					Bush	2010	Chicago White Sox	4.09	26.3

Appendix A: Top 100 Pitching Staffs (1908-2013) by WAR

Era	Season	Team	Earned Run Avg	FG WAR	ERA	Season	Team	Earned Run Avg	BR WAR
Bush	2011	Phillies	3.02	26.2	Bush	2011	Philadelphia Phillies	3.02	37.3
Bush	2011	White Sox	4.1	25.3	Bush	2011	New York Yankees	3.73	29.7
Bush	2012	Tigers	3.77	25.1	Bush	2012	Cincinnati Reds	3.34	26.9
Bush	2012	Rangers	4.02	23.2	Bush	2012	Tampa Bay Rays	3.19	25.3
Bush	2013	Tigers	3.61	29.6	Bush	2012	Detroit Tigers	3.77	24.4
Bush	2013	Rangers	3.63	23.8	Bush	2013	Detroit Tigers	3.61	28.9

Note: BR WAR - Baseball Reference; FG WAR - Fangraphs. More commonly known as rWAR; fWAR

Appendix B: Baseball Reference v. Fangraphs WAR (1998-2013)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
1998	ANA	18.3	-6.6	12.2	26.1	38.3	8.2	16.4	24.6	87.8	73.4	85	Reference
1998	ARI	9.1	0.9	10.1	4.9	15.0	10.4	8.8	19.2	64.6	68.0	65	Reference
1998	ATL	29.6	7.7	37.4	18.7	56.1	37.6	25.9	63.5	105.6	112.3	106	Reference
1998	BAL	26.1	-1.2	25.2	15.3	40.6	24.9	15.5	40.4	90.1	89.2	79	FG
1998	BOS	25.7	5.5	31.7	16.8	48.5	31.1	20.4	51.5	98.1	100.3	92	Reference
1998	CHC	21.3	-2.4	18.9	13.0	31.9	21.7	12.8	34.5	81.5	83.3	90	FG
1998	CHW	26.9	0.4	27.5	1.6	29.0	23.2	6	29.2	78.6	78.0	80	Reference
1998	CIN	16.4	0.1	16.9	11.6	28.6	18.3	11.4	29.7	78.1	78.5	77	Reference
1998	CLE	24.0	3.5	27.5	17.9	45.4	26.6	18.9	45.5	94.9	94.3	89	FG
1998	COL	17.2	0.4	17.8	16.0	33.8	13.7	22.2	35.9	83.3	84.7	77	Reference
1998	DET	14.0	5.4	19.5	6.4	26.0	16.6	12.5	29.1	75.5	77.9	65	Reference
1998	FLA	13.1	-2.0	11.2	-6.7	4.5	10	-2	8	54.1	56.8	54	Reference
1998	HOU	32.5	-0.7	31.7	24.6	56.3	35.1	17.3	52.4	105.9	101.2	102	FG
1998	KCR	9.9	-1.0	9.0	8.4	17.3	7.3	12.9	20.2	66.9	69.0	72	FG
1998	LAD	13.2	-2.5	10.9	18.8	29.7	12.2	12.1	24.3	79.3	73.1	83	Reference
1998	MIL	12.9	1.3	14.6	4.0	18.6	16.5	7.2	23.7	68.1	72.5	74	FG
1998	MIN	12.3	-10.1	2.2	27.3	29.5	-4.5	18.6	14.1	79.0	62.9	70	FG
1998	NYM	14.1	-0.1	14.0	21.9	36.0	17.5	12.2	29.7	85.5	78.5	88	Reference
1998	NY Yankees	36.8	2.2	39.6	23.4	63.0	36.1	21.4	57.5	112.5	106.3	114	Reference
1998	OAK	19.5	-6.5	13.2	14.0	27.2	8.6	12.8	21.4	76.7	70.2	74	Reference
1998	PHI	12.2	3.1	15.3	5.6	20.9	16	12.2	28.2	70.4	77.0	75	FG
1998	PIT	5.4	-2.2	3.3	19.5	22.7	5.6	17.3	22.9	72.3	71.7	69	FG
1998	SDP	24.5	-6.3	18.4	25.5	43.9	17	17.5	34.5	93.5	83.3	98	Reference
1998	SEA	30.3	-1.6	29.1	9.8	38.8	26	16.9	42.9	88.4	91.7	76	Reference
1998	SFG	29.9	0.6	30.4	9.8	40.2	31.3	8.1	39.4	89.7	88.2	89	Reference
1998	STL	25.1	-0.4	25.0	8.7	33.7	28.3	9.3	37.6	83.2	86.4	83	Reference
1998	TBD	5.7	8.5	14.5	14.5	29.0	13.6	12.6	26.2	78.5	75.0	63	FG
1998	TEX	30.4	1.3	32.3	9.5	41.8	27.6	20.8	48.4	91.4	97.2	88	Reference
1998	TOR	23.8	-0.1	23.8	19.6	43.5	22.1	21.1	43.2	93.0	92.0	88	FG
1998	WSN	10.4	2.6	13.2	3.7	16.9	12.5	11	23.5	66.4	72.3	65	Reference
1999	ANA	7.9	6.2	14.4	10.8	25.2	9.8	13.5	23.3	74.8	72.1	70	FG
1999	ARI	23.4	3.7	27.0	23.8	50.8	27.3	22.7	50	100.4	98.8	100	Reference
1999	ATL	21.0	3.7	24.7	23.7	48.4	23.8	27.8	51.6	98.0	100.4	103	FG
1999	BAL	29.4	3.2	32.9	10.5	43.4	28.9	9.5	38.4	93.0	87.2	78	FG
1999	BOS	20.4	3.9	24.7	24.5	49.1	24.2	26.8	51	98.7	99.8	94	Reference
1999	CHC	12.8	-2.4	10.4	0.1	10.5	10.4	8.5	18.9	60.0	67.7	67	FG
1999	CHW	18.5	-2.3	16.5	15.9	32.4	12.2	11.1	23.3	82.0	72.1	75	FG
1999	CIN	20.1	8.7	29.0	14.7	43.6	30.8	13.3	44.1	93.2	92.9	96	Reference
1999	CLE	32.8	2.8	35.6	12.6	48.2	34.4	16.4	50.8	97.8	99.6	97	Reference
1999	COL	10.3	-8.7	1.6	21.7	23.3	1.3	16	17.3	72.8	66.1	72	Reference
1999	DET	15.2	2.8	18.2	9.1	27.4	15.5	10.9	26.4	76.9	75.2	69	FG
1999	FLA	10.9	0.0	11.2	3.2	14.3	10.8	7	17.8	63.9	66.6	64	Reference
1999	HOU	20.5	2.4	23.0	22.0	45.0	27.4	26.7	54.1	94.6	102.9	97	Reference
1999	KCR	22.2	3.0	25.2	4.1	29.3	19	9.3	28.3	78.9	77.1	64	FG
1999	LAD	20.1	0.2	20.2	10.6	30.8	22.1	7.7	29.8	80.4	78.6	77	FG
1999	MIL	20.1	-3.4	16.8	6.1	22.9	18	6.8	24.8	72.4	73.6	74	FG
1999	MIN	5.2	-0.9	4.3	20.1	24.4	1.3	15.7	17	73.9	65.8	63	FG
1999	NYM	25.9	1.4	27.7	18.0	45.7	29.8	15.2	45	95.2	93.8	97	Reference
1999	NY Yankees	29.2	-2.5	27.3	25.5	52.7	25.9	20	45.9	102.3	94.7	98	FG
1999	OAK	31.7	-5.1	27.0	14.0	41.0	19.7	17.1	36.8	90.5	85.6	87	FG
1999	PHI	16.9	3.0	19.9	9.0	28.9	24.2	8.5	32.7	78.4	81.5	77	Reference
1999	PIT	14.5	0.0	14.5	13.0	27.4	14	15.9	29.9	77.0	78.7	78	FG

Appendix B: Baseball Reference v. Fangraphs WAR (1998-2013)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
1999	SDP	13.9	1.4	15.6	7.2	22.8	17.6	9	26.6	72.4	75.4	74	FG
1999	SEA	22.7	-5.6	17.4	19.0	36.4	18.3	7.8	26.1	86.0	74.9	79	FG
1999	SFG	27.7	-5.1	22.8	9.7	32.4	22.4	7.2	29.6	82.0	78.4	86	Reference
1999	STL	14.9	-0.9	14.3	7.6	21.9	17.2	12.1	29.3	71.4	78.1	75	FG
1999	TBD	14.8	-5.3	9.6	14.2	23.9	6.8	13.5	20.3	73.4	69.1	69	FG
1999	TEX	29.3	-0.7	28.7	17.7	46.4	26.3	19.4	45.7	96.0	94.5	95	FG
1999	TOR	25.7	0.4	26.2	12.6	38.8	23.7	15.9	39.6	88.4	88.4	84	Reference
1999	WSN	13.0	-3.7	9.5	9.4	18.9	7.6	18.3	25.9	68.5	74.7	68	Reference
2000	ANA	22.9	6.5	29.7	8.7	38.4	31.3	6.2	37.5	87.9	86.3	82	FG
2000	ARI	11.5	1.1	12.7	19.6	32.3	15.6	21.9	37.5	81.8	86.3	85	FG
2000	ATL	21.9	3.1	24.9	17.2	42.0	24.4	21.1	45.5	91.6	94.3	95	FG
2000	BAL	20.6	-2.1	19.0	7.8	26.7	15.3	10.3	25.6	76.3	74.4	74	FG
2000	BOS	11.9	3.6	15.7	25.4	41.1	16.4	25.1	41.5	90.6	90.3	85	FG
2000	CHC	14.6	0.0	14.7	3.5	18.2	15.8	5.2	21	67.7	69.8	65	Reference
2000	CHW	27.7	0.8	28.5	18.8	47.3	25.9	17	42.9	96.9	91.7	95	Reference
2000	CIN	17.6	3.8	21.7	15.9	37.6	24.3	12.2	36.5	87.2	85.3	85	FG
2000	CLE	32.0	-1.4	30.9	19.4	50.3	27.1	22.4	49.5	99.9	98.3	90	FG
2000	COL	15.5	4.5	20.2	18.4	38.7	15.5	22.5	38	88.2	86.8	82	FG
2000	DET	24.1	0.4	24.7	13.2	37.9	19.7	18.1	37.8	87.4	86.6	79	FG
2000	FLA	16.4	-1.7	14.8	9.4	24.3	14.6	10.8	25.4	73.8	74.2	79	FG
2000	HOU	22.9	-5.7	17.4	9.5	26.9	23.1	9.5	32.6	76.5	81.4	72	Reference
2000	KCR	19.4	4.4	23.8	6.3	30.1	17.1	10.2	27.3	79.6	76.1	77	FG
2000	LAD	22.0	0.0	22.1	16.5	38.6	23.7	10.4	34.1	88.1	82.9	86	Reference
2000	MIL	10.8	2.5	13.2	10.0	23.2	11.7	8.8	20.5	72.8	69.3	73	Reference
2000	MIN	10.5	-4.3	6.5	22.9	29.3	3.3	17.5	20.8	78.9	69.6	69	FG
2000	NYM	21.4	0.2	21.9	16.3	38.2	23.5	16.3	39.8	87.7	88.6	94	FG
2000	NYN	23.5	-2.0	21.8	18.4	40.2	20.6	17.5	38.1	89.8	86.9	87	FG
2000	OAK	29.6	-4.5	25.6	19.1	44.7	22.8	17.1	39.9	94.3	88.7	91	FG
2000	PHI	8.8	0.7	9.7	9.1	18.8	11.8	10.7	22.5	68.4	71.3	65	Reference
2000	PIT	15.6	-6.1	9.5	11.5	21.0	10.6	13	23.6	70.5	72.4	69	Reference
2000	SDP	15.5	-1.6	14.1	9.2	23.3	15.3	5.2	20.5	72.8	69.3	76	Reference
2000	SEA	30.3	2.6	33.2	12.5	45.6	28.8	15.3	44.1	95.2	92.9	91	FG
2000	SFG	34.4	-0.1	34.4	12.4	46.8	34.7	15.4	50.1	96.4	98.9	97	Reference
2000	STL	26.5	3.4	30.2	12.6	42.8	31.2	11.6	42.8	92.4	91.6	95	Reference
2000	TBD	10.0	1.2	11.1	14.0	25.0	7.4	15.2	22.6	74.6	71.4	69	FG
2000	TEX	21.6	-5.7	16.1	11.7	27.8	10.2	13.9	24.1	77.4	72.9	71	FG
2000	TOR	21.7	0.2	22.1	12.5	34.5	20.6	16.9	37.5	84.1	86.3	83	Reference
2000	WSN	9.5	-4.1	5.4	8.7	14.1	8.3	12.5	20.8	63.6	69.6	67	FG
2001	ANA	16.3	3.9	20.5	19.3	39.9	17.8	14.3	32.1	89.4	80.9	75	FG
2001	ARI	17.3	4.4	21.8	26.9	48.7	26	22.7	48.7	98.3	97.5	92	FG
2001	ATL	11.4	5.6	17.1	18.6	35.7	21	20	41	85.2	89.8	88	FG
2001	BAL	13.6	-1.1	12.9	6.0	18.9	9.3	7.3	16.6	68.4	65.4	63	FG
2001	BOS	20.1	-4.6	15.8	23.0	38.7	14.2	23.4	37.6	88.3	86.4	82	FG
2001	CHC	23.7	-2.1	22.0	15.4	37.4	20.6	20	40.6	86.9	89.4	88	Reference
2001	CHW	20.4	1.0	21.5	15.4	36.9	23	12.9	35.9	86.4	84.7	83	FG
2001	CIN	12.0	-4.6	7.7	11.8	19.5	9.4	8.9	18.3	69.1	67.1	66	FG
2001	CLE	30.5	-4.6	26.3	15.1	41.3	23.7	21.7	45.4	90.9	94.2	91	Reference
2001	COL	22.8	5.4	28.4	8.6	37.0	26.6	15.6	42.2	86.6	91.0	73	Reference
2001	DET	20.8	-3.2	17.8	5.7	23.5	11.3	7	18.3	73.0	67.1	66	FG
2001	FLA	18.1	0.7	19.0	7.7	26.6	21.2	11.4	32.6	76.2	81.4	76	Reference
2001	HOU	21.9	-1.0	21.1	18.7	39.7	23.6	15.5	39.1	89.3	87.9	93	Reference
2001	KCR	11.7	5.3	17.0	9.2	26.2	11.3	11.5	22.8	75.8	71.6	65	FG

Appendix B: Baseball Reference v. Fangraphs WAR (1998-2013)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2001	LAD	21.4	-3.8	17.7	13.4	31.1	18.2	10.9	29.1	80.6	77.9	86	Reference
2001	MIL	15.5	-1.1	14.4	7.4	21.8	14.5	5	19.5	71.3	68.3	68	FG
2001	MIN	22.8	3.1	26.2	15.2	41.4	21.8	15.8	37.6	91.0	86.4	85	FG
2001	NYM	11.7	-0.9	11.2	13.4	24.6	12.1	15.1	27.2	74.2	76.0	82	FG
2001	NYY	23.6	-5.3	18.5	26.6	45.1	17.3	25.6	42.9	94.7	91.7	95	Reference
2001	OAK	27.2	1.9	29.6	26.5	56.0	28	23.4	51.4	105.6	100.2	102	FG
2001	PHI	18.5	3.8	22.3	7.1	29.4	22.9	12.6	35.5	78.9	84.3	86	FG
2001	PIT	4.7	-0.9	4.0	6.2	10.2	6.7	8.8	15.5	59.7	64.3	62	FG
2001	SDP	24.1	-5.3	19.1	8.6	27.7	17.7	4.5	22.2	77.3	71.0	79	Reference
2001	SEA	39.9	10.2	50.6	17.1	67.6	44.4	18.3	62.7	117.2	111.5	116	Reference
2001	SFG	30.2	-0.1	30.3	11.4	41.7	30.9	15.9	46.8	91.2	95.6	90	Reference
2001	STL	22.3	5.3	27.9	13.4	41.3	31.1	9.9	41	90.9	89.8	93	Reference
2001	TBD	13.5	-2.5	11.2	5.3	16.5	6.4	8.1	14.5	66.1	63.3	62	FG
2001	TEX	30.6	-4.2	26.6	6.7	33.3	22.4	8.3	30.7	82.8	79.5	73	FG
2001	TOR	18.3	0.1	18.4	19.6	38.0	15.7	20.3	36	87.6	84.8	80	FG
2001	WSN	5.7	-5.3	0.7	11.1	11.8	1	14.7	15.7	61.3	64.5	68	FG
2002	ANA	27.2	9.3	37.0	18.3	55.2	28.8	17.7	46.5	104.8	95.3	99	FG
2002	ARI	18.1	-0.7	17.7	29.7	47.3	22.4	26.1	48.5	96.9	97.3	98	FG
2002	ATL	15.2	7.8	23.2	23.2	46.4	21.9	17.9	39.8	95.9	88.6	101	Reference
2002	BAL	14.5	4.1	18.7	10.9	29.7	13.5	7.8	21.3	79.2	70.1	67	FG
2002	BOS	27.2	5.9	33.3	19.8	53.1	24.7	27.4	52.1	102.6	100.9	93	FG
2002	CHC	18.3	-6.0	12.5	12.7	25.2	16.8	14	30.8	74.8	79.6	67	Reference
2002	CHW	26.8	1.1	28.0	8.9	36.9	21.9	14.7	36.6	86.5	85.4	81	FG
2002	CIN	13.2	-0.2	13.3	9.9	23.1	16.4	9.3	25.7	72.7	74.5	78	FG
2002	CLE	18.8	-5.1	14.0	11.7	25.6	10.6	17	27.6	75.2	76.4	74	Reference
2002	COL	12.0	3.3	15.5	2.0	17.5	9.6	11.2	20.8	67.1	69.6	73	FG
2002	DET	9.1	-4.2	5.0	6.9	11.9	-0.4	12.5	12.1	61.5	60.9	55	FG
2002	FLA	19.8	-1.6	18.5	7.4	25.9	19.9	9.1	29	75.4	77.8	79	FG
2002	HOU	16.0	-4.9	11.4	23.5	34.9	18.7	19.2	37.9	84.5	86.7	84	Reference
2002	KCR	9.5	-2.1	7.4	13.6	21.0	6.4	12.6	19	70.6	67.8	62	FG
2002	LAD	21.0	4.4	25.6	13.6	39.2	24.8	10.5	35.3	88.7	84.1	92	Reference
2002	MIL	10.0	-1.8	8.5	3.0	11.5	9.9	2.4	12.3	61.1	61.1	56	FG
2002	MIN	23.0	1.8	25.1	18.1	43.2	25.7	21.1	46.8	92.7	95.6	94	Reference
2002	NYM	16.7	-2.7	14.4	13.7	28.2	16.9	10.8	27.7	77.7	76.5	75	FG
2002	NYY	33.8	-5.9	28.2	28.3	56.5	28.3	28.9	57.2	106.0	106.0	103	FG
2002	OAK	26.3	-1.2	25.7	27.1	52.8	23.9	23.5	47.4	102.4	96.2	103	Reference
2002	PHI	26.5	2.4	29.1	3.6	32.6	22.6	11.4	34	82.2	82.8	80	Reference
2002	PIT	7.4	0.9	8.6	10.0	18.6	11.9	6.1	18	68.2	66.8	72	Reference
2002	SDP	17.9	-7.9	10.5	6.5	17.0	12.7	4.7	17.4	66.6	66.2	66	FG
2002	SEA	28.7	0.0	29.2	20.0	49.2	31.2	17.4	48.6	98.8	97.4	93	FG
2002	SFG	31.6	3.8	35.6	15.0	50.6	35.2	16.9	52.1	100.2	100.9	95	Reference
2002	STL	24.2	4.7	29.3	11.4	40.7	30.1	11.7	41.8	90.3	90.6	97	FG
2002	TBD	14.2	-0.8	13.4	1.9	15.3	11.7	4.2	15.9	64.8	64.7	55	FG
2002	TEX	25.2	-2.5	23.0	11.5	34.5	21.3	11.9	33.2	84.1	82.0	72	FG
2002	TOR	20.2	-0.7	19.5	13.7	33.2	18.1	15.4	33.5	82.7	82.3	78	FG
2002	WSN	18.0	-1.6	16.7	14.5	31.2	13.5	15.6	29.1	80.7	77.9	83	Reference
2003	ANA	18.0	1.9	20.4	13.7	34.1	20.1	12	32.1	83.6	80.9	77	FG
2003	ARI	9.8	-2.7	7.1	29.2	36.3	7.8	25.1	32.9	85.8	81.7	84	Reference
2003	ATL	32.9	3.5	36.6	9.0	45.6	35.5	14.8	50.3	95.1	99.1	101	FG
2003	BAL	16.8	0.0	16.9	14.5	31.4	15	9.3	24.3	81.0	73.1	71	FG
2003	BOS	37.2	-2.2	35.2	19.6	54.8	32.4	25.4	57.8	104.3	106.6	95	Reference
2003	CHC	14.8	-2.5	12.3	24.8	37.0	16	22.1	38.1	86.6	86.9	88	FG

Appendix B: Baseball Reference v. Fangraphs WAR (1998-2013)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2003	CHW	21.1	2.1	23.4	20.2	43.6	23	21.9	44.9	93.1	93.7	86	Reference
2003	CIN	14.4	0.5	15.1	-3.3	11.8	9.7	4.2	13.9	61.4	62.7	69	FG
2003	CLE	15.9	2.9	18.8	11.7	30.5	13.8	13.1	26.9	80.1	75.7	68	FG
2003	COL	18.9	1.0	20.0	2.5	22.5	17.4	13.2	30.6	72.1	79.4	74	Reference
2003	DET	8.1	-2.8	5.4	-1.1	4.4	-1	2.8	1.8	53.9	50.6	43	FG
2003	FLA	19.8	-1.6	18.4	19.9	38.2	22.8	19.4	42.2	87.8	91.0	91	FG
2003	HOU	20.3	6.7	27.0	14.3	41.2	25.8	16.3	42.1	90.8	90.9	87	Reference
2003	KCR	19.9	-4.9	15.3	16.3	31.5	12.5	13.5	26	81.1	74.8	83	Reference
2003	LAD	4.9	5.9	11.1	22.3	33.4	10.5	22.1	32.6	83.0	81.4	85	Reference
2003	MIL	17.2	-7.7	9.7	7.2	16.9	10.7	4.8	15.5	66.4	64.3	68	Reference
2003	MIN	25.0	-0.5	24.9	17.3	42.3	24.2	20.7	44.9	91.8	93.7	90	Reference
2003	NYM	7.1	-4.6	2.9	15.2	18.2	5.8	6.5	12.3	67.7	61.1	66	Reference
2003	NYN	35.3	-4.2	31.4	25.8	57.2	26.2	29.1	55.3	106.7	104.1	101	FG
2003	OAK	18.8	0.3	19.4	28.2	47.6	12.9	22.8	35.7	97.1	84.5	96	Reference
2003	PHI	25.8	2.1	28.0	8.9	36.9	26.1	15.5	41.6	86.4	90.4	86	Reference
2003	PIT	18.4	-1.1	17.7	9.2	26.8	20.4	8.7	29.1	76.4	77.9	75	Reference
2003	SDP	19.6	-0.2	19.7	-3.2	16.5	22.1	-0.1	22	66.1	70.8	64	Reference
2003	SEA	25.5	3.3	29.1	21.3	50.5	31	15.5	46.5	100.0	95.3	93	FG
2003	SFG	19.9	3.6	23.6	16.4	40.0	28.2	15.5	43.7	89.6	92.5	100	FG
2003	STL	30.9	-1.8	30.1	5.8	35.9	34.3	5.7	40	85.4	88.8	85	Reference
2003	TBD	18.2	2.2	20.8	5.7	26.5	17.4	4.7	22.1	76.1	70.9	63	FG
2003	TEX	19.1	5.4	24.8	-0.2	24.7	20.2	12.4	32.6	74.2	81.4	71	Reference
2003	TOR	27.9	-3.8	24.4	17.5	41.9	18.9	17.5	36.4	91.4	85.2	86	FG
2003	WSN	8.8	-0.9	8.3	21.5	29.8	10.5	15.2	25.7	79.3	74.5	83	Reference
2004	ANA	24.4	0.1	24.5	19.1	43.5	24.7	20.9	45.6	93.1	94.4	92	Reference
2004	ARI	0.5	-0.8	-0.2	5.9	5.7	-0.2	10.4	10.2	55.2	59.0	51	Reference
2004	ATL	22.9	4.1	27.2	14.9	42.0	28.8	14.6	43.4	91.6	92.2	96	FG
2004	BAL	26.2	-1.8	24.6	14.1	38.7	21.8	14.7	36.5	88.3	85.3	78	FG
2004	BOS	30.3	-0.4	30.1	24.4	54.5	24.3	26.5	50.8	104.1	99.6	98	FG
2004	CHC	21.8	-1.8	20.1	25.5	45.6	25.6	19.7	45.3	95.2	94.1	89	FG
2004	CHW	22.9	2.5	25.6	10.4	36.0	23.4	13	36.4	85.6	85.2	83	FG
2004	CIN	18.3	0.4	18.9	-5.8	13.1	15.3	2	17.3	62.7	66.1	76	FG
2004	CLE	31.7	0.0	31.9	4.8	36.6	27.5	12	39.5	86.2	88.3	80	Reference
2004	COL	18.7	-3.0	16.1	9.1	25.2	14.5	9.8	24.3	74.8	73.1	68	FG
2004	DET	27.7	-0.9	26.8	8.1	34.9	21.2	11.7	32.9	84.4	81.7	72	FG
2004	FLA	18.0	0.9	19.1	11.5	30.5	18	13.3	31.3	80.1	80.1	83	Reference
2004	HOU	22.4	2.8	25.4	14.7	40.2	24.2	19.1	43.3	89.7	92.1	92	FG
2004	KCR	10.1	-0.4	9.9	6.7	16.6	0.9	13.6	14.5	66.1	63.3	58	FG
2004	LAD	22.7	5.2	28.2	11.9	40.1	27.8	11.4	39.2	89.7	88.0	93	Reference
2004	MIL	8.9	-2.1	7.0	14.7	21.8	10	16.7	26.7	71.3	75.5	67	Reference
2004	MIN	17.2	1.1	18.3	27.6	45.9	16.4	27.2	43.6	95.4	92.4	92	FG
2004	NYM	11.9	-4.3	8.0	18.0	26.0	11.8	9.6	21.4	75.6	70.2	71	FG
2004	NYN	32.4	-6.4	25.9	19.9	45.8	22.5	20	42.5	95.3	91.3	101	Reference
2004	OAK	23.2	-0.8	22.6	21.7	44.3	20.2	19.8	40	93.8	88.8	91	FG
2004	PHI	23.2	1.4	24.8	9.9	34.6	26.1	11	37.1	84.2	85.9	86	FG
2004	PIT	11.1	-2.7	8.8	14.9	23.7	7.8	14.6	22.4	73.3	71.2	72	FG
2004	SDP	27.8	-1.4	26.8	12.1	38.9	25.5	10.4	35.9	88.4	84.7	87	Reference
2004	SEA	15.1	2.9	18.2	10.5	28.7	17.5	9.3	26.8	78.2	75.6	63	FG
2004	SFG	24.6	-5.1	19.8	16.8	36.5	27.9	12.6	40.5	86.1	89.3	91	FG
2004	STL	28.8	2.5	31.9	16.4	48.3	33.8	13.9	47.7	97.8	96.5	105	Reference
2004	TBD	15.4	0.8	16.5	7.9	24.3	15.9	9.3	25.2	73.9	74.0	70	Reference
2004	TEX	17.5	-2.2	15.7	24.7	40.4	17.6	19.9	37.5	89.9	86.3	89	Reference

Appendix B: Baseball Reference v. Fangraphs WAR (1998-2013)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2004	TOR	11.3	5.4	16.8	10.7	27.5	13.1	14.4	27.5	77.1	76.3	67	FG
2004	WSN	3.6	4.0	8.0	9.1	17.2	5.8	8.3	14.1	66.7	62.9	67	Reference
2005	ANA	19.4	4.2	23.8	22.5	46.3	20.2	23.3	43.5	95.8	92.3	95	Reference
2005	ARI	16.6	-1.5	15.4	4.0	19.5	12.9	11.1	24	69.0	72.8	77	FG
2005	ATL	22.0	6.0	28.0	12.4	40.4	29.8	12.4	42.2	90.0	91.0	90	Reference
2005	BAL	21.4	2.4	24.2	8.4	32.6	19.2	12.3	31.5	82.2	80.3	74	FG
2005	BOS	33.0	-2.5	30.9	17.1	48.0	26.6	20.3	46.9	97.6	95.7	95	FG
2005	CHC	17.8	0.4	18.2	17.7	35.8	21.4	13.9	35.3	85.4	84.1	79	FG
2005	CHW	16.0	4.0	20.3	26.0	46.2	18.7	23.5	42.2	95.8	91.0	99	Reference
2005	CIN	26.4	-4.7	21.8	1.5	23.3	22.6	4	26.6	72.8	75.4	73	Reference
2005	CLE	31.3	5.0	36.5	16.4	52.8	31.3	21.9	53.2	102.4	102.0	93	FG
2005	COL	13.0	-1.6	11.4	7.4	18.8	10.9	12.2	23.1	68.4	71.9	67	Reference
2005	DET	21.2	2.7	23.9	6.0	30.0	20.6	10.9	31.5	79.5	80.3	71	Reference
2005	FLA	22.4	-7.5	15.3	16.1	31.4	18.1	18.3	36.4	80.9	85.2	83	Reference
2005	HOU	13.2	4.5	18.3	22.8	41.1	17.7	19.9	37.6	90.6	86.4	89	Reference
2005	KCR	14.4	-11.9	2.9	6.1	9.0	2.4	10.4	12.8	58.6	61.6	56	Reference
2005	LAD	12.8	-0.1	13.2	4.2	17.4	13.5	8	21.5	66.9	70.3	71	FG
2005	MIL	17.5	-1.0	16.6	17.7	34.3	20.2	14.1	34.3	83.9	83.1	81	FG
2005	MIN	10.2	3.3	13.5	23.6	37.1	14.5	22.9	37.4	86.7	86.2	83	FG
2005	NYM	20.5	-2.8	18.0	22.4	40.3	17.8	15.1	32.9	89.9	81.7	83	FG
2005	NY Yankees	37.3	-11.1	26.4	22.0	48.4	17.3	16.9	34.2	97.9	83.0	95	Reference
2005	OAK	20.6	3.6	24.6	22.1	46.7	22.7	18.7	41.4	96.3	90.2	88	FG
2005	PHI	21.0	8.9	30.2	5.6	35.8	27.9	13.9	41.8	85.3	90.6	88	FG
2005	PIT	14.7	1.3	16.2	7.5	23.7	13.1	5.8	18.9	73.2	67.7	67	FG
2005	SDP	20.7	-4.4	16.7	10.0	26.7	19.8	12.4	32.2	76.3	81.0	82	FG
2005	SEA	16.0	-0.4	15.6	11.9	27.6	13	9.7	22.7	77.1	71.5	69	FG
2005	SFG	9.2	-3.1	6.5	13.9	20.4	13.5	11.9	25.4	70.0	74.2	75	FG
2005	STL	23.6	5.9	30.0	17.3	47.3	27.8	13.3	41.1	96.9	89.9	100	Reference
2005	TBD	22.8	-0.7	22.4	-1.2	21.2	20.2	5.9	26.1	70.7	74.9	67	Reference
2005	TEX	26.6	-4.6	22.2	12.6	34.7	21	18.2	39.2	84.3	88.0	79	Reference
2005	TOR	17.7	5.9	24.0	17.1	41.1	18.5	16.6	35.1	90.6	83.9	80	FG
2005	WSN	11.0	-0.4	10.7	19.3	30.0	17.2	12.1	29.3	79.5	78.1	81	Reference
2006	ANA	18.4	-0.1	18.7	22.7	41.3	17.1	23.8	40.9	90.9	89.7	89	FG
2006	ARI	13.3	0.0	13.5	17.0	30.4	11.3	18.1	29.4	80.0	78.2	76	FG
2006	ATL	22.9	-0.9	22.1	10.6	32.7	23.9	9.4	33.3	82.3	82.1	79	FG
2006	BAL	21.4	-1.2	20.8	5.5	26.2	16.9	7.9	24.8	75.8	73.6	70	FG
2006	BOS	21.4	-2.8	18.7	18.9	37.6	15.8	20	35.8	87.2	84.6	86	Reference
2006	CHC	11.6	-1.1	10.6	9.6	20.2	14	9.7	23.7	69.8	72.5	66	Reference
2006	CHW	23.9	-3.7	20.6	21.6	42.2	18.6	20.1	38.7	91.8	87.5	90	Reference
2006	CIN	15.8	-4.4	11.4	18.3	29.7	19	11.9	30.9	79.3	79.7	80	FG
2006	CLE	28.8	-2.6	26.3	14.6	40.9	20.8	19.2	40	90.4	88.8	78	FG
2006	COL	14.2	1.8	16.1	15.9	32.0	13.2	19	32.2	81.5	81.0	76	FG
2006	DET	22.0	3.8	26.0	21.9	47.9	21.9	20.3	42.2	97.5	91.0	95	Reference
2006	FLA	20.6	-3.0	18.2	14.1	32.2	19.8	10	29.8	81.8	78.6	78	FG
2006	HOU	13.0	4.4	17.6	14.4	32.0	19.2	16.1	35.3	81.5	84.1	82	Reference
2006	KCR	15.2	2.6	18.2	-3.8	14.4	18.6	3.8	22.4	63.9	71.2	62	Reference
2006	LAD	22.5	-2.6	20.1	18.1	38.2	21.2	17	38.2	87.7	87.0	88	Reference
2006	MIL	13.6	0.9	14.6	5.2	19.9	16.5	14.5	31	69.4	79.8	75	FG
2006	MIN	22.8	1.1	24.2	23.0	47.1	23.5	23.5	47	96.7	95.8	96	FG
2006	NYM	23.0	3.4	26.5	14.4	40.9	27.9	13.2	41.1	90.5	89.9	97	Reference
2006	NY Yankees	34.0	-5.4	28.8	22.4	51.2	24	19.3	43.3	100.8	92.1	97	Reference
2006	OAK	19.6	0.0	20.0	18.5	38.6	16.8	17.7	34.5	88.1	83.3	93	Reference

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Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2006	PHI	23.2	-2.1	21.6	16.4	37.9	25	12.1	37.1	87.5	85.9	85	FG
2006	PIT	11.5	-4.5	7.3	14.1	21.3	8.4	10.5	18.9	70.9	67.7	67	FG
2006	SDP	23.7	4.4	28.2	13.9	42.1	26.7	11.3	38	91.6	86.8	88	FG
2006	SEA	19.1	4.7	24.1	9.0	33.0	19.3	13.8	33.1	82.6	81.9	78	FG
2006	SFG	12.7	3.1	16.2	7.2	23.3	15.7	13.1	28.8	72.9	77.6	76	FG
2006	STL	19.8	4.6	24.9	6.1	31.0	23.2	5.6	28.8	80.5	77.6	83	Reference
2006	TBD	12.7	-3.5	9.4	11.4	20.8	10.2	9.6	19.8	70.3	68.6	61	FG
2006	TEX	21.9	0.9	22.9	12.8	35.7	15.6	19.4	35	85.3	83.8	80	FG
2006	TOR	27.2	6.1	33.2	12.1	45.3	26.5	17.4	43.9	94.8	92.7	87	FG
2006	WSN	20.9	-3.8	17.3	4.3	21.6	19.2	2.3	21.5	71.1	70.3	71	Reference
2007	ANA	21.3	0.4	22.0	19.8	41.8	22.1	22.6	44.7	91.4	93.5	94	FG
2007	ARI	7.4	3.4	10.9	18.9	29.8	10	16	26	79.4	74.8	90	Reference
2007	ATL	23.5	5.3	28.8	10.9	39.6	27	11.1	38.1	89.2	86.9	84	FG
2007	BAL	17.6	0.0	17.9	9.3	27.2	15.6	11.2	26.8	76.7	75.6	69	FG
2007	BOS	28.2	0.8	29.3	30.9	60.2	29.9	24.6	54.5	109.8	103.3	96	FG
2007	CHC	14.7	2.8	17.8	19.5	37.4	20.8	17.5	38.3	86.9	87.1	85	Reference
2007	CHW	8.7	-6.6	2.5	19.8	22.3	3.6	18.5	22.1	71.9	70.9	72	Reference
2007	CIN	17.2	-5.1	12.2	12.1	24.3	15.6	12.7	28.3	73.8	77.1	72	Reference
2007	CLE	23.0	0.0	23.3	23.4	46.7	20.6	23.1	43.7	96.2	92.5	96	Reference
2007	COL	22.0	1.4	23.6	18.0	41.6	23	17.2	40.2	91.2	89.0	90	FG
2007	DET	28.3	3.5	32.1	8.5	40.6	31	13.6	44.6	90.1	93.4	88	Reference
2007	FLA	24.3	-5.8	18.7	4.6	23.4	20.1	7	27.1	72.9	75.9	71	Reference
2007	HOU	13.5	-5.4	8.4	15.2	23.5	12.7	7.7	20.4	73.1	69.2	73	Reference
2007	KCR	12.1	3.8	16.2	12.5	28.8	13.2	16	29.2	78.3	78.0	69	FG
2007	LAD	14.2	-0.7	13.8	17.9	31.8	16.4	17.2	33.6	81.3	82.4	82	FG
2007	MIL	22.2	-1.5	21.0	11.5	32.5	25.1	15.9	41	82.1	89.8	83	Reference
2007	MIN	18.7	1.4	20.2	15.4	35.6	14.4	16.8	31.2	85.2	80.0	79	FG
2007	NYM	24.7	2.9	27.9	10.8	38.6	27.5	11.4	38.9	88.2	87.7	88	Reference
2007	NYN	40.0	-1.4	38.7	15.9	54.6	33.7	15.6	49.3	104.2	98.1	94	FG
2007	OAK	23.6	1.9	25.7	10.2	35.9	17.2	18.1	35.3	85.4	84.1	76	FG
2007	PHI	29.2	3.8	33.2	4.8	38.1	34.5	8.2	42.7	87.6	91.5	89	Reference
2007	PIT	13.8	-2.3	11.7	6.0	17.6	12.5	8.8	21.3	67.2	70.1	68	Reference
2007	SDP	19.7	-0.6	19.3	18.4	37.6	15.4	16.6	32	87.2	80.8	89	Reference
2007	SEA	25.1	-5.2	20.2	14.5	34.7	15.4	15.6	31	84.2	79.8	88	Reference
2007	SFG	6.5	0.8	7.8	18.3	26.1	11.4	15.6	27	75.7	75.8	71	Reference
2007	STL	15.6	3.2	19.1	3.0	22.0	18.6	7.5	26.1	71.6	74.9	78	FG
2007	TBD	26.1	-6.6	19.7	6.3	26.0	17.3	11.4	28.7	75.5	77.5	66	Reference
2007	TEX	20.0	-1.0	19.5	8.3	27.8	15.3	12	27.3	77.3	76.1	75	FG
2007	TOR	16.7	8.7	25.7	15.6	41.4	16.2	19	35.2	90.9	84.0	83	FG
2007	WSN	12.8	-2.1	11.1	9.9	21.0	14.1	1.8	15.9	70.5	64.7	73	Reference
2008	ANA	17.5	1.6	19.4	21.6	40.9	17.5	20.3	37.8	90.5	86.6	100	Reference
2008	ARI	11.0	-3.6	7.6	23.5	31.2	8.3	23.4	31.7	80.7	80.5	82	Reference
2008	ATL	21.8	2.6	24.6	4.5	29.0	21.6	9	30.6	78.6	79.4	72	Reference
2008	BAL	21.1	0.9	21.9	2.5	24.4	18.2	5.1	23.3	73.9	72.1	68	FG
2008	BOS	27.7	2.7	30.7	23.5	54.2	33.6	24.3	57.9	103.7	106.7	95	Reference
2008	CHC	24.1	-3.0	21.3	29.0	50.3	30.3	20.5	50.8	99.8	99.6	97	FG
2008	CHW	21.8	-2.4	19.5	25.7	45.2	16	25	41	94.8	89.8	89	FG
2008	CIN	11.4	-2.8	8.8	13.3	22.1	9.4	10.3	19.7	71.6	68.5	74	Reference
2008	CLE	25.7	3.2	29.3	9.5	38.7	23.8	15.7	39.5	88.3	88.3	81	FG
2008	COL	15.8	-3.5	12.3	14.3	26.6	9.5	18.3	27.8	76.2	76.6	74	Reference
2008	DET	25.6	-5.0	20.9	10.2	31.2	17.9	9.7	27.6	80.7	76.4	74	FG
2008	FLA	17.8	0.3	18.6	9.7	28.2	20.2	12.6	32.8	77.8	81.6	84	FG

Appendix B: Baseball Reference v. Fangraphs WAR (1998-2013)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2008	HOU	15.7	0.8	16.8	10.2	26.9	23.9	7.1	31	76.5	79.8	86	FG
2008	KCR	14.3	-6.5	8.1	21.8	29.9	6.8	20.9	27.7	79.4	76.5	75	FG
2008	LAD	17.1	-1.4	15.6	20.9	36.4	14	20.5	34.5	86.0	83.3	84	FG
2008	MIL	22.7	3.6	26.2	14.8	41.0	25.3	10.7	36	90.6	84.8	90	Reference
2008	MIN	24.5	-2.3	22.5	15.4	37.8	18.7	16.5	35.2	87.4	84.0	88	Reference
2008	NYM	23.9	0.9	25.3	13.8	39.1	28.6	10.2	38.8	88.7	87.6	89	Reference
2008	NY Yankees	24.1	-3.2	21.1	22.7	43.8	18.4	22	40.4	93.3	89.2	89	FG
2008	OAK	13.6	4.9	18.9	13.3	32.2	13.7	16	29.7	81.8	78.5	75	FG
2008	PHI	21.9	7.0	29.1	13.2	42.3	31.1	14.1	45.2	91.9	94.0	92	Reference
2008	PIT	16.0	-2.0	14.1	1.4	15.4	11.9	2.2	14.1	65.0	62.9	67	Reference
2008	SDP	19.2	-0.6	18.6	2.4	21.0	15.3	5.8	21.1	70.6	69.9	63	FG
2008	SEA	14.9	2.4	17.5	3.3	20.7	9.5	8.7	18.2	70.3	67.0	61	FG
2008	SFG	6.3	-2.6	3.9	14.9	18.8	11.4	14.4	25.8	68.4	74.6	72	FG
2008	STL	26.6	5.6	32.5	8.5	41.0	33.2	8.5	41.7	90.5	90.5	86	FG
2008	TBD	24.9	2.6	28.3	22.1	50.4	30.4	17.6	48	99.9	96.8	97	FG
2008	TEX	35.4	-3.9	32.0	-3.9	28.1	25.4	10	35.4	77.6	84.2	79	Reference
2008	TOR	18.7	4.6	23.8	23.0	46.8	16.2	24.6	40.8	96.4	89.6	86	FG
2008	WSN	9.5	-1.2	8.5	5.3	13.8	9.6	5.5	15.1	63.4	63.9	59	Reference
2009	ANA	30.3	7.0	37.5	6.2	43.8	28	15.4	43.4	93.3	92.2	97	Reference
2009	ARI	15.4	0.6	16.4	10.3	26.7	15	16.1	31.1	76.2	79.9	70	Reference
2009	ATL	19.4	-0.9	18.8	24.0	42.8	19.7	21.2	40.9	92.4	89.7	86	FG
2009	BAL	15.6	-1.9	13.8	9.0	22.7	10.4	8.8	19.2	72.3	68.0	64	FG
2009	BOS	28.5	-1.6	26.9	24.7	51.7	24.8	24.5	49.3	101.2	98.1	95	FG
2009	CHC	12.6	-2.2	10.8	24.2	35.0	15.9	17.9	33.8	84.5	82.6	83	FG
2009	CHW	11.9	-2.7	9.6	25.0	34.6	8.3	21.8	30.1	84.1	78.9	79	FG
2009	CIN	11.7	2.3	14.3	11.0	25.3	16.3	8.1	24.4	74.8	73.2	78	Reference
2009	CLE	25.7	-2.2	23.6	2.5	26.1	16	10.1	26.1	75.7	74.9	65	FG
2009	COL	19.1	0.8	20.4	19.8	40.2	18.9	22.9	41.8	89.7	90.6	92	FG
2009	DET	16.3	2.7	19.7	14.2	33.9	17.5	16.3	33.8	83.5	82.6	86	Reference
2009	FLA	21.3	-5.5	16.4	16.3	32.6	19.2	14.2	33.4	82.2	82.2	87	FG
2009	HOU	13.3	0.2	13.8	6.2	19.9	14.3	8.1	22.4	69.5	71.2	74	FG
2009	KCR	13.8	-10.3	3.5	16.5	20.1	2.4	18.1	20.5	69.6	69.3	65	FG
2009	LAD	27.7	1.8	29.6	19.3	48.9	26.1	18	44.1	98.5	92.9	95	FG
2009	MIL	24.6	0.5	25.3	0.2	25.5	24.9	2.2	27.1	75.1	75.9	80	FG
2009	MIN	26.4	-4.3	22.1	18.2	40.3	21.5	16.2	37.7	89.9	86.5	87	FG
2009	NYM	18.7	-0.1	19.0	6.6	25.6	15.7	5.8	21.5	75.1	70.3	70	FG
2009	NY Yankees	36.1	-2.4	33.8	22.9	56.8	33.1	20.5	53.6	106.3	102.4	103	FG
2009	OAK	16.6	-3.1	13.8	17.4	31.2	15.7	17.7	33.4	80.7	82.2	75	Reference
2009	PHI	26.7	2.0	28.9	11.8	40.7	30.7	11.5	42.2	90.3	91.0	93	FG
2009	PIT	11.8	3.1	15.1	2.1	17.3	15	6.6	21.6	66.8	70.4	62	Reference
2009	SDP	16.3	-1.3	15.4	2.5	18.0	16.2	5.1	21.3	67.5	70.1	75	FG
2009	SEA	13.5	7.5	21.2	13.0	34.2	19.9	14.4	34.3	83.8	83.1	85	Reference
2009	SFG	7.2	1.1	8.7	26.8	35.5	16.3	18.9	35.2	85.0	84.0	88	Reference
2009	STL	21.7	2.8	24.7	16.7	41.4	23.1	17.4	40.5	90.9	89.3	91	Reference
2009	TBD	27.7	4.5	32.2	10.3	42.5	32.9	13.3	46.2	92.1	95.0	84	Reference
2009	TEX	18.6	0.6	19.2	20.1	39.4	17.2	19.2	36.4	88.9	85.2	87	FG
2009	TOR	24.2	5.9	30.2	10.5	40.7	18.9	17.1	36	90.2	84.8	75	FG
2009	WSN	17.9	-5.2	13.2	1.9	15.1	15.9	2.3	18.2	64.6	67.0	59	Reference
2010	ANA	17.8	-1.5	16.6	15.9	32.4	13.9	12	25.9	82.0	74.7	80	Reference
2010	ARI	14.7	2.5	17.5	0.1	17.6	21.3	7.1	28.4	67.1	77.2	65	Reference
2010	ATL	23.4	1.1	24.8	16.6	41.4	21.6	19.2	40.8	91.0	89.6	91	Reference
2010	BAL	14.6	-2.4	12.2	13.8	26.0	8.2	9.9	18.1	75.6	66.9	66	FG

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Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2010	BOS	29.3	3.2	32.6	14.8	47.4	24.2	19.8	44	96.9	92.8	89	FG
2010	CHC	14.2	-4.5	10.0	15.9	25.9	14.7	15.4	30.1	75.5	78.9	75	Reference
2010	CHW	23.0	-6.3	17.1	26.3	43.4	15.2	23.6	38.8	92.9	87.6	88	FG
2010	CIN	28.1	3.4	31.6	8.1	39.7	33.9	14	47.9	89.3	96.7	91	Reference
2010	CLE	19.8	-1.7	18.4	7.2	25.6	11.9	6.2	18.1	75.1	66.9	69	FG
2010	COL	16.1	3.0	19.5	17.6	37.1	14.3	25.6	39.9	86.6	88.7	83	Reference
2010	DET	24.8	2.5	27.6	8.9	36.5	24.5	16.4	40.9	86.0	89.7	81	Reference
2010	FLA	16.0	-2.3	13.9	16.8	30.7	17.1	16.9	34	80.2	82.8	80	Reference
2010	HOU	6.9	-3.0	4.1	11.1	15.2	6.1	14.8	20.9	64.8	69.7	76	FG
2010	KCR	20.7	-10.4	10.6	12.9	23.6	11.6	9.2	20.8	73.1	69.6	67	FG
2010	LAD	16.2	-6.5	9.9	16.9	26.9	13.6	15.2	28.8	76.4	77.6	80	FG
2010	MIL	26.0	0.9	27.0	-1.7	25.3	26.5	10.4	36.9	74.9	85.7	77	Reference
2010	MIN	27.9	-1.3	26.7	20.5	47.2	27.8	18.5	46.3	96.8	95.1	94	FG
2010	NYM	14.4	2.8	17.2	13.7	30.9	17.1	11.9	29	80.4	77.8	79	FG
2010	NY Yankees	30.3	4.8	35.6	14.1	49.7	31.2	13.5	44.7	99.2	93.5	95	FG
2010	OAK	19.5	6.0	25.9	16.3	42.2	19.9	12.4	32.3	91.8	81.1	81	FG
2010	PHI	23.2	-0.6	22.7	21.8	44.5	23.8	16.2	40	94.1	88.8	97	Reference
2010	PIT	7.9	-8.5	-0.4	4.4	4.0	4.5	4	8.5	53.6	57.3	57	FG
2010	SDP	16.4	6.6	23.3	12.8	36.1	22.9	14.5	37.4	85.6	86.2	90	FG
2010	SEA	7.5	1.4	9.2	12.5	21.7	3.8	10	13.8	71.2	62.6	61	FG
2010	SFG	19.4	3.0	22.7	24.0	46.7	26.7	18.1	44.8	96.2	93.6	92	FG
2010	STL	22.7	3.2	26.3	14.5	40.7	23.7	13.9	37.6	90.3	86.4	86	FG
2010	TBD	30.4	5.9	36.4	13.4	49.8	30.6	13.1	43.7	99.4	92.5	96	Reference
2010	TEX	22.5	-0.5	22.1	19.3	41.4	21.7	20.3	42	91.0	90.8	90	FG
2010	TOR	23.5	0.3	23.9	14.7	38.5	21.7	16.1	37.8	88.1	86.6	85	FG
2010	WSN	13.1	-0.9	12.9	7.0	19.9	15.8	11.9	27.7	69.4	76.5	69	Reference
2011	ANA	25.1	2.9	28.2	15.7	43.9	23	16.3	39.3	93.4	88.1	86	FG
2011	ARI	20.3	6.5	27.0	8.0	35.0	28.2	14.9	43.1	84.5	91.9	94	FG
2011	ATL	12.6	2.1	15.0	18.0	33.0	14.6	17.9	32.5	82.6	81.3	89	Reference
2011	BAL	18.4	-2.6	15.9	5.2	21.1	11	7.2	18.2	70.6	67.0	69	Reference
2011	BOS	33.7	2.8	36.7	13.8	50.5	35.6	19.6	55.2	100.1	104.0	90	Reference
2011	CHC	17.0	-3.5	14.0	7.5	21.5	14.9	11.9	26.8	71.1	75.6	71	Reference
2011	CHW	11.6	-2.2	9.8	21.0	30.9	9.5	25.3	34.8	80.4	83.6	79	Reference
2011	CIN	21.4	4.3	25.9	5.8	31.7	28.6	4.8	33.4	81.3	82.2	79	Reference
2011	CLE	20.7	-2.6	18.5	10.7	29.3	13.4	12.6	26	78.8	74.8	80	Reference
2011	COL	13.1	3.0	16.4	9.4	25.7	13.9	16.2	30.1	75.3	78.9	73	Reference
2011	DET	27.6	0.8	28.9	12.9	41.8	23.7	18.9	42.6	91.3	91.4	95	FG
2011	FLA	16.3	-6.9	9.6	17.8	27.4	14.8	14	28.8	77.0	77.6	72	Reference
2011	HOU	13.3	2.6	16.2	-2.8	13.4	13.3	3.2	16.5	62.9	65.3	56	Reference
2011	KCR	25.0	1.5	26.6	8.0	34.6	20.3	13.2	33.5	84.1	82.3	71	FG
2011	LAD	18.0	1.3	19.6	14.5	34.1	21.1	14.6	35.7	83.6	84.5	82	Reference
2011	MIL	23.5	2.1	25.9	15.4	41.3	26.7	18.5	45.2	90.8	94.0	96	FG
2011	MIN	10.1	-7.7	2.8	10.4	13.3	3.8	10.9	14.7	62.8	63.5	63	Reference
2011	NYM	25.3	-6.1	19.6	7.4	27.0	18.9	7.7	26.6	76.5	75.4	77	Reference
2011	NY Yankees	29.3	-0.3	29.3	29.7	59.0	32.9	22	54.9	108.5	103.7	97	FG
2011	OAK	13.4	-2.2	11.4	19.7	31.1	8.1	17.8	25.9	80.6	74.7	74	FG
2011	PHI	21.9	-5.3	16.7	37.3	53.9	20.2	26.2	46.4	103.5	95.2	102	Reference
2011	PIT	12.3	-2.7	9.9	11.4	21.3	9.9	4	13.9	70.8	62.7	72	Reference
2011	SDP	11.6	4.4	16.3	8.8	25.1	17.4	8.5	25.9	74.7	74.7	71	Reference
2011	SEA	10.5	0.4	11.2	13.6	24.8	5.1	14.4	19.5	74.3	68.3	67	FG
2011	SFG	15.1	1.0	16.5	18.0	34.4	15.8	17.6	33.4	84.0	82.2	86	Reference
2011	STL	29.2	-2.9	26.7	9.3	36.0	29.7	11.8	41.5	85.5	90.3	90	FG

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Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team_ BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2011	TBD	27.8	8.2	36.0	13.3	49.3	28.8	14.1	42.9	98.9	91.7	91	FG
2011	TEX	32.7	1.1	34.1	20.8	54.9	35.3	21.3	56.6	104.5	105.4	96	Reference
2011	TOR	19.8	-0.5	19.4	15.6	35.0	15.4	12.2	27.6	84.6	76.4	81	Reference
2011	WSN	14.1	0.8	15.4	13.9	29.3	15.7	12.3	28	78.8	76.8	80	Reference
2012	ANA	35.1	4.6	39.9	4.8	44.7	37.8	7.9	45.7	94.3	94.5	89	Reference
2012	ARI	19.2	2.0	21.4	14.4	35.8	21.1	18.3	39.4	85.3	88.2	81	Reference
2012	ATL	15.5	9.6	25.3	13.6	39.0	26.1	16.4	42.5	88.5	91.3	94	FG
2012	BAL	18.0	-3.1	15.0	23.7	38.7	13.3	15.3	28.6	88.2	77.4	93	Reference
2012	BOS	19.0	3.7	22.9	3.7	26.6	19.2	11.6	30.8	76.1	79.6	69	Reference
2012	CHC	9.6	1.2	11.3	2.3	13.7	11.2	6.3	17.5	63.2	66.3	61	Reference
2012	CHW	21.3	-0.6	21.0	23.4	44.4	19.2	16.2	35.4	94.0	84.2	85	FG
2012	CIN	16.2	2.2	18.6	26.9	45.5	22.2	19.9	42.1	95.0	90.9	97	Reference
2012	CLE	22.6	-5.2	17.6	1.2	18.7	9.9	7.3	17.2	68.3	66.0	68	Reference
2012	COL	16.9	-7.4	9.8	14.0	23.7	10.7	12.3	23	73.3	71.8	64	FG
2012	DET	21.3	-4.7	17.0	24.4	41.4	18.6	25.1	43.7	90.9	92.5	88	Reference
2012	FLA	9.4	-4.5	5.3	12.7	18.0	10.6	15.2	25.8	67.5	74.6	69	Reference
2012	HOU	7.7	-4.8	3.4	7.0	10.3	5.9	7.7	13.6	59.9	62.4	55	Reference
2012	KCR	17.3	0.3	17.5	12.6	30.1	14	15.2	29.2	79.7	78.0	72	FG
2012	LAD	13.2	0.5	14.1	21.0	35.1	16.3	16.4	32.7	84.7	81.5	86	Reference
2012	MIL	22.8	1.7	24.8	6.7	31.5	26.9	16.9	43.8	81.1	92.6	83	Reference
2012	MIN	22.0	2.7	24.8	-1.1	23.7	16.7	5.2	21.9	73.2	70.7	66	FG
2012	NYM	16.6	-3.4	13.6	10.5	24.1	14.6	11.7	26.3	73.6	75.1	74	Reference
2012	NYY	31.7	-2.2	29.9	22.5	52.4	28.6	20	48.6	102.0	97.4	95	FG
2012	OAK	23.8	0.9	24.8	23.6	48.4	20.1	17.8	37.9	98.0	86.7	94	Reference
2012	PHI	15.5	0.9	17.0	13.0	30.0	20.9	18.4	39.3	79.5	88.1	81	Reference
2012	PIT	15.3	0.1	15.9	8.4	24.3	15.1	10.4	25.5	73.8	74.3	79	FG
2012	SDP	22.2	0.1	22.8	4.6	27.5	21.1	4.4	25.5	77.0	74.3	76	Reference
2012	SEA	14.8	1.2	16.0	15.7	31.7	11.3	12.7	24	81.3	72.8	75	FG
2012	SFG	29.1	0.4	29.7	8.2	38.0	28.1	11.1	39.2	87.5	88.0	94	FG
2012	STL	28.2	1.0	29.5	13.6	43.2	28.6	17.3	45.9	92.7	94.7	88	Reference
2012	TBD	21.0	0.3	21.4	25.3	46.7	21.6	21.2	42.8	96.3	91.6	90	FG
2012	TEX	25.4	-1.5	24.2	23.7	47.9	24.5	23.3	47.8	97.4	96.6	93	FG
2012	TOR	17.9	4.0	22.1	7.1	29.2	11.6	8.5	20.1	78.8	68.9	73	FG
2012	WSN	22.1	-0.4	22.4	22.7	45.1	24.2	20	44.2	94.6	93.0	98	Reference
2013	ANA	29.5	-3.9	25.7	9.0	34.7	27.1	9.5	36.6	84.2	85.4	78	Reference
2013	ARI	18.9	7.3	26.3	4.7	31.0	22.5	10.4	32.9	80.5	81.7	81	Reference
2013	ATL	20.7	2.1	23.2	22.6	45.8	24.9	18.3	43.2	95.3	92.0	96	Reference
2013	BAL	19.1	3.3	22.6	14.1	36.7	27.3	10.9	38.2	86.3	87.0	85	Reference
2013	BOS	35.9	3.5	39.9	16.2	56.1	36.9	21.4	58.3	105.7	107.1	97	Reference
2013	CHC	13.7	2.0	15.9	10.5	26.4	17.6	9.1	26.7	76.0	75.5	66	FG
2013	CHW	5.2	-4.4	1.0	23.1	24.1	3.6	17.1	20.7	73.7	69.5	63	FG
2013	CIN	20.1	1.5	21.6	22.2	43.8	24.1	14.4	38.5	93.4	87.3	90	FG
2013	CLE	29.4	-2.4	27.2	11.9	39.0	20.7	16	36.7	88.6	85.5	92	Reference
2013	COL	16.3	-1.6	14.8	17.2	32.0	15.2	18.7	33.9	81.6	82.7	74	Reference
2013	DET	29.4	-3.4	26.1	28.9	55.0	26	29.7	55.7	104.6	104.5	93	FG
2013	FLA	0.5	-1.2	-0.4	19.0	18.6	-1.1	14.5	13.4	68.1	62.2	62	FG
2013	HOU	8.8	-3.9	5.4	3.2	8.5	1.9	2.1	4	58.1	52.8	51	FG
2013	KCR	12.8	11.1	24.1	15.1	39.2	23	19.5	42.5	88.8	91.3	86	Reference
2013	LAD	27.0	3.6	30.9	16.3	47.2	27.1	16.3	43.4	96.8	92.2	92	FG
2013	MIL	16.1	5.0	21.4	6.9	28.3	17.2	7.3	24.5	77.9	73.3	74	FG
2013	MIN	15.1	1.2	16.2	3.6	19.8	8.9	10.5	19.4	69.4	68.2	66	FG
2013	NYM	16.3	-2.1	14.6	6.3	20.9	18.6	10.8	29.4	70.5	78.2	74	Reference

Appendix B: Baseball Reference v. Fangraphs WAR (1998-2013)

Team Data		Baseball Reference (May 2014)					Fangraphs (July 2014)			Predictions+Intercept		Wins Best Predict	
Season	Team	WAR_ off	WAR_ def	hit_ WAR	pitch_ WAR	Team _BR WAR	hit WAR- FG	pitch WAR- FG	Team- FG WAR	Predict BR_Wins	Predict FG Wins	Team Wins	Better Predict?
2013	NYN	10.8	2.3	13.3	17.3	30.6	10.1	18.8	28.9	80.2	77.7	85	Reference
2013	OAK	28.3	-3.1	25.6	18.1	43.7	27.5	16.4	43.9	93.2	92.7	96	Reference
2013	PHI	14.5	-12.4	2.7	14.2	16.9	6.8	9.9	16.7	66.5	65.5	73	Reference
2013	PIT	23.8	5.3	29.8	13.1	42.8	23.1	16.1	39.2	92.4	88.0	94	Reference
2013	SDP	21.3	-2.2	20.0	3.4	23.4	18.8	4.1	22.9	73.0	71.7	76	Reference
2013	SEA	20.1	-9.3	11.1	12.0	23.1	6	15.1	21.1	72.7	69.9	71	FG
2013	SFG	25.5	-0.8	25.0	2.6	27.6	27.2	6.9	34.1	77.2	82.9	76	Reference
2013	STL	25.3	-5.4	20.4	21.5	41.9	22.5	17.5	40	91.5	88.8	97	Reference
2013	TBD	24.8	1.5	26.9	14.2	41.1	30.6	15.7	46.3	90.6	95.1	92	Reference
2013	TEX	22.1	5.7	28.0	20.2	48.2	21.3	24	45.3	97.8	94.1	91	FG
2013	TOR	20.7	1.5	22.3	8.6	30.9	15.3	12.8	28.1	80.4	76.9	74	FG
2013	WSN	17.8	-1.2	17.0	14.4	31.4	19.6	16.4	36	80.9	84.8	86	FG
											% Predict FG		52.7%
											% Reference		47.3%

Appendix C: Top Fielders by B-R WAR (1908-2013)

Era	Player	WAR_def	Era	Player	WAR_def	Era	Player	WAR_def
Taft	Art Fletcher	27.39	LBJ	Mark Belanger	32.61	Reagan	Gary Gaetti	11.12
Taft	George McBride	22.31	LBJ	Brooks Robinson	28.88	Reagan	Terry Kennedy	11
Taft	Joe Tinker	18.84	LBJ	Bert Campaneris	20.34	Reagan	Jody Davis	10.87
Taft	Rabbit Maranville	17.77	LBJ	Graig Nettles	19.38	Reagan	Barry Bonds	10.83
Taft	Roger Peckinpaugh	16.46	LBJ	Ed Brinkman	19.19	Reagan	Tim Wallach	10.79
Taft	Everett Scott	16.3	LBJ	Paul Blair	18.71	Reagan	Greg Gagne	10.61
Taft	Dave Bancroft	15.12	LBJ	Johnny Bench	17.38	Reagan	Wade Boggs	10.13
Taft	Mickey Doolin	14.68	LBJ	Dal Maxvill	15.13	Reagan	Dick Schofield	10.04
Taft	Jack Barry	12.25	LBJ	Luis Aparicio	14.75	Clinton	Ivan Rodriguez	23.16
Taft	Honus Wagner	11.91	LBJ	Gene Alley	14.62	Clinton	Andruw Jones	22.6
Taft	Ray Schalk	11.02	LBJ	Rico Petrocelli	14.27	Clinton	Rey Sanchez	20.32
Taft	Larry Gardner	10.22	LBJ	Bud Harrelson	13.61	Clinton	Omar Vizquel	16.79
Taft	Donie Bush	10.12	LBJ	Freddie Patek	13.32	Clinton	Brad Ausmus	16.16
Coolidge	Travis Jackson	22.39	LBJ	Dave Concepcion	13.25	Clinton	Kenny Lofton	15.95
Coolidge	Frankie Frisch	18.77	LBJ	Hal Lanier	12.48	Clinton	Royce Clayton	15.9
Coolidge	Hughie Critz	18.02	LBJ	Bill Russell	12.25	Clinton	Mike Bordick	15.19
Coolidge	Glenn Wright	13.52	LBJ	Bill Mazeroski	12.22	Clinton	Robin Ventura	15.08
Coolidge	Rabbit Maranville	12.98	LBJ	Randy Hundley	11.96	Clinton	Charles Johnson	13.57
Coolidge	Joe Cronin	12.65	LBJ	Leo Cardenas	11.94	Clinton	Gary Disarcina	12.4
Coolidge	Ossie Bluege	10.96	LBJ	Manny Sanguillen	11.89	Clinton	Cal Ripken	11.82
Coolidge	Sparky Adams	10.34	LBJ	Frank Duffy	11.73	Clinton	John Valentin	11.75
Coolidge	Billy Rogell	10.21	LBJ	Bobby Grich	11.66	Clinton	Scott Rolen	11.68
Coolidge	Billy Jurges	10.02	LBJ	Jerry Grote	11.65	Clinton	Jose Valentin	11.22
FDR	Marty Marion	23.64	LBJ	Aurelio Rodriguez	11.44	Clinton	Alex Rodriguez	10.91
FDR	Lou Boudreau	22.02	LBJ	Bill Freehan	11.3	Clinton	Neifi Perez	10.91
FDR	Joe Gordon	21.73	LBJ	Larry Bowa	11.01	Clinton	Alex Gonzalez	10.85
FDR	Eddie Miller	18.03	LBJ	Ken McMullen	10.42	Clinton	Dan Wilson	10.59
FDR	Luke Appling	15.87	LBJ	Clete Boyer	10.18	Clinton	Craig Counsell	10.57
FDR	Pee Wee Reese	14.94	Reagan	Ozzie Smith	37.14	Clinton	Jack Wilson	10.43
FDR	Phil Rizzuto	12.99	Reagan	Cal Ripken	22.73	Clinton	Darin Erstad	10.32
FDR	Billy Jurges	12.54	Reagan	Gary Carter	22.28	Bush	Yadier Molina	14.92
FDR	Lonny Frey	12.52	Reagan	Alan Trammell	21.82	Bush	Brendan Ryan	14.27
FDR	Bobby Doerr	12.42	Reagan	Bob Boone	20.05	Bush	Clint Barmes	14.25
FDR	Frankie Crosetti	11.75	Reagan	Ozzie Guillen	18.81	Bush	Chase Utley	13.18
FDR	Snuffy Stirnweiss	11.47	Reagan	Jim Sundberg	15.83	Bush	Adrian Beltre	13.17
FDR	Dick Bartell	10.05	Reagan	Frank White	15.78	Bush	Mark Ellis	13.03
IKE	Nellie Fox	20.33	Reagan	Buddy Bell	15.73	Bush	Troy Tulowitzki	11.91
IKE	Roy McMillan	20.17	Reagan	Garry Templeton	15.66	Bush	J. J. Hardy	11.3
IKE	Luis Aparicio	16.88	Reagan	Lou Whitaker	15.58	Bush	Russell Martin	11.18
IKE	Jim Piersall	14.98	Reagan	Tony Pena	15.34	Bush	Dustin Pedroia	10.77
IKE	Chico Carrasquel	14.51	Reagan	Willie Randolph	14.98	Bush	Carlos Gomez	10.46
IKE	Gil McDougald	14.03	Reagan	Lance Parrish	14.19	Bush	Jack Wilson	10.23
IKE	Johnny Logan	13.98	Reagan	Rick Dempsey	13.63			
IKE	Willie Mays	13.01	Reagan	Scott Fletcher	13.37			
IKE	Dick Groat	12.64	Reagan	Tony Fernandez	12.78			
IKE	Del Crandall	12	Reagan	Mike Scioscia	12.68			
IKE	Bill Mazeroski	11.68	Reagan	Jesse Barfield	12.1			
IKE	Clete Boyer	11.36	Reagan	Bucky Dent	11.99			
IKE	Ernie Banks	11	Reagan	Butch Wynegar	11.68			
IKE	Al Dark	10.96	Reagan	Terry Pendleton	11.67			
IKE	Pee Wee Reese	10.61						
IKE	Red Schoendienst	10.36						
IKE	Sherm Lollar	10.16						
IKE	Tony Kubek	10.15						

Appendix D: Negro League Title Winners (1920-1949)

Negro National League

<i>Year</i>	<i>Team</i>	<i>Wins</i>	<i>Losses</i>	<i>League</i>	<i>WS Title</i>
1920	Chicago American Giants	32	13	Y	
1921	Chicago American Giants	41	21	Y	
1922	Chicago American Giants	36	23	Y	
1923	Kansas City Monarchs	57	33	Y	
1924	Kansas City Monarchs	55	22	Y	Y
1925	Kansas City Monarchs	62	20	Y	N
1926	Chicago American Giants	57	23	Y	Y
1927	Chicago American Giants	32	14	Y	Y
1928	St. Louis Stars	63	26	Y	
1929	Kansas City Monarchs	62	17	Y	
1930	St. Louis Stars	63	22	Y	
1931	St. Louis Stars			Y	
1932	<i>-----DID NOT PLAY -----</i>				
1933	Chicago American Giants	21	7	Y	
1934	Philadelphia Stars	23	13	Y	
1935	Pittsburgh Crawfords	39	15	Y	
1936	Pittsburgh Crawfords	36	24	Y	
1937	Pittsburgh Homestead Grays	21	9	Y	
1938	Pittsburgh Homestead Grays	26	6	Y	
1939	Baltimore Elite Giants	25	21	Y	
1940	Pittsburgh Homestead Grays	28	13	Y	
1941	Pittsburgh Homestead Grays	25	17	Y	
1942	Pittsburgh Homestead Grays	21	11	Y	N
1943	Pittsburgh Homestead Grays	26	7	Y	Y
1944	Pittsburgh Homestead Grays	27	12	Y	Y
1945	Pittsburgh Homestead Grays	32	13	Y	N
1946	Newark Eagles	47	16	Y	Y
1947	New York Cubans	42	18	Y	Y
1948	Pittsburgh Homestead Grays	38	20	Y	Y

Eastern Colored League

<i>Year</i>	<i>Team</i>	<i>Wins</i>	<i>Losses</i>	<i>League</i>	<i>WS Title</i>
1923	Philadelphia Hilldale Giants	32	17	Y	
1924	Philadelphia Hilldale Giants	47	22	Y	N
1925	Philadelphia Hilldale Giants	45	13	Y	Y
1926	Atlantic City Bacharach Giants	34	20	Y	N
1927	Atlantic City Bacharach Giants	54	35	Y	N
1928	Atlantic City Bacharach Giants	33	32	Y	

Appendix D: Negro League Title Winners (1920-1949)

Negro American League

<i>Year</i>	<i>Team</i>	<i>Wins</i>	<i>Losses</i>	<i>League</i>	<i>WS Title</i>
1937	Kansas City Monarchs	19	8	Y	
1938	Memphis Red Sox	29	19	Y	
1939	Kansas City Monarchs	17	7	Y	
1940	Kansas City Monarchs	12	7	Y	
1941	Birmingham Black Barons			Y	
1942	Kansas City Monarchs	28	10	Y	Y
1943	Birmingham Black Barons	5	3	Y	N
1944	Birmingham Black Barons	48	22	Y	N
1945	Cleveland Buckeyes	53	16	Y	Y
1946	Kansas City Monarchs	27	8	Y	N
1947	Cleveland Buckeyes	54	23	Y	N
1948	Birmingham Black Barons	55	21	Y	N
1949	Baltimore Elite Giants	63	32	Y	

Negro Southern League

<i>Year</i>	<i>Team</i>	<i>Wins</i>	<i>Losses</i>	<i>League</i>	<i>WS Title</i>
1931	Nashville Elite Giants	22	11	Y	
1932	Chicago American Giants	34	7	Y	

East-West League

<i>Year</i>	<i>Team</i>	<i>Wins</i>	<i>Losses</i>	<i>League</i>	<i>WS Title</i>
1932	Detroit Wolves	20	6	Y	

American Negro League

<i>Year</i>	<i>Team</i>	<i>Wins</i>	<i>Losses</i>	<i>League</i>	<i>WS Title</i>
1929	Baltimore Black Sox	49	21	Y	
1931	Philadelphia Hilldale Giants	42	13	Y	

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Steve Avery	1990	1	1	21.4	13.1	\$60.0	\$84.0	\$58.45
Andujar Cedeno	1990	2	2	-1.9	6.0	\$57.5	\$61.5	\$42.81
Ben McDonald	1990	2	1	20.7	7.9	\$60.0	\$81.0	\$56.36
John Olerud	1990	3	1	57.7	16.1	\$55.0	\$71.5	\$49.75
Roger Salkeld	1990	3	4	0.4	3.1	\$60.0	\$61.5	\$42.79
Jose Offerman	1990	4	2	13.7	15.1	\$57.5	\$63.3	\$44.01
Juan Gonzalez	1990	4	1	36	15.8	\$40.0	\$50.0	\$34.79
Sandy Alomar2	1990	5	1	13.6	19.0	\$55.0	\$66.0	\$45.92
Kiki Jones	1990	6	2	0	0.0	\$60.0	\$67.8	\$47.17
Wil Cordero	1990	6	4	3.2	13.0	\$12.5	\$14.7	\$10.22
Todd Zeile	1990	7	1	22.4	15.1	\$65.0	\$71.5	\$49.75
Eric Anthony	1990	8	1	0.3	8.2	\$40.0	\$42.0	\$29.22
Greg Vaughn	1990	9	1	25.4	13.9	\$40.0	\$40.0	\$27.83
Mark Lewis	1990	9	2	-2.8	10.1	\$57.5	\$71.9	\$50.01
Mo Vaughn	1990	10	2	31.4	11.9	\$55.0	\$62.7	\$43.63
Bernie Williams2	1990	11	2	44.3	15.2	\$35.0	\$39.7	\$27.64
Darryl Kile	1990	11	2	28.1	11.2	\$60.0	\$69.6	\$48.43
Delino Deshields	1990	12	1	23.9	12.3	\$29.5	\$27.3	\$18.99
Willie Banks	1990	13	3	4.4	11.2	\$60.0	\$60.6	\$42.16
Mike Harkey	1990	14	1	5.5	9.1	\$60.0	\$52.5	\$36.53
Derek Bell	1990	15	2	13	10.0	\$40.0	\$45.2	\$31.45
Robin Ventura	1990	15	1	56.8	15.1	\$65.0	\$55.3	\$38.44
Marquis Grissom	1990	17	1	26.8	16.0	\$14.0	\$17.3	\$12.03
Mike Stanton2	1990	18	1	13.2	18.1	\$29.5	\$36.0	\$25.04
Tino Martinez	1990	18	2	29	15.1	\$30.0	\$31.7	\$22.02
Todd Hundley	1990	18	3	13.7	13.4	\$25.0	\$28.0	\$19.48
Ray Lankford	1990	19	2	39.7	14.1	\$22.5	\$21.7	\$15.11
Pat Combs	1990	20	1	3.4	2.8	\$29.5	\$35.1	\$24.43
Rafael Valdez	1990	21	2	-0.5	0.0	\$29.5	\$31.6	\$21.96
Reid Cornelius	1990	21	2	0.2	5.4	\$29.5	\$31.1	\$21.65
Ty Griffin	1990	22	1	0	0.0	\$30.0	\$34.8	\$24.21
Narciso Elvira	1990	23	2	0	0.1	\$29.5	\$32.7	\$22.78
Willie Greene	1990	24	3	4.4	8.1	\$32.0	\$36.6	\$25.49
Wes Chamberlain	1990	25	2	1.2	4.8	\$22.5	\$20.0	\$13.93
Wilson Alvarez	1990	26	2	20.5	16.2	\$29.5	\$31.4	\$21.86
Charles Nagy	1990	27	2	32.8	12.9	\$29.5	\$33.9	\$23.60
Jeff Juden	1990	27	3	1.9	8.1	\$29.5	\$31.9	\$22.17
Reggie Jefferson	1990	28	3	4	8.4	\$30.0	\$33.0	\$22.96
Tyler Houston	1990	28	2	1.5	7.4	\$25.0	\$26.4	\$18.35
Frank Thomas4	1990	29	1	72.4	18.1	\$30.0	\$31.7	\$22.02
Tom Goodwin	1990	30	2	3.9	13.1	\$25.0	\$27.4	\$19.05
Bob Hamelin	1990	31	1	2.5	5.0	\$30.0	\$30.8	\$21.40
John Ericks	1990	32	2	1.1	1.8	\$29.5	\$32.7	\$22.78
Dean Palmer	1990	33	2	11	13.7	\$32.0	\$36.0	\$25.05
Braulio Castillo	1990	34	1	-0.8	1.1	\$25.0	\$24.5	\$17.05
Mel Rojas	1990	35	1	3.9	8.9	\$14.0	\$13.5	\$9.40
Rico Brogna	1990	35	3	1.9	8.9	\$30.0	\$31.8	\$22.13
Brian Lane	1990	36	1	0	0.0	\$29.5	\$28.0	\$19.50
Moises Alou	1990	37	1	48	17.9	\$22.5	\$21.0	\$14.64
Willie Ansley	1990	38	2	0	0.0	\$22.5	\$23.0	\$15.97
Manny Alexander	1990	39	4	-3.1	14.0	\$30.0	\$32.4	\$22.54
Travis Fryman	1990	39	1	30.8	12.2	\$32.0	\$29.0	\$20.15
Mickey Morandini	1990	41	1	8.9	10.1	\$18.0	\$20.7	\$14.40
Larry Walker	1990	42	1	68.9	16.1	\$29.5	\$33.8	\$23.50
Donald Harris	1990	43	1	-1.5	2.1	\$12.5	\$14.3	\$9.91
Earl Cunningham	1990	44	2	0	0.0	\$14.0	\$14.4	\$10.03
Brian Bohanon	1990	45	1	11	11.4	\$14.0	\$15.8	\$11.01
Johnny Ard	1990	46	2	0	0.0	\$14.0	\$14.7	\$10.23
Kent Mercker	1990	47	1	6.6	18.7	\$14.0	\$15.7	\$10.91
Willie Smith3	1990	48	2	-0.5	0.0	\$14.0	\$14.6	\$10.13
Glenallen Hill	1990	49	1	10.6	11.8	\$14.0	\$15.5	\$10.81
Dennis Burlingame	1990	50	1	0	0.0	\$14.0	\$15.5	\$10.76
Alex Sanchez	1990	51	1	-1	0.0	\$14.0	\$15.4	\$10.71

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Steve Hoesy	1990	52	4	-0.4	1.0	\$14.0	\$14.1	\$9.84
Deion Sanders	1990	53	1	6.2	12.0	\$12.5	\$13.6	\$9.48
Felix Jose	1990	54	1	7	15.1	\$14.0	\$15.2	\$10.57
Julio Valera	1990	56	2	3.2	5.9	\$14.0	\$14.8	\$10.33
Russ Springer	1990	58	3	3.2	18.3	\$14.0	\$14.6	\$10.15
Tom Redington	1990	58	1	0	0.0	\$14.0	\$14.9	\$10.37
Kyle Abbott	1990	60	2	-0.4	5.0	\$14.0	\$15.0	\$10.45
Kevin Morton	1990	61	1	0.8	0.2	\$14.0	\$14.7	\$10.23
Eric Wedge	1990	63	1	0.2	2.8	\$12.5	\$13.0	\$9.05
Joe Slusarski	1990	64	1	-0.6	10.2	\$14.0	\$14.5	\$10.08
Brian Jordan	1990	66	2	31.6	14.5	\$14.0	\$14.7	\$10.23
Carlos Baerga	1990	67	1	15.8	15.5	\$18.0	\$18.4	\$12.77
Scott Cooper	1990	68	2	6.6	7.1	\$14.0	\$14.8	\$10.33
Howard Farmer	1990	69	1	-0.6	0.2	\$14.0	\$14.1	\$9.84
Rick Wilkins	1990	70	1	14.2	10.3	\$12.5	\$12.6	\$8.74
Darren Lewis	1990	71	1	8.1	11.9	\$12.0	\$12.9	\$8.98
Derrick May	1990	72	1	3.1	9.1	\$10.0	\$10.7	\$7.46
Keith Richardson	1990	73	1	0	0.0	\$10.0	\$10.7	\$7.44
Dan Peltier	1990	74	2	-1.1	4.1	\$10.0	\$10.4	\$7.20
Scott Radinsky	1990	78	1	3.5	11.5	\$10.0	\$10.6	\$7.36
Mickey Pina	1990	79	1	0	0.0	\$10.0	\$10.6	\$7.34
Mike Milchin	1990	80	2	-0.1	0.4	\$10.0	\$10.5	\$7.27
Tommy Greene	1990	80	1	9.4	7.8	\$10.0	\$10.5	\$7.32
Jim Newlin	1990	81	1	0	0.0	\$10.0	\$10.5	\$7.31
Kevin Belcher	1990	82	1	0.2	0.1	\$12.0	\$12.6	\$8.75
Phil Plantier	1990	83	1	3.1	7.1	\$10.0	\$10.5	\$7.27
Eric Karros	1990	84	2	17.9	12.9	\$7.5	\$7.7	\$5.37
Eric Gunderson	1990	85	1	0.4	10.1	\$10.0	\$10.4	\$7.24
Kevin Appier	1990	86	1	52.7	14.9	\$10.0	\$10.4	\$7.22
Kevin Tapani	1990	88	1	38.7	12.2	\$10.0	\$10.3	\$7.18
Thomas Howard	1990	89	1	2.2	10.3	\$10.0	\$10.3	\$7.17
Paul Sorrento	1990	91	1	5.9	10.1	\$7.5	\$7.7	\$5.35
David Segui	1990	93	1	11.7	14.3	\$7.5	\$7.7	\$5.32
Scott Coolbaugh	1990	94	1	-0.6	4.9	\$10.5	\$10.7	\$7.43
Cullen Hartzog	1990	95	1	0	0.0	\$10.0	\$10.2	\$7.06
Scott Aldred	1990	98	1	1.2	9.7	\$10.0	\$10.1	\$7.01
Jose Vizcaino	1990	99	1	4.9	17.1	\$14.0	\$14.1	\$9.79
Chipper Jones	1991	1	5	84.8	19.1	\$65.0	\$61.8	\$43.62
Todd Van Poppel	1991	1	3	1.3	13.1	\$60.0	\$78.0	\$55.10
Ryan Klesko	1991	3	4	29.4	15.0	\$55.0	\$49.5	\$34.97
Arthur Rhodes	1991	5	2	17.3	20.1	\$60.0	\$72.0	\$50.86
Tim Salmon	1991	5	3	35.1	14.1	\$40.0	\$44.2	\$31.22
Royce Clayton	1991	6	2	19.2	16.0	\$57.5	\$50.3	\$35.54
Ivan Rodriguez	1991	7	1	70.5	20.3	\$55.0	\$60.5	\$42.74
Reggie Sanders2	1991	8	2	39.3	15.9	\$40.0	\$40.0	\$28.25
Rondell White	1991	9	4	24	14.1	\$29.5	\$27.3	\$19.28
Kurt Miller	1991	11	4	-0.6	4.9	\$60.0	\$65.1	\$45.98
Steve Karsay	1991	12	3	8.9	12.8	\$60.0	\$57.9	\$40.90
Raul Mondesi	1991	14	4	26.2	11.9	\$40.0	\$45.8	\$32.35
Jeff McNeely	1991	16	2	0.2	0.1	\$25.0	\$30.5	\$21.54
Rich Garces	1991	16	1	3.4	11.8	\$29.5	\$36.9	\$26.05
Marc Newfield	1991	17	5	-1.8	5.2	\$22.5	\$23.1	\$16.29
Tim Costo	1991	17	1	-0.6	1.0	\$22.5	\$27.8	\$19.63
Mike Mussina	1991	19	1	82.4	17.2	\$29.5	\$35.5	\$25.11
Eddie Zosky	1991	22	2	-0.7	9.1	\$30.0	\$32.9	\$23.20
Lance Dickson	1991	23	2	0	0.0	\$29.5	\$29.8	\$21.05
Mark Whiten	1991	25	1	13.1	9.8	\$22.5	\$25.1	\$17.72
Anthony Young	1991	26	2	2.5	4.9	\$29.5	\$26.3	\$18.55
Kirk Dressendorfer	1991	27	1	-0.2	0.1	\$29.5	\$32.0	\$22.61
Kenny Lofton	1991	28	2	62.1	16.1	\$25.0	\$27.5	\$19.43
Henry Rodriguez2	1991	29	1	5.5	9.8	\$22.5	\$23.7	\$16.77
Hensley Meulens	1991	30	1	-1.8	8.7	\$22.5	\$23.4	\$16.53
Carl Everett	1991	32	5	17.3	13.1	\$25.0	\$25.5	\$18.01

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Jeff Bagwell	1991	32	1	80.2	14.5	\$30.0	\$30.3	\$21.40
Pete Schourek	1991	33	1	10.6	10.3	\$29.5	\$29.4	\$20.73
Donovan Osborne	1991	35	2	9.9	12.1	\$29.5	\$27.1	\$19.17
Gary Scott	1991	39	2	-1.5	1.5	\$32.0	\$34.2	\$24.19
Jamie McAndrew	1991	40	1	0.5	2.0	\$29.5	\$26.3	\$18.55
Dan Wilson	1991	41	3	14.4	13.1	\$12.5	\$13.3	\$9.40
D.J. Dozier	1991	44	2	-0.2	0.4	\$14.0	\$15.1	\$10.63
Carlos Garcia	1991	45	2	-0.9	8.6	\$18.0	\$19.6	\$13.86
Jeff Conine	1991	45	1	22	17.0	\$15.0	\$17.0	\$11.97
Tim Naehring	1991	46	1	11.8	6.9	\$14.0	\$15.8	\$11.13
Brook Fordyce	1991	47	2	2.7	9.4	\$12.5	\$13.5	\$9.54
Kevin Rogers	1991	50	2	1	1.7	\$14.0	\$14.1	\$9.99
Robbie Beckett	1991	50	2	-0.3	1.0	\$14.0	\$14.2	\$10.04
Jim Thome	1991	51	2	67.7	21.1	\$12.0	\$12.9	\$9.09
Steve Decker	1991	52	1	0.8	9.0	\$12.5	\$13.7	\$9.67
Johnny Ruffin	1991	53	3	-0.3	8.0	\$14.0	\$14.7	\$10.38
Marcus Moore	1991	53	1	-0.7	2.9	\$14.0	\$15.3	\$10.78
Don Peters	1991	54	1	0	0.0	\$14.0	\$15.2	\$10.73
Brian Barnes	1991	57	1	1.5	3.8	\$14.0	\$15.0	\$10.58
Leo Gomez	1991	61	1	10.6	6.0	\$14.0	\$14.7	\$10.38
Chris Hammond	1991	63	1	13.6	16.0	\$14.0	\$14.6	\$10.28
Greg Blosser	1991	64	2	-0.4	0.6	\$14.0	\$14.2	\$10.04
Kerry Woodson	1991	65	1	-0.1	0.2	\$14.0	\$14.4	\$10.19
Kerwin Moore	1991	67	1	0	0.1	\$12.5	\$12.8	\$9.01
Pat Kelly3	1991	68	1	4.4	8.0	\$18.0	\$18.3	\$12.91
Mike Timlin	1991	69	1	13.1	17.5	\$14.0	\$14.1	\$9.99
Dave Staton	1991	70	1	0.2	0.7	\$15.0	\$15.1	\$10.65
Dan Opperman	1991	71	1	0	0.0	\$10.0	\$10.8	\$7.59
Chuck Knoblauch	1991	72	1	39.8	11.5	\$14.0	\$15.0	\$10.61
Dan Smith5	1991	73	2	0	1.8	\$10.0	\$10.4	\$7.35
Angel Miranda	1991	81	1	2.9	4.0	\$10.0	\$10.5	\$7.42
Ricky Gutierrez	1991	82	1	-2.9	11.5	\$14.0	\$14.7	\$10.36
Greg Colbrunn	1991	85	1	8.4	12.0	\$29.5	\$30.7	\$21.67
Robb Nen	1991	86	1	17.2	9.5	\$10.0	\$10.4	\$7.33
Mike Zimmerman	1991	90	1	0	0.0	\$10.0	\$10.3	\$7.26
William Suero	1991	92	1	-0.1	1.3	\$14.0	\$14.3	\$10.11
Bret Boone	1991	97	2	23.2	13.0	\$14.0	\$14.1	\$9.96
Brien Taylor	1992	1	3	0	0.0	\$60.0	\$66.0	\$47.33
Cliff Floyd	1992	1	3	23.4	15.8	\$10.0	\$9.2	\$6.63
Alex Gonzalez	1992	4	4	9.1	12.1	\$57.5	\$64.1	\$45.98
Carlos Delgado	1992	4	3	43.5	15.6	\$55.0	\$61.3	\$43.98
Manny Ramirez	1992	7	3	66.8	17.6	\$50.0	\$60.3	\$43.21
Allen Watson	1992	9	2	4.5	7.1	\$60.0	\$57.0	\$40.88
Frankie Rodriguez	1992	9	4	0	6.2	\$60.0	\$65.1	\$46.69
Pedro Martinez2	1992	10	2	85.1	17.0	\$60.0	\$57.0	\$40.88
Tyrone Hill	1992	10	3	0	0.0	\$60.0	\$64.2	\$46.04
Dmitri Young	1992	12	4	13	11.9	\$55.0	\$57.2	\$41.02
Mark Wohlers	1992	13	1	8.5	11.1	\$60.0	\$54.0	\$38.72
Ray McDavid	1992	14	3	-0.3	1.2	\$35.0	\$39.9	\$28.61
David McCarty	1992	16	2	-2.5	12.0	\$30.0	\$36.2	\$25.92
Javy Lopez	1992	17	3	31.5	14.0	\$25.0	\$23.0	\$16.49
Tavo Alvarez	1992	17	2	0.6	1.1	\$14.0	\$12.5	\$8.94
Mike Kelly	1992	19	3	-0.1	0.0	\$22.5	\$21.0	\$15.09
Benji Gil	1992	21	4	2.1	10.3	\$30.0	\$28.1	\$20.12
Salomon Torres	1992	22	2	2.8	15.1	\$29.5	\$32.5	\$23.27
David Nied	1992	23	2	3.2	4.1	\$29.5	\$26.7	\$19.15
Brian Williams	1992	24	1	0.2	8.8	\$29.5	\$33.3	\$23.91
Pat Mahomes	1992	25	1	-2	11.4	\$29.5	\$32.9	\$23.59
Tyler Green	1992	26	3	2.1	5.5	\$29.5	\$30.2	\$21.68
Dave Nilsson	1992	29	1	10	7.4	\$25.0	\$26.4	\$18.91
Troy Percival	1992	29	2	11.6	14.1	\$29.5	\$29.4	\$21.05
Midre Cummings	1992	33	3	0.9	11.9	\$22.5	\$21.0	\$15.09
Kevin Young	1992	35	2	8	11.0	\$30.0	\$30.6	\$21.94

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Joey Hamilton	1992	36	3	14.2	9.0	\$29.5	\$32.6	\$23.38
John Roper	1992	36	2	0.1	2.3	\$29.5	\$33.5	\$24.01
Nigel Wilson	1992	37	3	-0.5	3.1	\$22.5	\$24.4	\$17.51
Terrell Lowery	1992	40	2	-0.3	3.1	\$25.0	\$26.1	\$18.73
Pokey Reese	1992	41	5	6.6	7.5	\$18.0	\$19.5	\$14.01
Pedro Castellano	1992	42	1	-1.3	3.0	\$14.0	\$16.0	\$11.50
Mike Neill	1992	43	1	0	0.0	\$14.0	\$16.0	\$11.45
Shawn Estes	1992	44	2	16.8	13.0	\$14.0	\$14.9	\$10.69
Roberto Hernandez	1992	45	1	14.3	16.1	\$14.0	\$15.8	\$11.34
Tom Nevers	1992	47	1	0	0.0	\$18.0	\$20.2	\$14.46
Jeromy Burnitz	1992	50	2	24.6	13.3	\$14.0	\$15.1	\$10.84
Steve Cooke	1992	52	1	4.6	5.7	\$14.0	\$15.3	\$10.99
Butch Huskey	1992	54	3	1.4	7.1	\$14.0	\$15.0	\$10.77
Mark Smith	1992	57	1	1	9.4	\$14.0	\$15.0	\$10.74
Joel Johnston	1992	59	1	0	3.7	\$14.0	\$14.8	\$10.64
David Zancanaro	1992	65	1	0	0.0	\$14.0	\$14.4	\$10.34
Duane Singleton	1992	69	1	-1.1	1.8	\$12.5	\$12.6	\$9.05
Howard Battle	1992	70	1	0.3	4.1	\$14.0	\$14.1	\$10.09
Aaron Sele	1992	71	2	31.1	14.3	\$10.0	\$10.6	\$7.60
Ryan Hawblitzel	1992	73	1	0	0.2	\$10.0	\$10.7	\$7.67
Todd Ritchie	1992	73	2	10.2	7.5	\$10.0	\$10.4	\$7.46
Darren Burton	1992	77	1	0	0.0	\$10.0	\$10.6	\$7.60
Greg Gohr	1992	79	2	0.4	3.5	\$10.0	\$10.4	\$7.44
Justin Thompson	1992	79	2	10.5	9.3	\$10.0	\$10.5	\$7.53
Luis Mercedes	1992	80	1	-1.5	2.0	\$10.0	\$10.5	\$7.55
Hector Fajardo	1992	81	1	1.1	3.9	\$10.0	\$10.5	\$7.53
Mark Hutton	1992	83	1	0	4.8	\$10.0	\$10.5	\$7.49
Cal Eldred	1992	85	1	13	14.0	\$10.0	\$10.4	\$7.46
Scott Erwin	1992	88	1	0	0.0	\$10.0	\$10.3	\$7.40
Keith Mitchell	1992	89	1	0	7.2	\$10.0	\$10.3	\$7.39
Mike Robertson	1992	90	1	-0.4	1.8	\$7.5	\$7.7	\$5.53
Jonathan Hurst	1992	91	1	-0.6	1.9	\$10.0	\$10.3	\$7.35
Julian Vasquez	1992	92	1	0	0.0	\$10.0	\$10.2	\$7.33
Doug Glanville	1992	93	1	9.8	8.3	\$12.0	\$12.2	\$8.78
Mo Sanford	1992	94	1	-0.1	3.8	\$10.0	\$10.2	\$7.30
Derek Reid	1992	95	1	0	0.0	\$10.0	\$10.2	\$7.28
Alan Newman	1992	96	1	-0.1	1.1	\$10.0	\$10.1	\$7.26
Eduardo Perez	1992	97	1	2	13.2	\$7.5	\$7.6	\$5.43
Jeff Hammonds	1993	3	2	8.3	11.9	\$40.0	\$38.0	\$27.67
Derek Jeter	1993	4	4	73.8	18.3	\$57.5	\$71.0	\$51.70
Brian Hunter2	1993	5	3	5.1	9.1	\$35.0	\$39.4	\$28.67
Shawn Green	1993	6	3	31	14.0	\$40.0	\$43.4	\$31.60
James Baldwin	1993	8	3	9.1	10.4	\$60.0	\$59.7	\$43.46
Jason Bere	1993	8	1	9.2	10.0	\$60.0	\$63.0	\$45.87
Johnny Damon	1993	9	3	43	17.0	\$40.0	\$47.6	\$34.66
Brad Pennington	1993	18	1	-1.3	5.4	\$29.5	\$36.0	\$26.20
Scott Ruffcorn	1993	23	3	-0.9	4.2	\$29.5	\$33.3	\$24.27
Jim Pittsley	1993	24	5	-0.2	4.2	\$29.5	\$33.2	\$24.16
Phil Nevin	1993	24	3	15.1	11.3	\$32.0	\$29.9	\$21.78
Michael Tucker	1993	25	3	9.8	11.4	\$22.5	\$22.7	\$16.54
Roger Cedeno	1993	26	4	0.3	10.0	\$22.5	\$24.8	\$18.02
Russ Davis	1993	26	3	0	6.9	\$32.0	\$34.7	\$25.28
Bobby Jones3	1993	28	1	12.1	9.1	\$29.5	\$31.6	\$22.98
Bobby Abreu	1993	29	4	58.4	16.1	\$22.5	\$24.5	\$17.86
Brian Barber	1993	30	3	0.1	4.0	\$29.5	\$33.6	\$24.48
Calvin Murray	1993	33	1	1.4	5.3	\$25.0	\$24.9	\$18.11
Edgar Renteria	1993	33	2	35.5	15.4	\$30.0	\$34.4	\$25.01
Alex Ochoa	1993	35	4	6	7.0	\$22.5	\$24.6	\$17.94
Rich Becker	1993	37	2	6.8	7.1	\$25.0	\$26.8	\$19.48
Mike Piazza	1993	38	1	63.5	15.1	\$25.0	\$23.0	\$16.75
Melvin Nieves	1993	39	2	-2.2	6.0	\$22.5	\$24.4	\$17.77
Jessie Hollins	1993	41	1	-0.2	0.0	\$14.0	\$16.1	\$11.72
Todd Jones	1993	42	1	11.3	15.1	\$14.0	\$16.0	\$11.67

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Preston Wilson	1993	43	4	10.4	9.0	\$12.5	\$13.3	\$9.69
Chad Mottola	1993	48	2	-1.1	10.3	\$14.0	\$14.8	\$10.80
Alan Embree	1993	49	1	6.4	16.8	\$14.0	\$15.5	\$11.31
Gerald Williams	1993	52	1	5.7	13.1	\$12.5	\$13.7	\$9.97
Mike Trombley	1993	53	1	5.4	9.8	\$14.0	\$15.3	\$11.11
Brent Gates	1993	56	1	3.4	6.4	\$18.0	\$19.4	\$14.09
Matt Whisenant	1993	59	1	0.8	2.9	\$14.0	\$14.8	\$10.80
Ron Villone	1993	62	3	3.6	14.4	\$14.0	\$15.0	\$10.93
Derek Lowe	1993	63	2	43	16.1	\$14.0	\$14.4	\$10.45
Joe Rosselli	1993	65	1	-0.5	0.4	\$14.0	\$14.4	\$10.50
Mike Lieberthal	1993	67	1	19.7	13.2	\$12.5	\$12.8	\$9.28
Paul Shuey	1993	67	2	7.5	13.3	\$14.0	\$14.9	\$10.88
Jose Martinez22	1993	68	1	-0.1	0.0	\$14.0	\$14.2	\$10.35
Steve Gibralter	1993	71	2	-0.1	0.8	\$12.0	\$12.8	\$9.30
Al Shirley	1993	74	1	0	0.0	\$10.0	\$10.7	\$7.77
Jose Pett	1993	75	2	0	0.0	\$10.0	\$10.4	\$7.59
Curtis Shaw	1993	76	2	0	0.0	\$10.0	\$10.4	\$7.54
Mark Thompson	1993	77	2	1.6	6.0	\$10.0	\$10.5	\$7.61
Sterling Hitchcock	1993	84	2	10.2	12.0	\$10.0	\$10.4	\$7.54
Ron Watson	1993	86	1	0	0.0	\$10.0	\$10.4	\$7.55
Larry Thomas	1993	88	1	0.4	1.8	\$10.0	\$10.3	\$7.52
Aaron Holbert	1993	96	1	-0.3	9.5	\$14.0	\$14.2	\$10.32
J.T. Snow	1993	98	1	12.5	16.0	\$7.5	\$7.6	\$5.50
Rene Arocha	1993	100	1	2.5	4.2	\$10.0	\$10.0	\$7.30
Alex Rodriguez	1994	1	2	111	19.2	\$65.0	\$84.5	\$62.46
Ruben Rivera	1994	2	5	4.9	7.7	\$35.0	\$38.5	\$28.46
Charles Johnson	1994	7	2	26	11.1	\$55.0	\$49.5	\$36.59
Jose Silva	1994	10	2	4.5	6.1	\$60.0	\$70.5	\$52.11
Armando Benitez	1994	11	2	8.9	13.9	\$60.0	\$69.0	\$51.00
Darren Dreifort	1994	11	1	11	10.4	\$60.0	\$57.0	\$42.13
Bill Pulsipher	1994	12	2	0.9	9.9	\$60.0	\$75.0	\$55.44
Todd Hollandsworth	1994	13	3	4.9	11.4	\$40.0	\$42.8	\$31.64
Trot Nixon	1994	13	4	21.9	11.8	\$40.0	\$44.4	\$32.82
Billy Wagner	1994	14	3	23.5	15.1	\$60.0	\$57.0	\$42.13
Brad Fullmer	1994	14	4	4.9	6.9	\$65.0	\$70.9	\$52.37
Chan Ho Park	1994	14	3	19.1	16.5	\$60.0	\$67.8	\$50.11
Jeff Granger	1994	19	2	-0.7	3.6	\$29.5	\$33.2	\$24.53
Jeff D'Amico	1994	25	2	7.5	7.9	\$29.5	\$31.1	\$23.00
Terrell Wade	1994	29	3	0.6	3.0	\$29.5	\$32.7	\$24.20
LaTroy Hawkins	1994	30	3	15.1	18.4	\$29.5	\$30.5	\$22.57
Edgardo Alfonzo	1994	31	2	29.9	11.1	\$32.0	\$35.0	\$25.90
Mac Suzuki	1994	34	1	2.9	6.0	\$29.5	\$28.9	\$21.37
Joey Eischen	1994	40	1	1.2	12.0	\$29.5	\$26.3	\$19.41
Brooks Kieschnick	1994	44	3	0.3	8.5	\$14.0	\$15.0	\$11.07
Rick Helling	1994	45	1	13.6	12.4	\$14.0	\$15.8	\$11.69
Orlando Miller	1994	46	2	1.7	3.2	\$18.0	\$20.1	\$14.83
John Burke4	1994	49	1	0.1	0.9	\$14.0	\$15.5	\$11.49
Brian Anderson	1994	56	1	-0.5	11.7	\$14.0	\$15.1	\$11.12
Kirk Presley	1994	59	1	0	0.0	\$14.0	\$14.8	\$10.97
Arquimede Pozo	1994	60	1	-0.5	2.0	\$14.0	\$14.8	\$10.92
Julian Tavarez	1994	61	1	10.3	16.0	\$14.0	\$14.7	\$10.87
Glenn Williams	1994	64	2	0.2	0.1	\$18.0	\$18.1	\$13.37
D.J. Boston	1994	66	1	0	0.0	\$18.0	\$18.5	\$13.64
Ricky Bottalico	1994	68	1	2.4	11.0	\$14.0	\$14.2	\$10.50
James Mouton	1994	72	1	0.5	7.5	\$10.0	\$10.7	\$7.93
J.R. Phillips	1994	73	2	-1.1	6.1	\$7.5	\$7.9	\$5.86
Rick Gorecki	1994	75	1	-0.1	0.6	\$10.0	\$10.7	\$7.87
Robert Ellis	1994	77	1	0.1	6.9	\$10.0	\$10.6	\$7.83
Gabe White	1994	81	1	4.1	11.0	\$55.0	\$57.8	\$42.69
Luis Ortiz	1994	86	1	-1.5	3.1	\$10.5	\$10.9	\$8.05
Rod Henderson	1994	88	1	-0.3	4.4	\$10.0	\$10.3	\$7.63
Danny Bautista	1994	90	1	2.4	11.0	\$10.0	\$10.3	\$7.59
Albie Lopez	1994	93	1	6.2	10.0	\$10.0	\$10.2	\$7.54

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
B.J. Wallace	1994	94	1	0	0.0	\$29.5	\$30.0	\$22.19
Wayne Gomes	1994	96	1	1.4	5.3	\$10.0	\$10.1	\$7.48
Jose Herrera2	1994	97	2	-1.2	1.1	\$10.0	\$10.1	\$7.47
Paul Spoljaric	1994	99	1	1	6.5	\$10.0	\$10.1	\$7.43
Andruw Jones	1995	1	3	67.6	16.1	\$40.0	\$44.0	\$33.02
Ben Grieve	1995	1	4	6.6	8.1	\$40.0	\$50.0	\$37.52
Paul Konerko	1995	2	4	26	16.1	\$55.0	\$63.0	\$47.26
Paul Wilson	1995	2	2	7.5	9.1	\$60.0	\$60.0	\$45.02
Vladimir Guerrero	1995	2	3	56.5	15.0	\$10.0	\$10.1	\$7.58
Alan Benes	1995	5	2	4.9	7.7	\$60.0	\$60.0	\$45.02
Karim Garcia	1995	7	4	-3.9	9.0	\$40.0	\$44.2	\$33.17
Todd Walker	1995	7	3	9.3	10.7	\$57.5	\$65.8	\$49.40
Nomar Garciaparra	1995	10	3	41.5	13.1	\$57.5	\$66.7	\$50.05
Jason Schmidt	1995	11	2	35.3	14.3	\$60.0	\$66.0	\$49.53
Matt Drews	1995	12	2	0	0.0	\$60.0	\$67.8	\$50.88
Scott Rolen	1995	13	3	69.9	16.2	\$65.0	\$74.1	\$55.60
Antonio Osuna	1995	15	1	5.1	10.0	\$60.0	\$51.0	\$38.27
Derrek Lee	1995	15	4	35.7	14.4	\$55.0	\$61.9	\$46.43
Rey Ordonez	1995	17	2	2.5	8.3	\$30.0	\$36.6	\$27.46
Dustin Hermanson	1995	18	2	11.7	11.4	\$29.5	\$28.5	\$21.36
Doug Million	1995	19	2	0	0.0	\$29.5	\$33.5	\$25.13
Richard Hidalgo	1995	19	4	21.6	7.9	\$22.5	\$25.8	\$19.33
Jay Payton	1995	21	3	12.4	12.1	\$25.0	\$27.6	\$20.73
Jaret Wright	1995	22	3	12	9.9	\$29.5	\$26.3	\$19.70
Josh Booty	1995	24	2	0.1	1.5	\$32.0	\$33.4	\$25.09
Ugueth Urbina	1995	27	2	11.1	10.4	\$30.0	\$28.1	\$21.05
Chris Carpenter	1995	28	3	37.7	15.4	\$29.5	\$29.6	\$22.25
Ray Durham	1995	28	1	30.1	13.4	\$30.0	\$32.1	\$24.09
Scott Elarton	1995	28	3	4.5	10.0	\$29.5	\$31.7	\$23.80
Jermaine Dye	1995	30	2	15.3	13.4	\$22.5	\$23.9	\$17.90
Jeff Suppan	1995	35	3	22.2	16.9	\$29.5	\$32.9	\$24.68
Jason Istringhausen	1995	37	1	10.6	17.2	\$29.5	\$27.6	\$20.70
Jimmy Haynes	1995	38	2	8	8.6	\$29.5	\$33.9	\$25.46
Trey Beamon	1995	43	2	-0.7	2.1	\$14.0	\$14.4	\$10.77
Julio Santana	1995	44	2	0.5	9.1	\$14.0	\$14.6	\$10.98
Shannon Stewart	1995	46	3	21.8	12.8	\$14.0	\$14.9	\$11.19
Andy Pettitte	1995	49	1	67.8	18.4	\$14.0	\$15.5	\$11.66
Hiram Bocachica	1995	50	3	-1.5	6.8	\$57.5	\$60.1	\$45.09
John Wasdin	1995	53	2	4.1	11.9	\$14.0	\$14.2	\$10.66
Juan Acevedo	1995	55	1	1.5	8.3	\$14.0	\$15.1	\$11.35
Andy Larkin	1995	56	1	-1.1	4.0	\$14.0	\$15.1	\$11.29
Everett Stull	1995	58	1	-0.5	5.1	\$60.0	\$63.9	\$47.95
Raul Casanova	1995	60	1	-0.1	12.0	\$12.5	\$13.2	\$9.90
Sergio Nunez	1995	61	1	0	0.0	\$18.0	\$18.9	\$14.18
Antone Williamson	1995	64	2	-0.7	0.1	\$15.0	\$16.1	\$12.07
Curtis Goodwin	1995	68	1	-0.8	4.2	\$12.5	\$12.7	\$9.52
Marc Kroon	1995	69	1	-0.3	9.0	\$14.0	\$14.1	\$10.61
Marc Barcelo	1995	70	1	0	0.0	\$14.0	\$14.1	\$10.56
Andrew Lorraine	1995	71	1	0.3	8.2	\$10.0	\$10.8	\$8.07
Jimmy Hurst	1995	75	1	0	0.0	\$10.0	\$10.7	\$7.99
Sandy Martinez	1995	77	1	-1.3	9.3	\$12.5	\$13.3	\$9.94
Daron Kirkreit	1995	80	1	0	0.0	\$10.0	\$10.5	\$7.90
Pat Watkins	1995	83	1	-0.2	1.6	\$12.0	\$12.5	\$9.41
Bret Wagner	1995	84	1	0	0.0	\$10.0	\$10.4	\$7.82
Tony Clark	1995	86	1	12.5	13.9	\$7.5	\$7.8	\$5.84
C.J. Nitkowski	1995	87	1	0.7	10.0	\$10.0	\$10.4	\$7.77
Desi Relaford	1995	89	2	-0.7	11.0	\$14.0	\$14.4	\$10.79
Marc Valdes	1995	89	1	0.3	5.8	\$10.0	\$10.3	\$7.73
Dante Powell	1995	90	2	-0.3	4.5	\$12.0	\$12.3	\$9.23
Garret Anderson	1995	93	1	23.5	16.0	\$10.0	\$10.2	\$7.65
Jose Malave	1995	94	1	-0.5	1.3	\$10.0	\$10.2	\$7.64
Damon Hollins	1995	95	2	-0.5	8.4	\$10.0	\$10.1	\$7.58
Kerry Wood	1996	3	3	22.8	14.1	\$60.0	\$66.0	\$50.28

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Darin Erstad	1996	4	1	28.3	13.3	\$35.0	\$43.8	\$33.33
Miguel Tejada	1996	6	3	41.9	16.0	\$57.5	\$56.4	\$42.93
Livan Hernandez	1996	8	2	37.2	16.0	\$60.0	\$65.1	\$49.59
Ben Davis	1996	10	4	4.1	6.0	\$55.0	\$53.1	\$40.43
Todd Helton	1996	11	3	55.4	16.2	\$55.0	\$66.3	\$50.49
Jose Cruz2	1996	12	2	18.8	11.0	\$40.0	\$49.4	\$37.63
Chad Hermansen	1996	13	5	-2.6	4.6	\$35.0	\$35.9	\$27.33
Derrick Gibson	1996	13	4	0.2	1.0	\$40.0	\$42.6	\$32.45
Bartolo Colon	1996	14	2	44.1	16.5	\$60.0	\$52.5	\$40.00
Rocky Coppinger	1996	19	1	0	5.3	\$29.5	\$35.5	\$27.08
Brian Rose	1996	22	3	0.5	3.8	\$29.5	\$32.9	\$25.06
Matt Morris	1996	25	2	28	11.1	\$29.5	\$26.3	\$20.00
Jason Kendall	1996	26	1	40.2	14.4	\$25.0	\$27.5	\$20.95
Carlos Guillen	1996	27	4	25.9	13.0	\$30.0	\$30.9	\$23.54
Donnie Sadler	1996	28	2	-2	9.1	\$30.0	\$27.2	\$20.68
Jaime Jones	1996	31	1	0	0.0	\$22.5	\$23.1	\$17.57
Neifi Perez	1996	33	2	-2.9	10.8	\$30.0	\$33.5	\$25.48
Mike Drumright	1996	35	2	0	0.0	\$29.5	\$32.9	\$25.06
Marty Janzen	1996	40	1	-0.3	1.4	\$29.5	\$26.3	\$20.00
Andy Yount	1996	45	1	0	0.0	\$14.0	\$15.8	\$12.05
Joe Fontenot	1996	45	3	-0.2	0.1	\$14.0	\$14.1	\$10.77
Geoff Jenkins	1996	49	3	24.5	10.4	\$14.0	\$14.9	\$11.39
Wilton Guerrero	1996	49	2	-2.3	8.1	\$18.0	\$19.4	\$14.81
Richie Sexson	1996	50	1	17.1	10.9	\$15.0	\$16.6	\$12.63
Jason Varitek	1996	51	1	24.3	14.0	\$12.5	\$13.8	\$10.48
Michael Coleman	1996	51	2	-0.7	3.7	\$12.5	\$13.3	\$10.17
Chris Snopek	1996	52	1	-1	3.2	\$18.0	\$19.7	\$15.02
Andrew Vessel	1996	55	1	0	0.0	\$14.0	\$15.1	\$11.52
Jose Valentin	1996	58	1	29.9	14.8	\$18.0	\$19.2	\$14.60
Todd Greene	1996	59	1	-1.1	10.2	\$12.5	\$13.3	\$10.09
Enrique Wilson	1996	61	3	-4.2	7.8	\$18.0	\$18.5	\$14.06
Jamey Wright	1996	66	1	12.2	17.2	\$14.0	\$14.4	\$10.93
Jay Powell	1996	67	1	3.5	9.9	\$14.0	\$14.3	\$10.88
Bobby Smith	1996	75	1	0.5	8.3	\$10.5	\$11.2	\$8.52
Dan Serafini	1996	76	1	0.2	11.2	\$10.0	\$10.6	\$8.09
Luis Castillo	1996	79	1	28.3	14.2	\$14.0	\$14.8	\$11.25
Jeff Abbott	1996	80	2	-1.6	4.3	\$12.0	\$12.5	\$9.51
Glendon Rusch	1996	83	2	18.2	12.1	\$10.0	\$10.4	\$7.90
Brad Rigby	1996	85	2	-0.7	3.0	\$10.0	\$10.3	\$7.87
Danny Graves	1996	86	1	2.3	9.8	\$10.0	\$10.4	\$7.90
Steve Cox	1996	87	1	1	3.0	\$7.5	\$7.8	\$5.91
Gabe Alvarez	1996	92	1	-1.5	2.3	\$10.5	\$10.7	\$8.18
John Frascatore	1996	97	1	-1.3	6.8	\$10.0	\$10.1	\$7.69
Billy Percibal	1996	99	1	0	0.0	\$10.0	\$10.1	\$7.66
Adrian Beltre	1997	3	2	65	15.3	\$65.0	\$81.3	\$62.84
Eric Chavez	1997	3	3	34.9	15.1	\$65.0	\$69.6	\$53.79
Bruce Chen	1997	4	3	9.2	15.1	\$60.0	\$55.2	\$42.69
Matt White	1997	4	4	0	0.0	\$60.0	\$57.9	\$44.78
Aramis Ramirez	1997	5	2	37	15.4	\$65.0	\$55.3	\$42.73
Travis Lee	1997	5	2	7.1	8.4	\$55.0	\$63.3	\$48.92
Kris Benson	1997	7	3	13.8	11.1	\$60.0	\$67.8	\$52.44
Carl Pavano	1997	9	2	23.4	14.0	\$60.0	\$54.0	\$41.76
John Patterson2	1997	10	5	5.2	4.8	\$30.0	\$27.6	\$21.35
Mark Kotsay	1997	12	2	19.9	16.2	\$40.0	\$45.4	\$35.11
Roy Halladay	1997	12	3	66.1	15.0	\$60.0	\$67.8	\$52.44
Carlos Beltran	1997	14	2	63.9	15.1	\$40.0	\$43.6	\$33.72
Alex Gonzalez2	1997	17	3	9.3	14.8	\$30.0	\$27.2	\$21.00
Braden Loper	1997	23	3	6.4	11.5	\$29.5	\$30.2	\$23.39
Jose Guillen	1997	24	1	4.4	13.5	\$22.5	\$25.4	\$19.66
George Lombard	1997	26	4	-0.8	8.1	\$25.0	\$25.9	\$20.01
Russell Branyan	1997	26	4	10.8	13.0	\$30.0	\$32.3	\$24.94
Mike Cameron	1997	31	1	49.5	16.1	\$25.0	\$25.6	\$19.82
Billy Koch	1997	33	2	4.3	5.3	\$29.5	\$32.2	\$24.87

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Eli Marrero	1997	33	2	5.6	8.9	\$22.5	\$21.7	\$16.79
Ben Petrick	1997	35	4	0.4	4.1	\$25.0	\$26.6	\$20.59
Juan Melo	1997	36	2	-0.2	0.1	\$30.0	\$31.5	\$24.36
Kevin McGlinchy	1997	39	2	1	1.5	\$29.5	\$33.6	\$26.01
Jackson Melian	1997	40	4	0	0.0	\$22.5	\$22.6	\$17.49
Kevin Orie	1997	42	1	3.1	5.5	\$14.0	\$16.0	\$12.40
Felix Heredia	1997	43	1	1	8.7	\$14.0	\$16.0	\$12.34
Chris Reitsma	1997	46	2	4	6.3	\$14.0	\$14.3	\$11.04
Willie Martinez	1997	47	2	0	0.0	\$14.0	\$15.6	\$12.07
Ron Wright	1997	48	1	-0.1	0.0	\$15.0	\$16.7	\$12.94
Valerio De Los Santos	1997	52	2	-0.7	10.0	\$14.0	\$14.1	\$10.88
Luis Rivas	1997	55	5	0.3	8.0	\$18.0	\$19.3	\$14.90
Seth Greisinger	1997	55	1	1.7	7.0	\$14.0	\$15.1	\$11.69
Danny Kolb	1997	61	1	0	8.0	\$14.0	\$14.7	\$11.37
Terrence Long	1997	63	1	5.2	7.1	\$12.5	\$13.0	\$10.05
Rafael Medina	1997	64	2	-0.9	1.5	\$14.0	\$14.2	\$10.99
Jarrod Washburn	1997	66	2	22.7	11.3	\$14.0	\$14.1	\$10.94
Kelvim Escobar	1997	67	1	30.1	11.9	\$14.0	\$14.3	\$11.04
Manny Aybar	1997	68	1	1	7.9	\$14.0	\$14.2	\$10.99
Edgard Clemente	1997	71	1	-1.4	1.9	\$12.0	\$12.9	\$9.98
Pat Cline	1997	72	1	0	0.0	\$12.5	\$13.4	\$10.37
Jake Westbrook	1997	75	1	19.6	13.3	\$10.0	\$10.7	\$8.24
Vladimir Nunez	1997	76	1	0.9	11.0	\$10.0	\$10.6	\$8.22
Sidney Ponson	1997	78	2	17.6	11.3	\$10.0	\$10.3	\$7.99
Torii Hunter	1997	79	1	42.5	16.1	\$10.0	\$10.6	\$8.16
Aaron Boone	1997	81	1	9.8	12.3	\$10.5	\$11.0	\$8.53
Bobby Seay	1997	82	1	2.9	8.1	\$10.0	\$10.5	\$8.10
Brett Tomko	1997	84	1	14.8	14.0	\$10.0	\$10.4	\$8.06
Kats Maeda	1997	85	1	0	0.0	\$10.0	\$10.4	\$8.04
Wes Helms	1997	86	1	0.3	12.9	\$10.5	\$10.9	\$8.43
Todd Dunwoody	1997	87	2	-1.6	5.1	\$12.0	\$12.4	\$9.58
Jimmy Anderson	1997	88	1	3.1	5.1	\$10.0	\$10.3	\$7.99
Onan Masaoka	1997	95	1	-0.3	1.5	\$10.0	\$10.2	\$7.85
Nerio Rodriguez	1997	96	1	0.2	6.0	\$10.0	\$10.1	\$7.83
Bobby Estalella2	1997	97	1	2.2	7.7	\$12.5	\$12.6	\$9.76
Chad Green	1997	99	1	0	0.0	\$10.0	\$10.1	\$7.77
Rick Ankiel	1998	1	3	7.2	13.8	\$40.0	\$44.0	\$34.55
Vernon Wells	1998	4	4	24.6	14.1	\$40.0	\$39.2	\$30.78
Ruben Mateo	1998	6	3	-1.6	5.2	\$40.0	\$39.0	\$30.62
Ryan Anderson	1998	7	5	0	0.0	\$60.0	\$55.5	\$43.58
Matt Clement	1998	10	2	16.6	7.8	\$60.0	\$54.0	\$42.40
Dee Brown	1998	11	4	-4.4	9.0	\$40.0	\$45.2	\$35.49
Lance Berkman	1998	13	3	55.5	14.2	\$50.0	\$46.0	\$36.12
Juan Encarnacion	1998	15	1	6.9	10.0	\$40.0	\$34.0	\$26.70
Sean Casey	1998	20	1	16	11.1	\$30.0	\$35.7	\$28.03
Darnell McDonald	1998	21	2	0.8	9.4	\$22.5	\$25.2	\$19.79
Matt Anderson	1998	24	1	0.6	7.0	\$29.5	\$33.3	\$26.17
Eric Milton	1998	25	1	19.5	11.2	\$29.5	\$32.9	\$25.83
Carlos Lee	1998	28	2	28	13.4	\$30.0	\$29.0	\$22.73
Ramon Ortiz2	1998	28	2	5.8	13.8	\$29.5	\$32.5	\$25.48
Francisco Cordero	1998	29	2	13.4	13.0	\$29.5	\$28.5	\$22.35
Grant Roberts	1998	29	3	0.9	3.7	\$29.5	\$30.5	\$23.97
Cesar King	1998	31	1	0	0.0	\$25.0	\$25.6	\$20.12
Mike Caruso	1998	34	1	-1.4	4.4	\$30.0	\$29.4	\$23.08
Rob Bell	1998	35	3	1.3	7.5	\$29.5	\$32.0	\$25.13
Ryan Minor	1998	35	1	-2.8	3.1	\$32.0	\$30.9	\$24.25
Troy Glaus	1998	36	1	35.1	12.2	\$32.0	\$30.4	\$23.87
Rolando Arrojo	1998	37	1	9.9	4.5	\$29.5	\$27.6	\$21.66
A.J. Hinch	1998	42	1	-0.4	6.5	\$12.5	\$14.3	\$11.24
Jason Grilli	1998	44	2	5.2	13.4	\$14.0	\$15.5	\$12.20
Luis Rivera	1998	44	3	1.4	0.5	\$29.5	\$31.9	\$25.02
Ricky Ledee	1998	46	2	1.1	9.1	\$14.0	\$14.9	\$11.71
Julio Ramirez	1998	48	3	-0.6	6.1	\$12.5	\$13.5	\$10.60

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Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Brent Butler	1998	54	2	-2.1	2.0	\$18.0	\$18.9	\$14.84
Ed Yarnall	1998	55	2	0	1.0	\$14.0	\$15.0	\$11.76
Magglio Ordonez	1998	56	1	37.8	14.1	\$14.0	\$15.1	\$11.82
Mike Lowell	1998	58	2	26.8	12.1	\$14.0	\$14.5	\$11.38
Ryan Brannan	1998	58	1	0	0.0	\$14.0	\$14.9	\$11.71
Mike Judd	1998	59	1	-0.4	3.7	\$14.0	\$14.8	\$11.65
Damian Jackson	1998	62	1	5.8	10.0	\$18.0	\$18.8	\$14.77
Corey Lee	1998	63	1	-0.2	0.0	\$14.0	\$14.6	\$11.43
Abraham Nunez1	1998	65	1	-1.1	10.8	\$18.0	\$18.5	\$14.56
Shawn Chacon	1998	67	1	3.6	7.1	\$14.0	\$14.3	\$11.21
Wade Miller	1998	69	3	13.1	7.8	\$14.0	\$14.9	\$11.71
Ramon Hernandez2	1998	74	1	24.8	14.0	\$12.5	\$13.3	\$10.48
Gil Meche	1998	78	2	16.9	11.3	\$10.0	\$10.5	\$8.26
Robinson Checo	1998	79	1	0	2.0	\$10.0	\$10.6	\$8.28
Lorenzo Barcelo	1998	80	1	0.7	1.7	\$10.0	\$10.5	\$8.26
Javier Vazquez	1998	83	1	56.3	13.5	\$10.0	\$10.5	\$8.21
David Ortiz	1998	84	1	40.8	16.1	\$7.5	\$7.8	\$6.14
Nelson Lara	1998	85	1	0	0.0	\$10.0	\$10.4	\$8.17
Jeff Wallace	1998	90	1	-0.2	4.1	\$10.0	\$10.3	\$8.07
Dennys Reyes	1998	91	1	5.3	13.7	\$10.0	\$10.3	\$8.05
Orlando Cabrera	1998	92	1	25.9	14.1	\$10.0	\$10.2	\$8.03
Lariel Gonzalez	1998	94	1	0	0.0	\$10.0	\$10.2	\$7.99
Geoff Goetz	1998	96	1	0	0.0	\$10.0	\$10.1	\$7.95
Daryle Ward	1998	97	1	-1.6	10.4	\$7.5	\$7.6	\$5.95
Kevin Witt	1998	99	1	-1.4	8.0	\$7.5	\$7.5	\$5.92
Chris Enochs	1998	100	1	0	0.0	\$10.0	\$10.0	\$7.87
J.D. Drew	1999	1	1	44.9	13.1	\$40.0	\$56.0	\$44.64
Corey Patterson	1999	2	3	9.6	11.0	\$40.0	\$44.0	\$35.07
Pat Burrell	1999	2	2	18.3	11.4	\$40.0	\$39.0	\$31.09
Sean Burroughs	1999	4	4	5.1	10.1	\$65.0	\$73.5	\$58.55
Brad Penny	1999	5	2	25.4	12.5	\$60.0	\$54.0	\$43.05
Carlos Pena	1999	5	3	17.5	12.0	\$55.0	\$52.3	\$41.65
Nick Johnson	1999	5	4	15.1	10.9	\$50.0	\$47.5	\$37.86
Michael Barrett	1999	6	1	5.8	10.6	\$10.0	\$11.5	\$9.17
Pablo Ozuna	1999	8	2	-1.2	8.4	\$57.5	\$55.5	\$44.23
Rafael Furcal	1999	8	2	33.2	12.4	\$57.5	\$56.4	\$44.92
Drew Henson	1999	9	4	-0.1	1.1	\$65.0	\$61.8	\$49.22
Alex Escobar	1999	11	4	1.2	5.3	\$40.0	\$39.8	\$31.73
Austin Kearns	1999	11	3	17.9	11.1	\$40.0	\$37.4	\$29.81
Mark Mulder	1999	12	2	18.9	8.2	\$60.0	\$72.3	\$57.63
Matt Riley	1999	15	2	-0.4	5.7	\$60.0	\$74.1	\$59.07
Alfonso Soriano	1999	16	3	39.5	14.0	\$22.5	\$24.4	\$19.46
Michael Cuddyer	1999	17	5	16.2	12.0	\$22.5	\$23.4	\$18.65
A.J. Burnett	1999	20	2	36.8	14.1	\$29.5	\$35.1	\$27.98
Dernell Stenson	1999	22	3	0.5	0.1	\$22.5	\$24.3	\$19.37
Ryan Bradley	1999	25	1	0	0.1	\$29.5	\$32.9	\$26.22
Michael Restovich	1999	26	4	0	4.6	\$22.5	\$25.5	\$20.36
Tony Armas2	1999	27	2	4.3	8.9	\$29.5	\$31.4	\$25.04
Carlos Febles	1999	30	1	1	4.9	\$30.0	\$31.2	\$24.87
Odalis Perez	1999	31	1	14.8	10.1	\$29.5	\$30.2	\$24.10
Felipe Lopez	1999	32	3	9.6	10.1	\$32.0	\$36.2	\$28.83
Gabe Kapler	1999	34	1	5.1	11.9	\$25.0	\$24.5	\$19.53
Joe Crede	1999	36	4	12.9	9.0	\$32.0	\$32.5	\$25.89
Milton Bradley	1999	36	2	19.2	10.8	\$14.0	\$14.7	\$11.72
Calvin Pickering	1999	38	1	-0.1	6.6	\$30.0	\$27.6	\$22.00
Peter Bergeron	1999	40	2	-4.1	4.6	\$25.0	\$27.6	\$22.02
Angel Pena	1999	41	1	0.1	2.7	\$12.5	\$14.4	\$11.46
Chad Hutchinson	1999	42	2	-0.4	0.0	\$14.0	\$16.0	\$12.72
Choo Freeman	1999	42	2	-1.3	2.3	\$12.5	\$13.3	\$10.61
Mitch Meluskey	1999	43	1	2.3	5.1	\$12.5	\$14.3	\$11.36
Wes Anderson	1999	43	3	0	0.0	\$14.0	\$14.8	\$11.83
Octavio Dotel	1999	45	1	14.4	13.8	\$14.0	\$15.8	\$12.61
Jayson Werth	1999	48	4	29	11.1	\$14.0	\$14.4	\$11.44

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Ronnie Belliard	1999	49	1	17.6	12.0	\$14.0	\$15.5	\$12.39
Jeff Weaver	1999	51	1	23	11.5	\$14.0	\$15.4	\$12.28
Eric DuBose	1999	53	1	0.7	3.6	\$14.0	\$15.3	\$12.16
Jeff Austin	1999	55	1	-0.4	1.9	\$14.0	\$15.1	\$12.05
John Curtice	1999	56	1	0	0.0	\$14.0	\$15.1	\$12.00
Orber Moreno	1999	57	2	0.8	5.2	\$14.0	\$14.1	\$11.22
Freddy Garcia3	1999	61	1	32.6	14.5	\$14.0	\$14.7	\$11.72
Junior Herndon	1999	62	1	-0.6	0.2	\$14.0	\$14.6	\$11.66
Aaron Myette	1999	63	2	0	5.1	\$14.0	\$14.1	\$11.22
Jeremy Giambi	1999	64	1	2.5	4.9	\$14.0	\$14.5	\$11.55
Kelly Dransfeldt	1999	65	1	-0.5	5.1	\$18.0	\$18.5	\$14.78
Ted Lilly	1999	66	1	24.5	14.1	\$14.0	\$14.4	\$11.44
Cristian Guzman	1999	68	1	8.1	11.4	\$18.0	\$18.3	\$14.56
Gary Matthews2	1999	73	1	12.9	11.0	\$12.0	\$12.8	\$10.24
Marlon Anderson	1999	83	1	5.3	10.6	\$14.0	\$14.6	\$11.66
Warren Morris	1999	84	1	2.2	4.5	\$14.0	\$14.6	\$11.63
Guillermo Mota	1999	88	1	3.5	13.4	\$10.0	\$10.3	\$8.23
Jason Marquis	1999	89	2	10.4	13.1	\$10.0	\$10.3	\$8.19
Mike Darr	1999	94	1	3	2.4	\$10.0	\$10.2	\$8.11
Chad Harville	1999	95	1	-0.9	7.1	\$10.0	\$10.2	\$8.09
Randy Wolf	1999	96	1	27.1	13.3	\$10.0	\$10.1	\$8.07
Scott Williamson	1999	97	1	7.3	8.2	\$10.0	\$10.1	\$8.05
Adam Kennedy	1999	98	1	18.3	13.1	\$10.5	\$10.6	\$8.43
Josh Beckett	2000	1	3	38.7	11.7	\$60.0	\$66.0	\$53.41
Josh Hamilton	2000	1	4	26.1	6.5	\$40.0	\$50.0	\$40.46
Ben Sheets	2000	5	2	27.5	11.5	\$60.0	\$57.9	\$46.86
CC Sabathia	2000	7	2	62.1	12.5	\$60.0	\$60.6	\$49.04
Wilson Betemit	2000	8	4	2.6	12.0	\$50.0	\$56.3	\$45.52
Kip Wells	2000	14	1	10.6	13.0	\$60.0	\$52.5	\$42.49
Chin-Feng Chen	2000	17	3	-0.1	2.8	\$22.5	\$24.3	\$19.67
Gookie Dawkins	2000	21	1	-0.9	3.9	\$30.0	\$35.3	\$28.53
Hee Seop Choi	2000	22	4	2.5	3.1	\$30.0	\$26.7	\$21.61
Eric Munson	2000	23	2	-1.8	9.2	\$32.0	\$36.0	\$29.13
Chris George2	2000	25	2	1.5	3.2	\$29.5	\$29.8	\$24.11
Wilfredo Rodriguez	2000	25	2	-0.1	0.0	\$29.5	\$33.9	\$27.46
Abraham Nunez	2000	30	2	-0.9	2.1	\$22.5	\$24.6	\$19.94
Kurt Ainsworth	2000	30	4	0.4	2.7	\$29.5	\$32.3	\$26.14
Jack Cust	2000	31	3	6.5	9.8	\$22.5	\$24.2	\$19.57
Jimmy Rollins	2000	31	2	45.5	13.0	\$30.0	\$31.2	\$25.25
Jon Garland	2000	32	1	22.1	12.9	\$29.5	\$29.8	\$24.11
Adam Dunn	2000	33	2	22.7	12.2	\$25.0	\$28.4	\$22.96
Danys Baez	2000	39	2	4.1	10.2	\$29.5	\$30.7	\$24.83
Barry Zito	2000	41	1	29.3	13.2	\$14.0	\$16.1	\$13.03
Aubrey Huff	2000	43	2	17.3	12.2	\$15.0	\$15.1	\$12.20
Matthew LeCroy	2000	44	1	0.5	7.5	\$12.5	\$14.2	\$11.48
D'Angelo Jimenez	2000	46	2	7.8	8.0	\$18.0	\$18.4	\$14.86
Jason Standridge	2000	47	2	-1	5.8	\$14.0	\$15.5	\$12.58
Eric Gagne	2000	49	1	11.8	9.1	\$14.0	\$15.5	\$12.58
Steve Lomasney	2000	50	1	0.1	0.0	\$12.5	\$13.8	\$11.18
Brad Baisley	2000	52	2	0	0.0	\$14.0	\$14.4	\$11.67
Jesus Colome	2000	53	2	-0.3	8.9	\$14.0	\$14.7	\$11.90
Wascar Serrano	2000	53	2	-0.1	0.4	\$14.0	\$15.3	\$12.35
Marcus Giles	2000	54	2	18	6.5	\$18.0	\$18.6	\$15.08
Pat Strange	2000	63	2	-0.6	0.7	\$14.0	\$14.1	\$11.39
Adam Eaton1	2000	64	1	10.2	9.2	\$14.0	\$14.5	\$11.73
Wily Mo Pena	2000	65	3	0.3	9.0	\$12.0	\$12.6	\$10.22
Cesar Izturis	2000	67	1	3	12.3	\$18.0	\$18.4	\$14.86
Jason Romano	2000	68	1	-0.7	3.2	\$12.5	\$12.7	\$10.27
Kyle Snyder	2000	70	1	1.7	4.9	\$14.0	\$14.1	\$11.39
Mike Lamb	2000	71	1	2.3	10.2	\$7.5	\$8.1	\$6.52
Dan Reichert	2000	75	1	3.3	4.2	\$10.0	\$10.7	\$8.62
Adam Everett	2000	76	1	8.7	9.8	\$10.5	\$11.2	\$9.03
B.J. Garbe	2000	79	1	0	0.0	\$10.0	\$10.6	\$8.54

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Chip Ambres	2000	80	1	-0.4	3.2	\$10.0	\$10.5	\$8.52
Byung-Hyun Kim	2000	81	1	11	8.3	\$10.0	\$10.5	\$8.50
Ryan Christianson	2000	85	1	0	0.0	\$12.5	\$13.0	\$10.52
Jason Jennings	2000	87	1	15.5	8.0	\$10.0	\$10.4	\$8.38
Mario Encarnacion	2000	90	1	-0.5	0.6	\$10.0	\$10.3	\$8.32
Tim Drew	2000	91	1	-0.6	4.4	\$10.0	\$10.3	\$8.30
Ramon Santiago	2000	92	2	4.1	11.4	\$14.0	\$14.3	\$11.56
Adam Piatt	2000	93	1	0.6	3.4	\$10.0	\$10.2	\$8.25
Sun-Woo Kim	2000	94	1	1.5	5.3	\$10.0	\$10.2	\$8.23
J.J. Davis	2000	97	1	-0.9	2.7	\$10.0	\$10.1	\$8.17
Kenny Kelly	2000	100	1	-0.2	5.1	\$10.0	\$10.0	\$8.11
Jon Rauch	2001	4	3	5.6	11.1	\$60.0	\$54.3	\$44.61
Juan Cruz	2001	6	2	4.2	11.0	\$60.0	\$57.0	\$46.83
Ichiro Suzuki	2001	9	1	54.9	12.5	\$40.0	\$40.0	\$32.86
Francisco Rodriguez ³	2001	10	2	16.3	11.0	\$60.0	\$53.4	\$43.87
Joe Borchart	2001	12	3	-1.5	4.9	\$40.0	\$47.0	\$38.62
Miguel Cabrera	2001	12	3	55.1	10.3	\$65.0	\$72.8	\$59.81
Roy Oswalt	2001	13	1	49	12.4	\$60.0	\$54.0	\$44.37
Chin-Hui Tsao	2001	15	4	-0.2	4.0	\$60.0	\$66.9	\$54.97
Antonio Perez	2001	16	2	0	3.4	\$30.0	\$29.4	\$24.16
Nick Neugebauer	2001	17	2	-0.5	1.1	\$29.5	\$32.6	\$26.78
Adam Wainwright	2001	18	4	30.8	8.1	\$29.5	\$32.5	\$26.66
Jerome Williams	2001	19	3	3.8	10.4	\$29.5	\$31.1	\$25.57
Bobby Bradley	2001	20	1	0	0.0	\$29.5	\$35.1	\$28.84
J.R. House	2001	21	2	-0.3	4.9	\$25.0	\$25.6	\$21.05
Donnie Bridges	2001	26	1	0	0.0	\$18.0	\$19.8	\$16.27
Jake Peavy	2001	28	2	38.2	11.3	\$29.5	\$28.9	\$23.75
Matt Belisle	2001	28	2	8.9	10.1	\$29.5	\$30.8	\$25.33
Adrian Gonzalez	2001	31	4	31.3	9.5	\$30.0	\$33.2	\$27.24
Brett Myers	2001	33	2	15.2	10.7	\$29.5	\$26.3	\$21.57
Jose Ortiz ⁴	2001	34	1	-0.1	2.0	\$30.0	\$29.4	\$24.16
Brad Wilkerson	2001	35	2	11.9	7.2	\$25.0	\$27.9	\$22.90
Ben Christensen	2001	37	1	0	0.0	\$29.5	\$27.6	\$22.66
Bud Smith	2001	39	1	1.3	1.1	\$29.5	\$26.7	\$21.94
Chris Snelling	2001	39	3	0.2	6.0	\$22.5	\$23.6	\$19.41
Xavier Nady	2001	39	3	4.6	12.0	\$22.5	\$24.3	\$19.97
Adam Johnson	2001	41	2	-0.4	2.2	\$14.0	\$14.6	\$11.96
Albert Pujols	2001	42	1	87.1	12.3	\$12.0	\$13.7	\$11.29
Matt Ginter	2001	44	1	0.9	7.9	\$14.0	\$15.9	\$13.06
Tim Redding	2001	49	1	3.5	8.3	\$14.0	\$15.5	\$12.77
Joe Torres	2001	50	1	0	0.0	\$14.0	\$15.5	\$12.71
Matt McClendon	2001	51	1	0	0.0	\$14.0	\$15.4	\$12.65
Kevin Mench	2001	56	1	8.1	8.5	\$14.0	\$15.1	\$12.37
Mike Bynum	2001	58	1	-1.2	2.1	\$14.0	\$14.9	\$12.25
Carl Crawford	2001	59	2	38.8	11.2	\$14.0	\$14.4	\$11.85
Jason Hart	2001	59	1	0	0.1	\$15.0	\$15.9	\$13.06
Tony Torcato	2001	60	2	-0.2	2.7	\$14.0	\$15.1	\$12.37
Danny Wright	2001	61	1	0	0.0	\$14.0	\$14.7	\$12.08
Alex Cintron	2001	62	1	-1.7	7.8	\$18.0	\$18.8	\$15.45
Brian Cole	2001	64	1	0	0.0	\$14.0	\$14.5	\$11.91
Jovanny Cedeno	2001	65	1	0	0.0	\$14.0	\$14.4	\$11.85
Adrian Hernandez	2001	66	1	-0.7	3.0	\$14.0	\$14.4	\$11.79
Brandon Inge	2001	67	1	15.4	12.3	\$18.0	\$18.4	\$15.08
Carlos Zambrano	2001	68	2	35.8	11.1	\$14.0	\$14.9	\$12.28
Luis Montanez	2001	73	1	-1.6	3.4	\$10.0	\$10.7	\$8.79
Dane Sardinha	2001	74	1	-0.8	7.8	\$12.5	\$13.3	\$10.96
Brad Baker	2001	76	1	0	0.0	\$10.0	\$10.6	\$8.73
Mike MacDougal	2001	79	1	2.7	10.6	\$10.0	\$10.6	\$8.67
Joel Pineiro	2001	80	1	19.2	11.1	\$10.0	\$10.5	\$8.65
Ryan Ludwick	2001	81	1	13.5	11.3	\$10.0	\$10.5	\$8.63
Justin Miller	2001	84	1	1.1	8.3	\$10.0	\$10.4	\$8.57
Lance Niekro	2001	85	1	-0.2	3.7	\$7.5	\$7.8	\$6.41
Tony Blanco	2001	87	2	-0.6	0.5	\$14.0	\$14.4	\$11.82

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
David Espinosa	2001	90	1	0	0.0	\$14.0	\$14.4	\$11.82
Juan Uribe	2001	94	1	19.3	12.5	\$10.5	\$10.7	\$8.78
Keith Reed	2001	96	1	-0.2	0.0	\$10.0	\$10.1	\$8.32
Joe Lawrence	2001	99	1	-1	0.3	\$14.0	\$14.1	\$11.56
Joe Mauer	2002	1	4	44	9.4	\$55.0	\$71.5	\$59.64
Mark Teixeira	2002	1	2	40.7	10.2	\$55.0	\$66.0	\$55.05
Mark Prior	2002	2	1	16.3	4.2	\$60.0	\$81.0	\$67.56
Hank Blalock	2002	3	1	9.6	8.2	\$65.0	\$84.5	\$70.48
Jose Reyes1	2002	3	2	36.7	10.3	\$57.5	\$70.2	\$58.51
Casey Kotchman	2002	6	4	2.6	9.1	\$55.0	\$48.1	\$40.14
Brandon Phillips	2002	7	2	26.7	11.0	\$57.5	\$51.8	\$43.17
Gavin Floyd	2002	9	4	15.1	8.7	\$60.0	\$62.4	\$52.05
Justin Morneau	2002	14	3	19.7	10.3	\$55.0	\$67.9	\$56.66
Angel Berroa	2002	15	1	0.4	7.9	\$57.5	\$48.9	\$40.77
Dennis Tankersley	2002	16	1	-0.4	2.3	\$29.5	\$36.9	\$30.76
Victor Martinez	2002	16	2	28.8	11.1	\$25.0	\$26.9	\$22.42
Dustin McGowan	2002	18	4	5.8	8.2	\$29.5	\$32.6	\$27.19
Bobby Jenks	2002	24	4	8.1	6.0	\$29.5	\$31.9	\$26.58
Carlos Hernandez3	2002	24	1	1.1	3.1	\$30.0	\$33.9	\$28.28
John VanBenschoten	2002	24	3	-1	4.3	\$29.5	\$32.6	\$27.19
Ty Howington	2002	25	1	0	0.0	\$29.5	\$32.9	\$27.44
Marlon Byrd	2002	26	2	18.7	11.1	\$22.5	\$25.5	\$21.30
Rafael Soriano	2002	27	2	9.6	11.4	\$29.5	\$31.6	\$26.33
Boof Bonser	2002	29	1	3.9	4.4	\$29.5	\$31.1	\$25.96
Colby Lewis	2002	32	2	10	10.3	\$29.5	\$31.6	\$26.33
Corwin Malone	2002	32	1	0	0.0	\$29.5	\$29.8	\$24.85
Kazuhisa Ishii	2002	35	1	0	3.5	\$29.5	\$28.5	\$23.75
Josh Phelps	2002	36	1	2.9	8.3	\$30.0	\$28.5	\$23.77
Brandon Claussen	2002	37	1	2.1	3.0	\$29.5	\$27.6	\$23.01
John Buck	2002	43	2	10.5	9.3	\$12.5	\$13.5	\$11.26
Jimmy Journell	2002	44	1	-0.2	1.8	\$14.0	\$15.9	\$13.25
Aaron Heilman	2002	45	2	2.7	8.1	\$14.0	\$14.7	\$12.26
Clint Nageotte	2002	45	4	-0.1	1.9	\$14.0	\$14.4	\$11.97
Dave Kelton	2002	45	1	-0.2	1.0	\$14.0	\$15.8	\$13.20
Kelly Johnson	2002	47	1	16.4	8.3	\$18.0	\$20.2	\$16.82
Bobby Hill	2002	48	1	0.5	3.2	\$18.0	\$20.1	\$16.74
Mario Ramos	2002	49	1	-0.2	0.0	\$14.0	\$15.5	\$12.96
Jimmy Gobble	2002	50	1	3.1	5.9	\$14.0	\$15.5	\$12.90
Chris Burke	2002	51	2	0.7	4.9	\$18.0	\$19.4	\$16.22
Jason Lane	2002	53	2	1.8	5.4	\$14.0	\$14.9	\$12.41
Mark Phillips	2002	54	2	0	0.0	\$14.0	\$14.1	\$11.79
Juan Rivera	2002	55	2	7.4	11.1	\$14.0	\$14.7	\$12.26
Nate Cornejo	2002	55	1	1	2.7	\$14.0	\$15.1	\$12.61
Mike Jones_x	2002	56	3	0	0.0	\$14.0	\$14.9	\$12.47
Dewon Brazelton	2002	57	2	-0.6	3.7	\$14.0	\$14.4	\$12.03
Denny Bautista	2002	59	2	0.8	6.2	\$14.0	\$15.0	\$12.50
Seung Song	2002	60	1	0	0.0	\$14.0	\$14.8	\$12.32
Brett Evert	2002	66	1	0	0.0	\$14.0	\$14.4	\$11.97
Nic Jackson	2002	68	2	0	0.0	\$14.0	\$14.6	\$12.17
Ricardo Rodriguez	2002	69	1	0.9	3.0	\$14.0	\$14.1	\$11.79
Gabe Gross	2002	72	2	5	6.2	\$10.0	\$10.7	\$8.93
Corey Smith	2002	73	1	0	0.0	\$10.5	\$11.2	\$9.37
John-Ford Griffin	2002	76	1	0.2	2.1	\$10.0	\$10.6	\$8.86
Jake Gautreau	2002	77	1	0	0.0	\$14.0	\$14.8	\$12.38
Kenny Baugh	2002	79	1	0	0.0	\$10.0	\$10.6	\$8.80
Orlando Hudson	2002	81	1	22.1	10.2	\$14.0	\$14.7	\$12.26
Chris Narveson	2002	86	1	4.3	6.6	\$10.0	\$10.4	\$8.65
J.D. Martin	2002	88	1	0	1.0	\$10.0	\$10.3	\$8.61
Erik Bedard	2002	90	1	22.8	11.5	\$10.0	\$10.3	\$8.57
Eric Byrnes	2002	91	1	11	9.7	\$10.0	\$10.3	\$8.55
Ramon Vazquez	2002	92	1	2.2	8.1	\$14.0	\$14.3	\$11.94
Omar Infante	2002	95	1	14.1	11.1	\$14.0	\$14.2	\$11.85
Ryan Dittfurth	2002	99	1	0	0.0	\$10.0	\$10.1	\$8.38

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
B.J. Upton	2003	2	2	21.3	9.2	\$35.0	\$33.3	\$28.16
Rocco Baldelli	2003	2	1	7.6	7.5	\$35.0	\$47.3	\$40.01
Edwin Jackson	2003	4	3	18.2	10.1	\$60.0	\$68.1	\$57.67
Jesse Foppert	2003	5	1	-0.1	2.2	\$60.0	\$72.0	\$60.97
Francisco Liriano	2003	6	2	17.9	8.1	\$60.0	\$68.1	\$57.67
Jose Contreras	2003	6	1	18	10.2	\$60.0	\$69.0	\$58.43
Scott Kazmir	2003	7	3	18.6	9.1	\$60.0	\$58.5	\$49.54
Hideki Matsui	2003	8	1	12.7	9.3	\$40.0	\$42.0	\$35.57
Andy Marte	2003	9	4	-2.1	5.3	\$65.0	\$79.3	\$67.15
Hanley Ramirez	2003	10	4	36.8	8.0	\$57.5	\$65.0	\$55.02
Prince Fielder	2003	10	4	27.5	8.3	\$55.0	\$58.9	\$49.84
Jeff Francoeur	2003	14	3	6	8.1	\$40.0	\$45.2	\$38.28
Zack Greinke	2003	14	2	39.1	9.4	\$60.0	\$58.8	\$49.79
Jason Stokes	2003	15	2	0	0.0	\$55.0	\$54.7	\$46.34
Jeremy Bonderman	2003	20	1	16.5	10.5	\$29.5	\$35.1	\$29.73
David Wright	2003	21	2	49.9	9.2	\$32.0	\$35.7	\$30.22
Jeff Mathis	2003	22	4	-1.5	8.1	\$25.0	\$27.8	\$23.50
Brad Nelson	2003	23	2	-0.4	0.7	\$30.0	\$29.0	\$24.52
Sean Burnett	2003	25	2	1	9.0	\$29.5	\$33.5	\$28.35
Angel Guzman	2003	26	3	0.8	3.4	\$29.5	\$32.2	\$27.23
Scott Hairston	2003	26	2	5	9.4	\$22.5	\$23.4	\$19.82
Felix Pie	2003	27	5	-1.2	6.5	\$22.5	\$24.6	\$20.86
Mike Hinckley	2003	29	3	-0.2	0.7	\$14.0	\$14.7	\$12.45
Rich Harden	2003	29	1	16.7	8.2	\$29.5	\$31.1	\$26.36
Cliff Lee2	2003	30	1	47	11.0	\$22.5	\$23.4	\$19.82
James Loney	2003	34	4	8.7	7.5	\$30.0	\$33.9	\$28.71
Jonathan Figueroa	2003	35	1	0	0.0	\$29.5	\$28.5	\$24.11
Jose Lopez	2003	38	2	5.2	8.2	\$32.0	\$34.7	\$29.40
Aaron Cook	2003	41	1	18.6	10.1	\$14.0	\$16.1	\$13.63
Franklyn German	2003	42	1	-1.1	5.7	\$14.0	\$16.0	\$13.57
Dontrelle Willis	2003	43	1	19.7	8.4	\$14.0	\$16.0	\$13.52
Travis Hafner	2003	46	1	20.8	11.2	\$12.0	\$13.5	\$11.43
Taylor Buchholz	2003	50	2	2.8	5.1	\$14.0	\$14.1	\$11.97
Johan Santana	2003	51	1	48	12.4	\$14.0	\$15.4	\$13.04
Shin-Soo Choo	2003	51	2	23.6	8.4	\$12.5	\$13.4	\$11.38
Bryan Bullington	2003	52	2	-0.1	5.0	\$14.0	\$14.9	\$12.66
Andy Sisco	2003	53	2	0.5	2.1	\$14.0	\$14.4	\$12.21
Jeremy Guthrie	2003	53	2	12.5	9.1	\$14.0	\$14.7	\$12.45
Kris Honel	2003	55	2	0	0.0	\$14.0	\$14.5	\$12.27
Khalil Greene	2003	57	2	7.8	6.1	\$18.0	\$19.1	\$16.16
Bubba Nelson	2003	58	2	0	0.0	\$14.0	\$14.4	\$12.15
Clint Everts	2003	58	2	0	0.0	\$14.0	\$14.8	\$12.51
Mike Gosling	2003	59	1	-0.8	5.1	\$14.0	\$14.8	\$12.57
Lyle Overbay	2003	65	1	11.4	12.0	\$15.0	\$15.5	\$13.08
Justin Huber	2003	66	2	-1.1	4.2	\$12.5	\$13.3	\$11.27
Macay McBride	2003	68	1	0.9	2.1	\$14.0	\$14.2	\$12.03
Bobby Basham	2003	69	1	0	0.0	\$14.0	\$14.1	\$11.97
Josh Karp	2003	71	1	0	0.0	\$14.0	\$15.1	\$12.74
Chris Gruler	2003	77	1	0	0.0	\$10.0	\$10.6	\$8.98
Ben Kozlowski	2003	80	1	-0.3	0.0	\$10.0	\$10.5	\$8.91
Chase Utley	2003	81	1	54.9	10.5	\$14.0	\$14.7	\$12.45
Todd Linden	2003	82	1	0.3	4.1	\$7.5	\$7.9	\$6.65
Laynce Nix	2003	85	1	2.8	10.1	\$10.0	\$10.4	\$8.81
Jose Castillo	2003	86	1	-2	4.5	\$14.0	\$14.5	\$12.30
Don Levinski	2003	89	1	0	0.0	\$40.0	\$41.2	\$34.89
Ben Hendrickson	2003	90	1	0.2	2.0	\$10.0	\$10.3	\$8.70
Corey Hart	2003	91	1	15	8.4	\$7.5	\$7.7	\$6.51
Jason Arnold	2003	97	1	0	0.0	\$10.0	\$10.1	\$8.55
Seth McClung	2003	98	1	-0.7	6.5	\$10.0	\$10.1	\$8.53
Delmon Young	2004	1	4	-1.2	7.1	\$40.0	\$54.0	\$46.43
Felix Hernandez	2004	2	2	41.4	8.2	\$60.0	\$75.0	\$64.48
Ian Stewart	2004	4	5	2.4	4.8	\$65.0	\$65.7	\$56.44
Jeremy Hermida	2004	4	3	1.7	6.7	\$40.0	\$50.0	\$42.99

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Rickie Weeks	2004	5	2	17	9.9	\$57.5	\$66.1	\$56.85
Alex Rios	2004	6	1	26.5	9.4	\$40.0	\$46.0	\$39.55
Kazuo Matsui	2004	7	1	0	6.1	\$57.5	\$63.3	\$54.38
Greg Miller	2004	8	2	0	0.0	\$60.0	\$65.1	\$55.97
Grady Sizemore	2004	9	1	29.3	7.2	\$10.0	\$10.0	\$8.60
Lastings Milledge	2004	9	3	0.1	4.9	\$40.0	\$38.6	\$33.19
Matt Cain	2004	10	3	28.3	8.1	\$60.0	\$55.2	\$47.46
Dallas McPherson	2004	12	2	1.2	6.7	\$65.0	\$75.4	\$64.82
Adam Loewen	2004	13	2	1.5	5.4	\$40.0	\$42.2	\$36.28
Cole Hamels	2004	17	3	31.6	7.4	\$29.5	\$32.3	\$27.77
J.J. Hardy	2004	19	2	24.3	8.5	\$30.0	\$34.4	\$29.53
Josh Barfield	2004	20	2	1.1	3.2	\$22.5	\$22.7	\$19.54
Nick Markakis	2004	21	3	20	7.5	\$22.5	\$24.0	\$20.60
Jeff Francis	2004	23	2	17.2	9.1	\$29.5	\$31.4	\$27.01
Jeremy Reed	2004	25	2	2	6.6	\$22.5	\$23.7	\$20.41
Ervin Santana	2004	29	1	19.6	8.4	\$29.5	\$31.1	\$26.76
Franklin Gutierrez	2004	31	2	13.3	8.1	\$22.5	\$25.8	\$22.15
Bobby Crosby	2004	32	1	6.7	7.0	\$30.0	\$30.3	\$26.05
Scott Olsen	2004	34	3	3.8	5.2	\$29.5	\$33.2	\$28.53
Guillermo Quiroz	2004	35	2	-1.5	8.9	\$25.0	\$26.8	\$23.00
Kyle Sleeth	2004	36	2	0	0.0	\$29.5	\$31.0	\$26.63
Sergio Santos	2004	37	2	3.1	3.5	\$29.5	\$32.7	\$28.15
Merkin Valdez	2004	40	2	-0.3	7.2	\$29.5	\$32.7	\$28.15
Dioner Navarro	2004	41	1	4.2	9.1	\$12.5	\$14.4	\$12.36
Michael Aubrey	2004	41	2	0.1	1.4	\$14.0	\$14.8	\$12.70
Joe Blanton	2004	43	1	17.9	9.0	\$14.0	\$16.0	\$13.72
Jeff Allison	2004	44	1	0	0.0	\$14.0	\$15.9	\$13.66
Ryan Wagner	2004	46	1	-0.2	3.8	\$14.0	\$15.8	\$13.54
Blake Hawksworth	2004	47	1	-0.8	2.3	\$14.0	\$15.7	\$13.48
John Maine	2004	54	1	4	8.7	\$14.0	\$15.2	\$13.06
John Danks	2004	56	4	16.4	6.5	\$14.0	\$14.6	\$12.52
Justin Jones	2004	56	1	0	0.0	\$14.0	\$15.1	\$12.94
Jesse Crain	2004	63	2	6.4	8.9	\$14.0	\$14.9	\$12.79
Travis Blackley	2004	63	1	-0.7	9.2	\$14.0	\$14.6	\$12.52
Aaron Hill	2004	64	2	20.5	8.4	\$18.0	\$18.9	\$16.29
Ryan Harvey	2004	65	2	0	0.0	\$14.0	\$14.4	\$12.40
J.D. Durbin	2004	66	2	0.4	3.0	\$14.0	\$14.2	\$12.22
Dustin Nippert	2004	67	2	1.2	5.1	\$14.0	\$14.9	\$12.82
Chris Lubanski	2004	68	1	0	0.0	\$14.0	\$14.2	\$12.22
Manny Parra	2004	69	2	4.8	6.2	\$14.0	\$14.1	\$12.10
Alberto Callaspo	2004	71	2	10.5	7.2	\$10.5	\$11.2	\$9.59
Adam LaRoche	2004	73	1	10.5	9.5	\$7.5	\$8.0	\$6.90
Jason Bay	2004	74	1	20.1	10.2	\$25.0	\$26.7	\$22.94
Matt Moses	2004	75	2	0	0.0	\$10.5	\$11.1	\$9.55
Roberto Hernandez2	2004	76	1	8.1	7.5	\$10.0	\$10.6	\$9.13
Kelly Shoppach	2004	78	1	7.5	8.3	\$12.5	\$13.2	\$11.36
Dan Meyer2	2004	82	1	0	5.8	\$10.0	\$10.5	\$9.01
Francisco Rosario	2004	87	1	-0.1	1.4	\$10.0	\$10.4	\$8.90
Joey Gathright	2004	87	2	3	7.3	\$12.0	\$12.3	\$10.57
Matt Peterson	2004	88	1	0	0.0	\$10.0	\$10.3	\$8.88
Bobby Brownlie	2004	92	1	0	0.0	\$10.0	\$10.2	\$8.79
Jayson Nix	2004	94	1	1.9	5.4	\$14.0	\$14.2	\$12.25
Brent Clevlen	2004	98	1	0.3	4.0	\$10.0	\$10.1	\$8.66
Jake Dittler	2004	99	1	0	0.0	\$10.0	\$10.1	\$8.64
Brandon Wood	2005	3	4	-2.9	4.4	\$57.5	\$62.4	\$54.45
Homer Bailey	2005	5	4	10.4	6.3	\$60.0	\$66.9	\$58.39
Joel Guzman	2005	5	2	-0.1	1.3	\$55.0	\$46.8	\$40.80
Chad Billingsley	2005	7	2	17.5	6.8	\$60.0	\$54.0	\$47.13
Adam Miller	2005	16	5	0	0.0	\$29.5	\$26.7	\$23.30
Conor Jackson	2005	17	2	3.2	6.2	\$22.5	\$24.1	\$21.01
Jason Kubel	2005	17	2	2.7	9.0	\$22.5	\$21.0	\$18.36
Andy LaRoche	2005	19	4	0.2	6.1	\$32.0	\$30.9	\$26.95
Carlos Quentin	2005	20	2	10.7	7.0	\$22.5	\$26.4	\$23.08

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Jeff Niemann	2005	20	4	6.1	4.4	\$29.5	\$31.7	\$27.68
Brian Dopirak	2005	21	1	0	0.0	\$30.0	\$35.3	\$30.77
Nick Swisher	2005	24	1	27.6	9.1	\$30.0	\$33.9	\$29.59
Billy Butler	2005	25	3	9.8	6.4	\$25.0	\$28.5	\$24.88
Jose Capellan	2005	25	1	-0.5	3.6	\$29.5	\$32.9	\$28.71
Chris Nelson	2005	26	1	-2.1	3.2	\$32.0	\$35.2	\$30.72
Ryan Howard	2005	27	1	20.2	8.8	\$30.0	\$32.6	\$28.41
Daric Barton	2005	28	4	7.6	6.1	\$30.0	\$34.2	\$29.85
Zach Duke	2005	34	1	10.9	8.2	\$29.5	\$28.9	\$25.23
Eric Duncan	2005	36	2	0	0.0	\$32.0	\$33.6	\$29.33
Brian Anderson ³	2005	37	2	0	4.1	\$29.5	\$33.5	\$29.22
Jonathan Papelbon	2005	37	2	18	8.2	\$29.5	\$30.5	\$26.65
Erick Aybar	2005	39	3	14.9	7.4	\$30.0	\$33.5	\$29.20
Anthony Reyes	2005	41	2	0.5	3.8	\$14.0	\$15.9	\$13.87
Russell Martin	2005	42	2	25.1	7.4	\$12.5	\$12.9	\$11.24
Ryan Sweeney	2005	42	3	8	7.1	\$12.5	\$13.0	\$11.35
Neil Walker	2005	43	4	9.3	4.1	\$18.0	\$18.6	\$16.26
Brian McCann	2005	44	1	29.2	8.3	\$12.5	\$14.2	\$12.38
Mark Rogers	2005	44	2	1.1	2.0	\$14.0	\$15.5	\$13.56
Josh Fields ²	2005	45	2	-0.1	4.1	\$15.0	\$15.1	\$13.16
Yusmeiro Petit	2005	46	2	0.5	7.4	\$14.0	\$15.0	\$13.07
Brandon McCarthy	2005	49	1	11	8.4	\$14.0	\$15.5	\$13.56
Philip Humber	2005	50	2	2.6	7.0	\$14.0	\$14.7	\$12.83
Thomas Diamond	2005	52	2	0	0.2	\$14.0	\$14.6	\$12.77
Jeremy Sowers	2005	53	2	3.1	3.3	\$14.0	\$15.1	\$13.14
Kyle Davies	2005	53	1	5.3	6.2	\$14.0	\$15.3	\$13.32
Edwin Encarnacion	2005	56	1	15.7	8.2	\$15.0	\$16.1	\$14.07
Curtis Granderson	2005	57	1	33.2	9.0	\$12.5	\$13.4	\$11.67
Javier Herrera	2005	68	2	0	0.0	\$14.0	\$15.1	\$13.14
Brandon League	2005	69	1	1.9	9.0	\$14.0	\$14.1	\$12.34
Brad Snyder	2005	71	2	-0.2	0.8	\$10.0	\$10.6	\$9.25
Brandon Moss	2005	72	1	4.2	6.2	\$7.5	\$8.0	\$7.02
Kendrys Morales	2005	76	2	6.4	7.4	\$7.5	\$8.0	\$6.94
Joaquin Arias	2005	77	1	1	7.0	\$10.5	\$11.1	\$9.71
Fred Lewis	2005	78	1	6.5	6.1	\$10.0	\$10.6	\$9.23
Ezequiel Astacio	2005	80	1	-1	1.0	\$10.0	\$10.5	\$9.19
Hayden Penn	2005	81	2	-0.8	4.9	\$10.0	\$10.4	\$9.03
Ubaldo Jimenez	2005	82	2	22.4	7.0	\$10.0	\$10.5	\$9.12
Mark Teahen	2005	85	1	2.1	6.5	\$10.5	\$10.9	\$9.53
Jake Stevens	2005	92	1	0	0.0	\$10.0	\$10.2	\$8.92
Anthony Lerew	2005	93	2	-1.3	4.9	\$10.0	\$10.1	\$8.84
Richie Gardner	2005	93	1	0	0.0	\$10.0	\$10.2	\$8.90
Tadahito Iguchi	2005	96	1	6.7	3.5	\$14.0	\$14.2	\$12.37
Huston Street	2005	97	1	9.9	8.5	\$10.0	\$10.1	\$8.82
Ian Kinsler	2005	98	1	29	7.5	\$14.0	\$14.1	\$12.31
Jay Bruce	2006	1	3	16.3	5.3	\$40.0	\$41.6	\$36.86
Alex Gordon	2006	2	2	20.1	6.5	\$40.0	\$44.0	\$38.99
Justin Upton	2006	2	2	18.5	6.2	\$40.0	\$48.0	\$42.53
Philip Hughes	2006	4	2	10.9	6.4	\$60.0	\$70.5	\$62.47
Stephen Drew	2006	5	1	13.2	7.2	\$57.5	\$69.0	\$61.14
Cameron Maybin	2006	6	4	7.8	5.8	\$35.0	\$32.4	\$28.69
Justin Verlander	2006	8	1	43.6	8.2	\$60.0	\$63.0	\$55.83
Chris Young ⁴	2006	12	2	14.8	7.1	\$35.0	\$43.2	\$38.30
Howie Kendrick	2006	12	1	20.1	7.4	\$57.5	\$53.2	\$47.13
Andrew McCutchen	2006	13	4	27.1	4.3	\$35.0	\$38.0	\$33.65
Ryan Zimmerman	2006	15	1	34.2	8.1	\$10.0	\$8.5	\$7.53
Troy Tulowitzki	2006	15	2	29.1	7.1	\$57.5	\$68.4	\$60.63
Carlos Gonzalez	2006	18	3	19.6	5.3	\$22.5	\$25.4	\$22.53
Jarrod Saltalamacchia	2006	18	2	6.9	6.4	\$25.0	\$27.1	\$24.04
Elvis Andrus	2006	19	4	16	4.5	\$30.0	\$33.9	\$30.04
Mike Pelfrey	2006	20	2	9.3	7.2	\$29.5	\$31.6	\$27.97
Jon Lester	2006	22	1	28.9	7.3	\$29.5	\$34.2	\$30.32
Nick Adenhart	2006	24	4	0.2	0.9	\$29.5	\$32.0	\$28.36

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Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Gio Gonzalez	2006	26	4	14.2	5.1	\$29.5	\$30.1	\$26.66
Ryan Braun	2006	26	2	32	6.2	\$22.5	\$21.0	\$18.64
Adam Jones	2006	28	2	16.8	7.2	\$25.0	\$28.1	\$24.92
Scott Elbert	2006	31	3	0.2	4.0	\$29.5	\$31.4	\$27.84
Jeff Clement	2006	33	3	-0.9	5.1	\$30.0	\$33.9	\$30.04
Joel Zumaya	2006	35	1	2.9	4.2	\$29.5	\$28.5	\$25.23
Anibal Sanchez	2006	40	1	19.5	7.3	\$29.5	\$26.3	\$23.26
Chris Volstad	2006	40	3	3.3	4.9	\$29.5	\$30.4	\$26.92
Jason Hirsh	2006	42	2	-0.1	2.1	\$14.0	\$15.7	\$13.89
Craig Hansen	2006	54	1	-0.2	3.6	\$14.0	\$15.2	\$13.46
Edinson Volquez	2006	56	1	4.7	8.1	\$14.0	\$15.1	\$13.34
Jered Weaver	2006	57	1	30.4	7.3	\$14.0	\$15.0	\$13.27
Troy Patton	2006	58	3	1.4	6.1	\$14.0	\$14.4	\$12.72
Jonathan Broxton	2006	63	1	9.3	8.1	\$14.0	\$14.6	\$12.90
Marcus Sanders	2006	65	1	0	0.0	\$18.0	\$18.5	\$16.43
Glen Perkins	2006	66	2	6.4	7.0	\$14.0	\$14.8	\$13.12
Kenji Johjima	2006	66	1	6.7	3.5	\$12.5	\$12.8	\$11.35
Dustin Pedroia	2006	77	1	34.4	7.1	\$14.0	\$14.8	\$13.15
Jason Hammel	2006	79	1	11.9	7.5	\$10.0	\$10.6	\$9.35
Josh Johnson	2006	80	1	21.4	7.9	\$10.0	\$10.5	\$9.33
Blake DeWitt	2006	82	1	1.8	5.1	\$14.0	\$14.7	\$12.99
Cliff Pennington	2006	83	1	6.6	5.1	\$14.0	\$14.6	\$12.96
Mark Pawelek	2006	85	1	0	0.0	\$10.0	\$10.4	\$9.22
Ricky Romero	2006	87	1	8.8	4.5	\$10.0	\$10.4	\$9.17
Cesar Carrillo	2006	88	1	-0.7	0.0	\$10.0	\$10.3	\$9.15
Andre Ethier	2006	89	1	20	7.4	\$12.0	\$12.4	\$10.95
Nolan Reimold	2006	91	2	1.3	4.2	\$7.5	\$7.6	\$6.75
Ronny Cedeno	2006	94	1	-0.3	8.4	\$14.0	\$14.2	\$12.62
Tom Gorzelanny	2006	95	1	5.7	8.0	\$10.0	\$10.2	\$8.99
Matt Kemp	2006	96	1	20.4	7.3	\$12.0	\$12.2	\$10.77
Chuck James	2006	98	1	-0.6	5.8	\$10.0	\$10.1	\$8.93
Anthony Swarzak	2006	100	1	1.3	4.4	\$10.0	\$10.0	\$8.88
Daisuke Matsuzaka	2007	1	1	10.6	6.5	\$60.0	\$84.0	\$75.57
Evan Longoria	2007	2	2	36.1	5.5	\$65.0	\$81.3	\$73.09
Colby Rasmus	2007	3	3	13	4.5	\$35.0	\$32.4	\$29.12
Joba Chamberlain	2007	3	2	6.8	6.1	\$60.0	\$54.3	\$48.85
Clay Buchholz	2007	4	2	11.9	6.1	\$60.0	\$65.1	\$58.56
Travis Snider	2007	6	3	1	5.1	\$40.0	\$45.8	\$41.20
Clayton Kershaw	2007	7	2	28.8	5.3	\$60.0	\$51.0	\$45.88
Franklin Morales	2007	8	2	2.1	6.1	\$60.0	\$72.3	\$65.04
Andrew Miller	2007	10	1	2.7	6.9	\$60.0	\$58.5	\$52.63
Tim Lincecum	2007	11	1	26.9	6.4	\$60.0	\$57.0	\$51.28
Jacoby Ellsbury	2007	13	2	23.7	6.3	\$35.0	\$40.1	\$36.05
Dexter Fowler	2007	15	3	8.3	5.1	\$35.0	\$39.6	\$35.58
Jake McGee	2007	15	3	2.4	3.0	\$60.0	\$69.0	\$62.07
Yovani Gallardo	2007	16	1	20.1	6.3	\$29.5	\$36.9	\$33.17
Reid Brignac	2007	17	4	-0.8	5.0	\$30.0	\$33.6	\$30.23
Wade Davis	2007	17	4	5.7	4.1	\$29.5	\$33.3	\$29.99
Fernando Martinez	2007	20	4	-0.7	3.9	\$22.5	\$21.0	\$18.93
Matt Garza	2007	21	1	17.4	7.1	\$29.5	\$34.7	\$31.18
Jose Tabata	2007	27	3	3.3	3.3	\$22.5	\$25.3	\$22.77
Luke Hochevar	2007	32	2	9.3	6.1	\$29.5	\$33.0	\$29.72
Hunter Pence	2007	38	1	24.3	6.4	\$22.5	\$20.7	\$18.62
Adam Lind	2007	39	1	5.1	7.1	\$30.0	\$27.2	\$24.42
Carlos Carrasco	2007	41	3	1.2	4.1	\$14.0	\$15.5	\$13.98
Dellin Betances	2007	43	3	0	2.0	\$14.0	\$14.2	\$12.78
Joey Votto	2007	43	2	32.8	6.1	\$15.0	\$17.1	\$15.38
Billy Rowell	2007	47	1	0	0.0	\$15.0	\$16.8	\$15.11
Travis Buck	2007	50	1	2.8	5.2	\$14.0	\$15.5	\$13.92
Carlos Gomez	2007	52	2	16.5	6.4	\$12.5	\$13.4	\$12.09
Donnie Veal	2007	52	1	0.4	4.5	\$14.0	\$15.3	\$13.79
Chuck Lofgren	2007	54	2	0	0.0	\$14.0	\$14.6	\$13.16
Humberto Sanchez	2007	57	1	0	0.0	\$14.0	\$15.0	\$13.48

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Jonathan Sanchez	2007	59	1	6	6.9	\$14.0	\$14.8	\$13.35
Miguel Montero	2007	63	1	13.3	7.1	\$12.5	\$13.0	\$11.69
Trevor Crowe	2007	64	1	-0.5	4.5	\$14.0	\$14.5	\$13.04
Brett Sinkbeil	2007	68	2	-0.1	0.0	\$14.0	\$15.0	\$13.51
Eric Hurley	2007	68	2	0	0.1	\$14.0	\$15.0	\$13.51
Brad Lincoln	2007	69	1	0.4	3.2	\$14.0	\$14.1	\$12.72
Jaime Garcia	2007	70	1	8.8	4.9	\$14.0	\$14.1	\$12.66
Kevin Slowey	2007	71	1	8.3	6.2	\$10.0	\$10.8	\$9.67
Greg Reynolds	2007	76	2	-0.8	5.4	\$10.0	\$10.4	\$9.31
Brandon Erbe	2007	78	1	0	0.0	\$10.0	\$10.6	\$9.51
Elijah Dukes	2007	79	1	2.2	2.5	\$12.0	\$12.7	\$11.39
Jeff Samardzija	2007	79	2	6	5.2	\$10.0	\$10.6	\$9.49
Daniel Bard	2007	81	2	3.6	4.0	\$10.0	\$10.3	\$9.27
Mike Bowden	2007	83	3	0	0.0	\$10.0	\$10.4	\$9.33
Matt Albers	2007	85	1	0.9	7.2	\$10.0	\$10.4	\$9.36
Brian Barton	2007	86	1	1	1.2	\$10.0	\$10.4	\$9.33
Collin Balester	2007	86	2	-1	3.9	\$30.0	\$30.8	\$27.73
Brandon Morrow	2007	87	1	10.2	6.2	\$10.0	\$10.4	\$9.31
Drew Stubbs	2007	88	2	8.9	4.1	\$10.0	\$10.2	\$9.15
Kurt Suzuki	2007	89	1	12.1	6.3	\$12.5	\$12.9	\$11.58
Matt Harrison	2007	90	1	8.5	4.7	\$10.0	\$10.3	\$9.24
Will Inman	2007	91	1	0	0.0	\$10.0	\$10.3	\$9.22
Chris Iannetta	2007	92	1	11	7.1	\$12.5	\$12.8	\$11.50
Brent Lillibridge	2007	93	1	-1.9	5.3	\$10.5	\$10.7	\$9.63
Chris Parmelee	2007	94	1	0.5	2.1	\$10.0	\$10.2	\$9.15
Sean West	2007	96	2	0.7	1.2	\$10.0	\$10.1	\$9.11
Micah Owings	2007	98	1	5.4	5.1	\$10.0	\$10.1	\$9.06
Pedro Beato	2007	99	1	-0.3	2.4	\$10.0	\$10.1	\$9.04
Jason Heyward	2008	1	3	16.4	3.5	\$40.0	\$38.0	\$34.71
Matt Wieters	2008	1	2	14.4	4.3	\$55.0	\$63.3	\$57.77
David Price	2008	2	2	18.7	5.0	\$60.0	\$69.0	\$63.02
Desmond Jennings	2008	6	4	8.8	3.1	\$35.0	\$40.3	\$36.76
Brett Anderson	2008	7	2	8.1	4.5	\$60.0	\$70.5	\$64.39
Mike Moustakas	2008	9	4	4.3	2.3	\$65.0	\$67.6	\$61.74
Neftali Feliz	2008	9	3	5	4.1	\$60.0	\$56.1	\$51.24
Lars Anderson	2008	17	3	-0.3	1.7	\$30.0	\$33.5	\$30.55
Rick Porcello	2008	21	2	12.2	4.5	\$29.5	\$34.7	\$31.66
Chris Tillman	2008	22	2	3.9	4.2	\$29.5	\$33.5	\$30.58
Matt LaPorta	2008	23	2	-1.4	3.4	\$30.0	\$33.5	\$30.55
Jordan Schafer	2008	25	2	-0.1	4.5	\$25.0	\$24.9	\$22.72
Jarrod Parker	2008	26	5	5	2.0	\$29.5	\$28.9	\$26.40
Chris Marrero	2008	27	1	-0.9	1.8	\$40.0	\$43.4	\$39.64
Kosuke Fukudome	2008	30	1	4.5	4.2	\$30.0	\$31.2	\$28.50
Chase Headley	2008	32	1	18.8	6.3	\$32.0	\$32.3	\$29.52
Angel Villalona	2008	33	2	0	0.0	\$30.0	\$27.6	\$25.21
Johnny Cueto	2008	34	1	10.9	5.5	\$29.5	\$28.9	\$26.40
Deolis Guerra	2008	35	1	0	0.0	\$29.5	\$28.5	\$26.00
Austin Jackson	2008	36	3	14.6	3.5	\$25.0	\$27.5	\$25.12
Josh Vitters	2008	43	3	-1.4	0.2	\$14.0	\$15.2	\$13.87
Ian Kennedy	2008	45	1	11.7	6.1	\$14.0	\$15.8	\$14.45
Tim Alderson	2008	45	2	0	0.0	\$14.0	\$14.5	\$13.23
Geovany Soto	2008	47	1	12	8.0	\$12.5	\$14.0	\$12.79
Jair Jurrjens	2008	49	1	9.3	5.9	\$14.0	\$15.5	\$14.19
Matt Antonelli	2008	50	1	-0.4	0.1	\$18.0	\$19.9	\$18.17
Ross Detwiler	2008	51	1	2.9	5.8	\$29.5	\$32.5	\$29.64
J.R. Towles	2008	53	1	0.1	4.1	\$12.5	\$13.6	\$12.44
Chin-lung Hu	2008	55	1	-1	3.7	\$18.0	\$19.4	\$17.75
Nick Blackburn	2008	56	1	5.2	5.0	\$14.0	\$15.1	\$13.75
Dan Cortes	2008	57	2	0	1.0	\$14.0	\$15.0	\$13.68
Fautino De Los Santos	2008	60	1	0.2	0.9	\$14.0	\$14.8	\$13.49
Carlos Triunfel	2008	62	2	-0.5	1.0	\$18.0	\$19.2	\$17.51
Gorkys Hernandez	2008	62	2	-0.3	0.4	\$14.0	\$14.8	\$13.55
Justin Masterson	2008	64	1	14.1	5.4	\$14.0	\$14.5	\$13.23

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Chris Davis	2008	65	1	7.8	5.3	\$15.0	\$15.5	\$14.11
Max Scherzer	2008	66	1	21.6	5.4	\$14.0	\$14.4	\$13.11
Radhames Liz	2008	69	1	-0.5	1.7	\$14.0	\$14.1	\$12.91
Brandon Jones	2008	70	1	-0.7	1.6	\$14.0	\$14.1	\$12.85
Jordan Walden	2008	70	2	3.1	3.1	\$14.0	\$14.9	\$13.62
Jed Lowrie	2008	73	1	9.4	5.5	\$14.0	\$15.0	\$13.68
Taylor Teagarden	2008	73	2	0.8	5.1	\$12.5	\$13.3	\$12.13
Adrian Cardenas	2008	74	2	-0.3	0.4	\$14.0	\$14.9	\$13.62
Tyler Colvin	2008	75	1	1.6	3.8	\$10.0	\$10.7	\$9.73
Hank Conger	2008	79	2	1.2	3.1	\$12.5	\$13.1	\$11.99
Sean Gallagher	2008	82	1	0	3.3	\$10.0	\$10.5	\$9.57
Phillippe Aumont	2008	83	3	0.2	0.9	\$10.0	\$10.3	\$9.41
Bryan Anderson	2008	85	1	-0.5	3.5	\$12.5	\$13.0	\$11.87
Beau Mills	2008	87	1	0	0.0	\$7.5	\$7.8	\$7.09
Steve Pearce	2008	89	1	0.2	6.1	\$7.5	\$7.7	\$7.06
Joe Savery	2008	90	1	-0.2	2.0	\$10.0	\$10.3	\$9.38
Chris Perez	2008	91	2	0.8	5.4	\$10.0	\$10.2	\$9.29
Hector Gomez	2008	95	1	-0.1	0.0	\$14.0	\$14.2	\$12.98
Ryan Kalish	2008	96	1	-1	2.2	\$12.0	\$12.2	\$11.10
Giancarlo Stanton	2009	3	2	13.4	3.3	\$40.0	\$40.0	\$37.09
Jesus Montero	2009	3	4	-0.2	1.7	\$55.0	\$50.9	\$47.17
Domonic Brown	2009	4	3	0.4	3.2	\$40.0	\$46.4	\$43.02
Tommy Hanson	2009	4	1	7.6	4.3	\$60.0	\$75.0	\$69.54
Brian Matusz	2009	5	2	4.6	4.2	\$60.0	\$51.0	\$47.29
Buster Posey	2009	7	2	17.7	4.1	\$55.0	\$53.6	\$49.72
Eric Hosmer	2009	8	2	2.1	2.4	\$55.0	\$68.8	\$63.75
Pedro Alvarez	2009	8	2	6	3.3	\$65.0	\$63.4	\$58.76
Madison Bumgarner	2009	9	2	13.2	4.0	\$60.0	\$57.0	\$52.85
Carlos Santana	2009	10	2	11.9	3.3	\$55.0	\$67.1	\$62.22
Trevor Cahill	2009	11	1	7.2	4.5	\$60.0	\$57.0	\$52.85
Alcides Escobar	2009	12	2	5.7	5.1	\$57.5	\$48.9	\$45.32
Justin Smoak	2009	13	2	-0.1	3.4	\$55.0	\$67.1	\$62.22
Freddie Freeman	2009	17	3	7	3.1	\$30.0	\$33.9	\$31.43
Martin Perez	2009	17	5	2	1.3	\$29.5	\$33.0	\$30.64
Logan Morrison	2009	18	2	1	3.2	\$30.0	\$36.2	\$33.52
Aaron Hicks	2009	19	4	-0.7	0.3	\$25.0	\$28.5	\$26.43
Gordon Beckham	2009	20	1	5.4	4.3	\$30.0	\$35.7	\$33.10
Brett Wallace	2009	27	2	-0.9	3.2	\$30.0	\$29.9	\$27.68
Chris Carter2	2009	28	3	0	3.1	\$30.0	\$30.9	\$28.65
Tim Beckham	2009	28	2	0.1	0.0	\$30.0	\$33.6	\$31.15
Michael Saunders	2009	30	2	2.9	4.2	\$25.0	\$28.0	\$25.96
Derek Holland	2009	31	1	11.6	4.4	\$29.5	\$30.2	\$28.04
Christian Friedrich	2009	33	2	0.8	0.2	\$29.5	\$30.5	\$28.31
Yonder Alonso	2009	33	4	2.4	3.1	\$30.0	\$33.8	\$31.29
Mat Gamel	2009	34	2	-0.2	3.7	\$30.0	\$31.5	\$29.21
Brett Lawrie	2009	40	3	6.3	2.2	\$32.0	\$33.8	\$31.30
Jason Castro	2009	41	2	4.9	3.2	\$12.5	\$14.0	\$12.98
Jordan Zimmerman	2009	41	1	13.5	4.4	\$14.0	\$16.1	\$14.93
J.P. Arencibia	2009	43	1	0.9	3.1	\$12.5	\$14.3	\$13.21
Todd Frazier	2009	43	2	6.6	2.4	\$14.0	\$15.4	\$14.28
Jhoulys Chacin	2009	46	2	10.4	4.2	\$14.0	\$14.9	\$13.82
Wilmer Flores	2009	47	3	-0.2	0.1	\$18.0	\$18.6	\$17.27
Andrew Lambo	2009	49	1	-0.2	0.1	\$14.0	\$15.5	\$14.41
Kyle Blanks	2009	50	1	2.1	4.3	\$15.0	\$16.6	\$15.37
Michael Ynoa	2009	54	1	0	0.0	\$14.0	\$15.2	\$14.08
Aaron Cunningham	2009	55	1	-0.1	3.9	\$14.0	\$15.1	\$14.02
James McDonald	2009	56	1	3.3	4.6	\$14.0	\$15.1	\$13.95
Gregory Halman	2009	57	1	-0.5	0.9	\$12.5	\$13.4	\$12.40
Nick Weglarz	2009	58	1	0	0.0	\$14.0	\$14.9	\$13.82
Wilson Ramos	2009	58	3	5.6	3.4	\$12.5	\$13.3	\$12.34
Ben Revere	2009	59	1	5.4	2.8	\$12.5	\$13.3	\$12.29
Tyler Flowers	2009	60	2	1.6	4.0	\$12.5	\$13.2	\$12.23
Dayan Viciedo	2009	61	1	0.6	3.3	\$14.0	\$14.7	\$13.63

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Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Aaron Poreda	2009	63	1	0.1	0.3	\$14.0	\$14.6	\$13.50
Matt Dominguez	2009	64	2	0.9	2.1	\$14.0	\$15.0	\$13.92
Louis Marson	2009	66	1	2.7	4.6	\$12.5	\$12.8	\$11.88
Jake Arrieta	2009	67	2	2.7	3.3	\$14.0	\$14.6	\$13.57
Jason Donald	2009	69	1	0.6	2.4	\$18.0	\$18.2	\$16.86
Brett Cecil	2009	72	1	4.4	4.4	\$10.0	\$10.7	\$9.94
Jon Niese	2009	77	1	9.5	5.1	\$10.0	\$10.6	\$9.83
Andrew Brackman	2009	78	2	0	0.0	\$10.0	\$10.4	\$9.64
Max Ramirez	2009	84	1	-0.1	2.0	\$7.5	\$7.8	\$7.25
Kyle Skipworth	2009	85	1	0	0.1	\$12.5	\$13.0	\$12.05
Gerardo Parra	2009	88	1	9.8	4.4	\$10.0	\$10.3	\$9.57
Brad Holt	2009	94	1	0	0.0	\$10.0	\$10.2	\$9.43
Jeremy Jeffress	2009	100	1	0.1	3.1	\$10.0	\$10.0	\$9.30
Matt Moore	2010	2	3	4.5	2.0	\$60.0	\$74.1	\$69.75
Mike Trout	2010	2	3	21.1	2.2	\$35.0	\$36.4	\$34.26
Stephen Strasburg	2010	2	1	11.1	3.3	\$14.0	\$18.9	\$17.79
Julio Teheran	2010	5	4	2.7	2.4	\$60.0	\$66.0	\$62.13
Jeremy Hellickson	2010	6	2	4.4	3.2	\$60.0	\$55.5	\$52.24
Miguel Sano	2010	6	5	0	0.0	\$65.0	\$60.8	\$57.21
Shelby Miller	2010	6	4	2.5	1.1	\$60.0	\$72.3	\$68.06
Aroldis Chapman	2010	7	2	5.9	3.1	\$60.0	\$52.5	\$49.42
Dustin Ackley	2010	11	2	4.5	2.3	\$57.5	\$54.6	\$51.42
Zack Wheeler	2010	11	4	0.6	0.2	\$60.0	\$56.1	\$52.81
Starlin Castro	2010	16	1	8.1	3.4	\$30.0	\$37.5	\$35.30
Travis D'Arnaud	2010	17	5	-0.1	0.1	\$25.0	\$22.6	\$21.30
Mike Montgomery	2010	19	3	0	0.0	\$29.5	\$32.0	\$30.13
Jacob Turner	2010	21	3	0.1	2.1	\$29.5	\$33.8	\$31.80
Ryan Westmoreland	2010	21	1	0	0.0	\$22.5	\$26.4	\$24.89
Tyler Matzek	2010	23	2	0	0.0	\$29.5	\$32.0	\$30.13
Casey Kelly	2010	24	4	-0.1	0.1	\$29.5	\$33.5	\$31.52
Kyle Drabek	2010	25	2	-0.2	3.0	\$29.5	\$32.0	\$30.13
Lonnie Chisenhall	2010	25	2	1.1	2.3	\$32.0	\$34.2	\$32.23
Dee Gordon	2010	26	2	-0.9	2.3	\$30.0	\$28.5	\$26.83
Zach Britton	2010	28	2	3.2	2.5	\$29.5	\$33.3	\$31.38
Michael Taylor	2010	29	1	-1.1	1.7	\$22.5	\$23.7	\$22.34
Brett Jackson	2010	32	3	0.1	0.2	\$22.5	\$25.1	\$23.62
Kyle Gibson	2010	34	3	0	0.1	\$29.5	\$32.0	\$30.13
Josh Bell1	2010	37	1	-1.8	2.0	\$32.0	\$29.9	\$28.16
Derek Norris	2010	38	2	2.5	1.3	\$7.5	\$8.1	\$7.62
Aaron Crow	2010	40	1	1.3	2.5	\$29.5	\$26.3	\$24.71
Arodys Vizcaino	2010	40	4	0.1	0.1	\$29.5	\$31.7	\$29.85
Jordan Lyles	2010	42	2	1.4	2.3	\$14.0	\$14.4	\$13.51
Tanner Scheppers	2010	42	2	0.9	1.3	\$14.0	\$14.6	\$13.71
Jenrry Mejia	2010	44	2	0.3	3.4	\$14.0	\$15.5	\$14.56
Nick Hagadone	2010	44	1	-0.2	2.0	\$14.0	\$15.9	\$14.96
Tony Sanchez	2010	46	2	-0.1	0.3	\$12.5	\$13.1	\$12.30
Alex White	2010	47	2	-0.3	1.4	\$14.0	\$15.1	\$14.17
Casey Crosby	2010	47	1	-0.1	0.0	\$14.0	\$15.7	\$14.76
Chris Withrow	2010	48	1	0.1	0.3	\$14.0	\$15.6	\$14.69
Grant Green	2010	52	2	-0.1	0.2	\$18.0	\$19.3	\$18.13
Donavan Tate	2010	53	1	0	0.0	\$14.0	\$15.3	\$14.36
Jared Mitchell	2010	55	1	0	0.0	\$14.0	\$15.1	\$14.23
Simon Castro	2010	57	2	0	0.0	\$14.0	\$15.0	\$14.10
Ike Davis2	2010	62	1	5.4	3.4	\$15.0	\$15.7	\$14.76
Jason Knapp	2010	64	1	0	0.0	\$14.0	\$14.5	\$13.64
Daniel Hudson	2010	66	1	8.3	2.8	\$14.0	\$14.4	\$13.51
Alex Colome	2010	68	1	0	0.1	\$14.0	\$14.2	\$13.38
Mike Leake	2010	72	1	7.2	3.5	\$10.0	\$10.7	\$10.10
Jiovanni Mier	2010	73	1	0	0.0	\$14.0	\$15.0	\$14.10
Josh Reddick	2010	75	1	8.8	4.2	\$10.0	\$10.7	\$10.03
Chad James	2010	78	1	0	0.0	\$10.0	\$10.6	\$9.95
Jaff Decker	2010	82	1	-0.2	0.2	\$10.0	\$10.5	\$9.86
Adam Moore	2010	83	1	-0.9	3.7	\$12.5	\$13.1	\$12.30

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Austin Romine	2010	86	2	-0.4	2.0	\$12.5	\$12.8	\$12.03
James Darnell	2010	90	1	-0.3	0.8	\$10.0	\$10.3	\$9.67
Drew Storen	2010	92	1	2.4	3.4	\$55.0	\$56.2	\$52.94
Andrew Cashner	2010	95	1	2.5	3.3	\$10.0	\$10.2	\$9.55
Thomas Neal	2010	96	1	-0.6	0.9	\$10.0	\$10.1	\$9.53
Peter Bourjos	2010	97	1	9	3.1	\$12.0	\$12.1	\$11.41
Jay Jackson	2010	98	1	0	0.0	\$10.0	\$10.1	\$9.48
Noel Arguelles	2010	100	1	0	0.0	\$10.0	\$10.0	\$9.44
Bryce Harper	2011	1	2	8.3	1.4	\$57.5	\$80.5	\$76.93
Jurickson Profar	2011	1	3	-0.5	1.1	\$57.5	\$62.4	\$59.62
Wil Myers	2011	4	3	2.4	0.3	\$40.0	\$35.0	\$33.45
Jameson Taillon	2011	11	4	0	0.0	\$60.0	\$75.0	\$71.68
Manny Machado	2011	11	2	7.5	1.1	\$65.0	\$60.1	\$57.46
Tyler Skaggs	2011	12	3	-0.1	0.9	\$60.0	\$57.9	\$55.33
Devin Mesoraco	2011	16	2	0.2	2.1	\$25.0	\$22.3	\$21.26
Michael Pineda	2011	16	1	3.2	0.5	\$29.5	\$36.9	\$35.24
John Lamb	2011	18	1	0	0.0	\$29.5	\$36.0	\$34.39
Billy Hamilton2	2011	20	4	0.6	0.1	\$25.0	\$22.3	\$21.26
Chris Sale	2011	20	1	11.7	3.1	\$29.5	\$35.1	\$33.55
Nick Castellanos	2011	21	4	-0.2	0.1	\$22.5	\$20.4	\$19.46
Brandon Belt	2011	23	1	6.2	2.5	\$30.0	\$34.4	\$32.83
Chris Archer	2011	27	3	1.6	1.3	\$29.5	\$32.6	\$31.15
Jonathan Singleton	2011	27	4	0	0.0	\$30.0	\$33.9	\$32.40
Manny Banuelos	2011	29	2	0	0.0	\$29.5	\$28.5	\$27.21
Drew Pomeranz	2011	30	2	1.6	2.0	\$29.5	\$33.3	\$31.86
Gary Sanchez	2011	30	4	0	0.0	\$25.0	\$27.6	\$26.40
Randall Delgado	2011	35	2	1	2.3	\$29.5	\$26.3	\$25.09
Mike Minor	2011	37	1	6.5	3.1	\$29.5	\$27.6	\$26.36
Nolan Arenado	2011	42	3	2.7	0.4	\$14.0	\$14.9	\$14.25
Hak-Ju Lee	2011	44	3	0	0.0	\$18.0	\$19.2	\$18.32
Anthony Rizzo	2011	47	2	2.7	2.3	\$15.0	\$15.8	\$15.05
Trey McNutt	2011	48	1	0	0.0	\$14.0	\$15.6	\$14.92
Wilin Rosario	2011	49	2	3.4	2.0	\$12.5	\$12.7	\$12.13
Jarred Cosart	2011	50	2	0.4	0.2	\$14.0	\$14.8	\$14.12
Christian Colon	2011	51	1	0	0.0	\$18.0	\$19.8	\$18.92
Jose Iglesias	2011	52	1	1.9	2.4	\$18.0	\$19.7	\$18.84
Nick Franklin	2011	53	3	0.4	0.3	\$18.0	\$18.2	\$17.37
Jason Kipnis	2011	54	1	8.4	2.2	\$18.0	\$19.5	\$18.66
Jean Segura	2011	55	2	3.2	1.2	\$18.0	\$19.4	\$18.49
Brody Colvin	2011	56	1	0	0.0	\$14.0	\$15.1	\$14.38
Zach Lee	2011	62	3	0	0.0	\$14.0	\$14.7	\$14.01
Zack Cox	2011	62	2	0	0.0	\$14.0	\$14.9	\$14.25
Danny Espinosa	2011	66	1	6.4	2.8	\$60.0	\$61.5	\$58.77
Anthony Ranaudo	2011	67	1	0	0.0	\$14.0	\$14.3	\$13.65
Jake Odorizzi	2011	67	4	0.3	1.0	\$14.0	\$14.9	\$14.28
Danny Duffy	2011	68	1	1.8	2.3	\$14.0	\$14.2	\$13.58
Matthew Davidson	2011	72	4	0.2	0.1	\$10.5	\$10.9	\$10.41
Tyler Chatwood	2011	76	1	3	2.5	\$10.0	\$10.6	\$10.15
Cesar Puello	2011	77	1	0	0.0	\$10.0	\$10.6	\$10.13
Stetson Allie	2011	79	1	0	0.0	\$7.5	\$7.9	\$7.56
Chris Dwyer	2011	83	1	0	0.0	\$10.0	\$10.5	\$9.99
Brent Morel	2011	85	1	-0.4	2.9	\$10.5	\$10.9	\$10.44
Craig Kimbrel	2011	86	1	9.2	3.4	\$10.0	\$10.4	\$9.92
Andy Oliver	2011	87	1	0	0.9	\$10.0	\$10.4	\$9.89
Josh Sale	2011	88	1	0	0.0	\$10.0	\$10.3	\$9.87
Rubby De La Rosa	2011	90	1	0.4	2.4	\$10.0	\$10.3	\$9.82
Jonathan Villar	2011	94	1	-0.2	0.2	\$14.0	\$14.2	\$13.61
Deck McGuire	2011	95	1	0	0.0	\$10.0	\$10.2	\$9.70
Drake Britton	2011	97	1	0.4	0.2	\$10.0	\$10.1	\$9.65
Joe Benson	2011	99	2	-0.2	0.1	\$10.0	\$10.1	\$9.60
Dylan Bundy	2012	2	3	0	0.0	\$60.0	\$60.0	\$58.21
Xander Bogaerts	2012	2	3	0.2	0.1	\$57.5	\$66.7	\$64.71
Oscar Taveras	2012	3	3	0	0.0	\$40.0	\$44.0	\$42.69

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Yu Darvish	2012	4	1	9.8	1.5	\$60.0	\$75.0	\$72.77
Javier Baez	2012	5	3	0	0.0	\$57.5	\$62.4	\$60.53
Gerrit Cole	2012	7	2	2.5	0.3	\$60.0	\$60.0	\$58.21
Archie Bradley	2012	9	3	0	0.0	\$60.0	\$72.3	\$70.15
Trevor Bauer	2012	9	3	-0.4	1.0	\$60.0	\$57.9	\$56.18
Taijuan Walker	2012	11	3	0.5	0.0	\$60.0	\$75.0	\$72.77
Francisco Lindor	2012	13	3	0	0.0	\$57.5	\$63.3	\$61.37
Yoenis Cespedes	2012	14	1	5.2	1.5	\$40.0	\$35.0	\$33.96
Christian Yelich	2012	15	2	1.4	0.2	\$40.0	\$42.8	\$41.53
George Springer	2012	18	3	1.8	0.2	\$22.5	\$20.7	\$20.08
Anthony Rendon	2012	19	2	1.5	0.4	\$10.0	\$11.3	\$10.96
Danny Hultzen	2012	21	2	0	0.0	\$29.5	\$32.9	\$31.91
Mike Olt	2012	22	2	-0.5	0.2	\$32.0	\$32.3	\$31.36
Bubba Starling	2012	24	2	0	0.0	\$22.5	\$23.7	\$23.03
Carlos Martinez4	2012	27	3	0.3	0.4	\$29.5	\$29.8	\$28.91
Mason Williams	2012	32	2	0	0.0	\$22.5	\$24.0	\$23.25
Brad Peacock	2012	36	1	0.1	2.1	\$35.0	\$33.3	\$32.26
Gary Brown	2012	38	1	0	0.0	\$22.5	\$20.7	\$20.08
Anthony Gose	2012	39	1	0.2	1.2	\$25.0	\$22.6	\$21.95
Allen Webster	2012	49	3	-0.3	0.4	\$14.0	\$14.8	\$14.40
Rymer Liriano	2012	49	1	0	0.0	\$14.0	\$15.5	\$15.08
Will Middlebrooks	2012	51	1	2.3	1.4	\$14.0	\$15.4	\$14.94
James Paxton	2012	52	3	0.5	0.0	\$14.0	\$14.8	\$14.33
Yasmani Grandal	2012	53	1	3	1.1	\$12.5	\$13.6	\$13.22
Matt Harvey	2012	54	1	7.3	1.1	\$14.0	\$15.2	\$14.74
Wily Peralta	2012	56	2	1.7	1.4	\$14.0	\$14.6	\$14.19
A.J. Cole	2012	57	1	0	0.0	\$14.0	\$15.0	\$14.53
Kolten Wong	2012	58	3	-0.3	0.1	\$18.0	\$19.0	\$18.47
Josh Bell	2012	60	1	0	0.0	\$14.0	\$14.8	\$14.33
Taylor Guerrieri	2012	62	2	0	0.0	\$14.0	\$14.9	\$14.43
Jake Marisnick	2012	64	3	-0.2	0.2	\$12.5	\$12.6	\$12.19
Matt Szczur	2012	64	1	0	0.0	\$14.0	\$14.5	\$14.06
Sonny Gray	2012	65	1	1.5	0.2	\$14.0	\$14.4	\$13.99
Addison Reed	2012	66	1	2.6	2.1	\$14.0	\$14.4	\$13.92
Trevor May	2012	69	1	0	0.0	\$14.0	\$14.1	\$13.72
Taylor Jungmann	2012	70	1	0	0.0	\$14.0	\$14.1	\$13.65
Jed Bradley	2012	71	1	0	0.0	\$10.0	\$10.8	\$10.43
Jedd Gyorko	2012	71	2	2.5	0.5	\$14.0	\$14.6	\$14.16
Blake Swihart	2012	72	2	0	0.0	\$12.5	\$13.4	\$13.01
Starling Marte	2012	73	1	5.7	1.2	\$10.0	\$10.7	\$10.38
Zack Cozart	2012	75	1	5.1	2.2	\$14.0	\$14.9	\$14.47
Cory Spangenberg	2012	78	1	0	0.0	\$14.0	\$14.8	\$14.36
Leonys Martin	2012	79	2	2.4	2.1	\$12.0	\$12.4	\$12.02
Michael Choice	2012	80	2	0	0.1	\$10.0	\$10.3	\$9.99
Jonathan Schoop	2012	82	1	0	0.0	\$14.0	\$14.7	\$14.23
Garrett Richards	2012	83	1	1.4	2.1	\$10.0	\$10.5	\$10.14
Cheslor Cuthbert	2012	84	1	0	0.0	\$10.5	\$10.9	\$10.62
Chad Bettis	2012	86	1	0	0.2	\$10.0	\$10.4	\$10.07
Daniel Norris	2012	91	1	0	0.0	\$10.0	\$10.3	\$9.94
Andrelton Simmons	2012	92	1	6.8	1.3	\$14.0	\$14.3	\$13.89
Tyrell Jenkins	2012	94	1	0	0.0	\$10.0	\$10.2	\$9.87
Nathan Eovaldi	2012	96	1	2.2	2.1	\$10.0	\$10.1	\$9.82
Christian Villanueva	2012	100	1	0	0.0	\$10.5	\$10.5	\$10.21
Byron Buxton	2013	1	2	0	0.0	\$40.0	\$48.0	\$47.28
Jose Fernandez2	2013	5	1	4.7	0.4	\$60.0	\$72.0	\$70.92
Carlos Correa	2013	7	2	0	0.0	\$57.5	\$56.1	\$55.22
Gregory Polanco	2013	10	2	0	0.0	\$40.0	\$41.6	\$40.98
Addison Russell	2013	14	2	0	0.0	\$57.5	\$58.9	\$58.05
Noah Syndergaard	2013	16	2	0	0.0	\$29.5	\$28.5	\$28.04
Mike Zunino	2013	17	1	0	0.3	\$25.0	\$30.9	\$30.41
Robert Stephenson	2013	19	2	0	0.0	\$29.5	\$27.6	\$27.17
Kevin Gausman	2013	20	2	0.4	0.4	\$29.5	\$33.8	\$33.27
Lucas Giolito	2013	21	2	0	0.0	\$29.5	\$33.5	\$32.98

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Kyle Zimmer	2013	23	2	0	0.0	\$29.5	\$33.8	\$33.27
Yordano Ventura	2013	26	2	0	0.0	\$29.5	\$31.9	\$31.38
Austin Hedges	2013	27	2	0	0.0	\$25.0	\$28.6	\$28.20
Andrew Heaney	2013	30	2	0	0.0	\$29.5	\$28.0	\$27.60
Jackie Bradley	2013	31	2	0	0.5	\$25.0	\$22.3	\$21.92
Aaron Sanchez	2013	32	2	0	0.0	\$29.5	\$32.9	\$32.40
Albert Almora	2013	33	2	0	0.0	\$22.5	\$22.1	\$21.72
Kyle Crick	2013	33	2	0	0.0	\$29.5	\$32.7	\$32.25
Jorge Soler	2013	34	2	0	0.0	\$22.5	\$21.0	\$20.72
Trevor Rosenthal	2013	39	1	2.4	1.2	\$29.5	\$26.7	\$26.30
Henry Owens	2013	40	2	0	0.0	\$29.5	\$30.4	\$29.93
Matt Barnes	2013	40	1	0	0.0	\$29.5	\$26.3	\$25.86
Oswaldo Arcia	2013	41	1	-0.4	0.5	\$14.0	\$16.1	\$15.86
Hyun-Jin Ryu	2013	42	1	3.4	0.5	\$14.0	\$16.0	\$15.79
Alex Meyer	2013	45	2	0	0.0	\$40.0	\$43.8	\$43.14
Max Fried	2013	46	2	0	0.0	\$14.0	\$15.5	\$15.31
Yasiel Puig	2013	47	1	4	0.3	\$14.0	\$15.7	\$15.44
Lance McCullers	2013	50	2	1.9	6.8	\$14.0	\$14.6	\$14.34
David Dahl	2013	53	2	0	0.0	\$14.0	\$15.0	\$14.76
Courtney Hawkins	2013	55	1	0	0.0	\$14.0	\$15.1	\$14.89
Marcus Stroman	2013	55	2	0	0.0	\$14.0	\$14.9	\$14.65
Kaleb Cowart	2013	60	1	0	0.0	\$14.0	\$14.8	\$14.55
Alen Hanson	2013	61	2	0	0.0	\$18.0	\$18.3	\$18.00
Slade Heathcott	2013	63	1	0	0.0	\$14.0	\$14.6	\$14.34
Brian Goodwin	2013	70	1	0	0.0	\$40.0	\$40.2	\$39.60
Jesse Biddle	2013	71	2	0	0.0	\$10.0	\$10.5	\$10.37
Adam Eaton	2013	73	1	0.2	1.1	\$12.0	\$12.8	\$12.65
Avisail Garcia	2013	74	1	-0.4	1.1	\$12.0	\$12.8	\$12.62
Marcell Ozuna	2013	75	1	1.6	0.2	\$10.0	\$10.7	\$10.49
Michael Wacha	2013	76	1	1	0.3	\$10.0	\$10.6	\$10.47
Tyler Austin	2013	77	1	0	0.0	\$10.0	\$10.6	\$10.44
Luis Heredia	2013	78	1	0	0.0	\$10.0	\$10.6	\$10.42
Didi Gregorius	2013	80	1	1.4	1.1	\$14.0	\$14.7	\$14.51
Tony Cingrani	2013	82	1	1.7	1.0	\$10.0	\$10.5	\$10.32
Justin Nicolino	2013	86	1	0	0.0	\$10.0	\$10.4	\$10.22
J.R. Graham	2013	93	1	0	0.0	\$10.0	\$10.2	\$10.05
Daniel Corcino	2013	94	1	0	0.0	\$10.0	\$10.2	\$10.02
Bruce Rondon	2013	95	1	0.4	0.4	\$10.0	\$10.2	\$10.00
Trevor Story	2013	96	1	0	0.0	\$14.0	\$14.2	\$13.96
Delino DeShields1	2013	99	1	0	0.0	\$14.0	\$14.1	\$13.86
Roman Quinn	2013	100	1	0	0.0	\$14.0	\$14.0	\$13.82
Masahiro Tanaka	2014	4	1	2.5	0.2	\$60.0	\$75.0	\$75.00
Kris Bryant	2014	8	1	0	0.0	\$65.0	\$68.3	\$68.25
Jonathan Gray	2014	12	1	0	0.0	\$60.0	\$55.5	\$55.50
Maikel Franco	2014	17	1	0	0.0	\$32.0	\$39.5	\$39.52
Eddie Butler	2014	24	1	0	0.0	\$29.5	\$33.3	\$33.34
C.J. Edwards	2014	28	1	0	0.0	\$29.5	\$31.6	\$31.57
Jose Abreu	2014	29	1	1.5	0.2	\$30.0	\$31.7	\$31.65
Joc Pederson	2014	34	1	0	0.0	\$22.5	\$22.1	\$22.05
Corey Seager	2014	37	1	0	0.0	\$30.0	\$28.1	\$28.05
Mark Appel	2014	39	1	0	0.0	\$29.5	\$26.7	\$26.70
Rougned Odor	2014	42	1	0	0.0	\$18.0	\$20.6	\$20.61
Matt Wisler	2014	44	1	0	0.0	\$14.0	\$15.9	\$15.89
Tyler Glasnow	2014	46	1	0	0.0	\$14.0	\$15.8	\$15.75
Raul Mondesi2	2014	47	1	0	0.0	\$18.0	\$20.2	\$20.16
Clint Frazier	2014	48	1	0	0.0	\$14.0	\$15.6	\$15.61
Austin Meadows	2014	49	1	0	0.0	\$14.0	\$15.5	\$15.54
Julio Urias	2014	51	1	0	0.0	\$14.0	\$15.4	\$15.40
Kohl Stewart	2014	52	1	0	0.0	\$14.0	\$15.3	\$15.33
Jorge Alfaro	2014	54	1	0	0.0	\$12.5	\$13.6	\$13.56
Edwin Escobar	2014	56	1	0	0.0	\$14.0	\$15.1	\$15.05
Lucas Sims	2014	57	1	0	0.0	\$14.0	\$15.0	\$14.98
Mike Foltynewicz	2014	59	1	0	0.0	\$14.0	\$14.8	\$14.84

Appendix E: Baseball America Prospect Rankings (1990-2014)

Top BA Prospect	First Rk	Highest BA Rk	Times RK	fWAR	MLB (Yr*)	Prospect Raw Value (M)	Avg. of BA RK (M)	1.5% Inflation Adj. (M)
Joey Gallo	2014	60	1	0	0.0	\$14.0	\$14.8	\$14.77
Colin Moran	2014	61	1	0	0.0	\$14.0	\$14.7	\$14.70
Braden Shipley	2014	62	1	0	0.0	\$14.0	\$14.6	\$14.63
Erik Johnson	2014	63	1	-0.4	0.1	\$14.0	\$14.6	\$14.56
Nick Kingham	2014	64	1	0	0.0	\$14.0	\$14.5	\$14.49
Eduardo Rodriguez	2014	65	1	0	0.0	\$14.0	\$14.4	\$14.42
Chris Owings	2014	66	1	0.4	0.1	\$18.0	\$18.5	\$18.45
Rafael Montero	2014	68	1	0	0.0	\$14.0	\$14.2	\$14.21
Christian Bethancourt	2014	69	1	0	0.0	\$12.5	\$12.6	\$12.63
Stephen Piscotty	2014	70	1	0	0.0	\$14.0	\$14.1	\$14.07
Garin Cecchini	2014	74	1	0	0.0	\$10.5	\$11.2	\$11.21
Mookie Betts	2014	75	1	0	0.0	\$14.0	\$14.9	\$14.91
J.P. Crawford	2014	78	1	0	0.0	\$14.0	\$14.8	\$14.81
Hunter Renfroe	2014	80	1	0	0.0	\$10.0	\$10.5	\$10.53
Reese McGuire	2014	81	1	0	0.0	\$12.5	\$13.1	\$13.13
Devon Travis	2014	84	1	0	0.0	\$14.0	\$14.6	\$14.60
D.J. Peterson	2014	85	1	0	0.0	\$10.5	\$10.9	\$10.92
Rosell Herrera	2014	86	1	0	0.0	\$14.0	\$14.5	\$14.53
Pierce Johnson	2014	87	1	0	0.0	\$10.0	\$10.4	\$10.35
Trey Ball	2014	89	1	0	0.0	\$10.0	\$10.3	\$10.30
Jorge Bonifacio	2014	90	1	0	0.0	\$10.0	\$10.3	\$10.28
Marcus Semien	2014	91	1	0.1	0.1	\$14.0	\$14.4	\$14.35
Dominic Smith	2014	92	1	0	0.0	\$7.5	\$7.7	\$7.67
Taylor Lindsey	2014	93	1	0	0.0	\$14.0	\$14.3	\$14.28
Jimmy Nelson	2014	96	1	0.1	0.1	\$10.0	\$10.1	\$10.13
Nick Williams	2014	97	1	0	0.0	\$10.0	\$10.1	\$10.10
Arismendy Alcantara	2014	100	1	0	0.0	\$14.0	\$14.0	\$14.04

Note: fWAR Stats thru April 2014; MLB career length as end of 2013 season for pre-2014 rankings

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