Moneyball

INTRODUCTION

BRIEF BIOGRAPHY OF MICHAEL LEWIS

Michael Lewis studied art history at Princeton, and later worked for an art dealer. In 1985, he received an M.A. in economics from the London School of Economics, and afterwards worked for an investment firm. In the late 1980s, Lewis became a financial journalist. In 1989, he published his first book, *Liar's Poker*, about the history of mortgage-backed bonds. Since the 90s, Lewis has written articles for a variety of different publications, including the *New York Times Magazine*, *Vanity Fair*, and Slate. His other books include *The Blind Side* (2006), *The Big Short* (2010), *Flash Boys* (2014), and, most recently, *The Undoing Project* (2016), all of which explore a little-understood sector of statistics or economics. Lewis lives in Berkeley, California with his wife and three children.

HISTORICAL CONTEXT

While *Moneyball* doesn't discuss many historical events, one important cultural event to which it alludes is the rise of the era of personal computers. Beginning in the 1970s, computers changed from an esoteric technology, available only to scientists and professional researchers, to a relatively affordable technology, available to much of the American populace. As a result of the rise of personal computing, average Americans had access to previously unavailable quantities of baseball statistics and could research these statistics on their own time. The growing availability of the Internet in the 1990s further accelerated the process by which average sports fans could study the mathematics and statistics of the game and draw their own conclusions about it.

RELATED LITERARY WORKS

Moneyball bears comparison with several other nonfiction books published in the 2000s, which applied statistics and esoteric math to unlikely fields of human endeavor. Books of this kind include *Freakanomics* (2005) by Steven Levitt and Stephen J. Dubner, *The Tipping Point* (2000) by Malcolm Gladwell, and *The Black Swan* (2007) by Nassim Nicholas Taleb. *Moneyball* also praises the baseball journalism of Bill James, who, for many years, self-published an annual *Bill James Baseball Abstract*, and who is often credited with pioneering a scientific, statistics-heavy approach to baseball.

KEY FACTS

- **Full Title:** Moneyball: The Art of Winning an Unfair Game
- **When Written:** 2002
- **Where Written:** California
- **When Published:** 17 June 2003
- **Genre:** Nonfiction / Sports Writing
- **Setting:** Major league baseball, 2002 season, mostly in Oakland, California
- **Climax:** The Oakland A's twentieth straight win in the 2002 season
- **Antagonist:** Conventional baseball wisdom
- **Point of View:** Third person, with frequent first-person asides from author Michael Lewis

EXTRA CREDIT

The King of Hollywood. Filmmakers love Michael Lewis's books—in the last ten years, three of them (*The Blind Side*, *Moneyball*, and *The Big Short*) have been made into successful, Academy Award-nominated films.

Moneyballing. It's a rare author who coins a term that enters the language, and Michael Lewis is one of those rare authors. Since the publication of *Moneyball*, the term "moneyball" has been adopted to describe the practice of using statistics to seek out an edge in the baseball "market" by finding more efficient and effective ways of building a team.

PLOT SUMMARY

In the 1980s, there was a tremendously talented high school baseball player named Billy Beane. Talent scouts from professional baseball teams would come to watch Billy's high school games and they told him that soon he'd be a world-class player. When Billy graduated, he was offered a contract with the Mets; after some uncertainty, he signed.

But after Billy became a player for the Mets, he seemed to lose his talent. Overshadowed by his teammates, Billy became easily rattled. He lacked the focus necessary to succeed in pro baseball. Fed up with playing, Billy became a talent scout for the Oakland A's and he eventually rose to become the general manager of the team. As general manager, Billy used a mathematical strategy for drafting and acquiring players, which would revolutionize the sport. Before 2002, the Oakland A's, and some other teams, had used a limited mathematical approach to team management—however, 2002 marked the year when the Oakland A's used the mathematical approach to a degree almost never seen before.

Around the same time that Billy was playing for the Mets, the baseball world was going through a series of changes. Baseball

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teams were becoming highly profitable, so that certain successful teams, such as the New York Yankees, had so much money that they could draft the most expensive and, often, the most talented players. At the same time, the 1980s marked the dawn of the sabermetrics era. A baseball fan named Bill James pioneered the idea that traditional sports statistics, such as batting averages, didn't measure what they were supposed to measure, and instead painted an inaccurate picture of the sport. James argued that by studying statistical information closely, general managers could assemble a team of athletes who, contrary to traditional measures, would play a steady, consistent, disciplined game, and ultimately perform better than flashier, more obviously gifted ballplayers. In spite of James's brilliance, his ideas didn't really catch on with major league franchises, partly because baseball is a traditionalist sport, partly because of the anti-intellectual bias in baseball, and partly because coaches and managers didn't want outsiders interfering with their actions.

As general of the Oakland A's, one of the poorest teams in Major League Baseball, Billy Beane was unusual in that he'd seen first-hand why traditional recruitment strategies didn't work. Billy himself had been a top prospect for the Mets, but he hadn't lived up to his promise. In 2002, Billy made the decision to reform the player acquisition process. Instead of doing what most general managers do—listening to their team of talent scouts—Billy worked closely with his assistant, a statistics-minded man named Paul DePodesta. Paul argued that most baseball scouts were biased in favor of what they could see with their own eyes. He further argued that, by analyzing statistics about a player's walks, on-base average (i.e., probability of getting on base, and not making an out, in any given at-bat), and other obscure information, general managers could acquire talented players whom other franchises didn't think were worth anything. In so doing, Paul realized, the Oakland A's could assemble one of the best teams in the league for much less money.

In 2002, Billy alienated his talent scouts by hiring a group of players whom other teams had largely ignored. One such player was Jeremy Brown, a heavy slow-moving fielder with an impressive on-base average. Billy and Paul supported drafting Jeremy, along with other unglamorous ballplayers whom the scouts had dismissed. In all, the Oakland A's were able to draft more than a dozen of their top picks for the year—unheard of in Major League Baseball.

Billy applies sabermetrics to many different aspects of baseball management, not just the draft. Throughout the first half of the 2002 season, during which the Oakland A's don't do particularly well, he tries to "recreate" Jason Giambi, a talented player whom he was forced to let go after the 2001 season because the A's could no longer afford him. Instead of trying to find another player with Giambi's abilities, Billy focuses on "recreating the aggregate"—in other words, finding multiple players who, when put together, can match Giambi's statistics as a baseman and a hitter. Billy uses techniques that Paul DePodesta has borrowed from the world of Wall Street, in effect treating Giambi as a set of statistics that can be matched with a bundle of "derivatives" taken from other players. One of the players Billy acquires to replace Giambi, an older player named David Justice, isn't much of a hitter any longer, but he's excellent at getting walks—therefore, he contributes to his team's victory, albeit in a fairly unglamorous way.

Another player that Billy has acquired for the 2002 season is Scott Hatteberg. Hatteberg was already in the twilight of his career before he came to the Oakland A's, and a bad accident had left him with almost no strength in his right arm. Nevertheless, Billy hires him because of his high on-base percentage and consistent hitting, playing him as a first baseman in order to get him at-bats.

Throughout the 2002 season, Billy continues trading players to other teams in the hopes of maximizing his own team's success. He cleverly negotiates with multiple general managers of other franchises to acquire a talented player named Ricardo Rincon. To pay for Rincon, Beane pushes a veteran player, Mike Magnante, out of the big-league team for good—a piece of news that Magnante takes with quiet, weary acceptance.

Another important player whom the A's have acquired for the 2002 season is the pitcher Chad Bradford. Bradford has had some ups and downs as a player, but Billy acquires him because he recognizes that Chad is a smart pitcher with good endurance. Chad is a textbook example of the A's new approach to winning baseball: he looks nothing like a pro athlete, and he's not particularly hard-throwing as a pitcher, but he has a wild, unconventional delivery that induces batters to hit mostly ground balls. This is an advantage because, statistically speaking, grounders are less likely to result in doubles, triples, or home runs.

In the second half of the 2002 season, the A's win twenty straight games, a league record. They qualify for the **playoffs**, but lose against a far inferior team, the Minnesota Twins. Nevertheless, Billy and Paul have proven that general managers can use sabermetrics and economic thinking to create a powerful team. Other general managers, managers, and coaches come together and claim that Billy and Paul's success is a fluke. However, Billy is offered a contract to manage the Boston Red Sox—the highest-paying contract in baseball history—which suggests that the Major League Baseball world recognizes his talents. After much thought, Billy turns down the contract, claiming that, as a high school player, he made a big mistake by signing with the Mets, and he will never again make a decision that's just about money. He remains general manager of the Oakland A's with Paul at his side.

In the Epilogue, Jeremy Brown, playing in a big-league training camp, hits a home run without realizing it—perhaps

symbolizing the Oakland A's unlikely path to victory.

CHARACTERS

MAJOR CHARACTERS

Billy Beane – The general manager of the Oakland A's, a Major League Baseball franchise, during the period that *Moneyball* covers (he remained the general manager beyond the scope of the book, as well). As a younger man, Billy was a promising baseball player in his own right, but he made the mistake of signing a contract to play with the Mets directly out of high school, and then failed to live up to his potential as a professional athlete. As a general manager, Billy tries to use a scientific, statistics-heavy approach to drafting and acquiring ballplayers—in other words, an opposite approach to the talent scouts who assured him that he'd definitely be a great ballplayer. As the most prominent, fleshed-out character in the book, Billy is a mess of contradictions. As general manager, he makes an effort to be cool and rational, but he's also prone to uncontrollable rages. He insists that coaching and managing can't change athletes' identities, and yet he expends millions of dollars and thousands of hours trying to do just that. Most perplexingly, Billy is responsible for initiating a revolution in baseball management, monetizing and economizing the business in ways never before seen—and yet, he seems oddly indifferent to money: when offered a record-breaking contract managing the Red Sox, he turns it down.

Paul DePodesta – For most of the book, Paul DePodesta is Billy Beane's assistant and right-hand man. A Harvard graduate and economics scholar, Paul is responsible for introducing the new sabermetric approach to baseball management. Recognizing that the common wisdom on baseball is wildly misleading, Paul bets heavily on ballplayers with a high on-base percentage, and he encourages Billy to use a cautious, measured approach to managing his teams. Paul is, probably more than any single character in the book, responsible for the Oakland A's incredible success in the 2002 season. While Michael Lewis doesn't give us as much information about Paul as he does about Billy Beane, he suggests that Paul is an immensely pragmatic, intelligent, man, who doesn't allow emotion and bias to cloud his decision-making. He essentially models the Oakland A's after his own personality.

Bill James – The father of sabermetrics, Bill James was an amateur sports journalist who, in the late 1970s, began self-publishing a legendary series of annual treatises on baseball. James's great insight, Michael Lewis argues, was to realize that traditional sports statistics, such as batting averages, give wildly misleading ideas about a player's talent. This observation reveals that ballplayers are often dramatically over- or undervalued. James's shrewd observations and humorous writing style made him a cult figure in the 1980s and 90s. But, incredibly, the vast majority of baseball managers, general managers, and team owners ignored his findings, continuing to base their operations on old-fashioned, deeply flawed ideas of how baseball worked. It wasn't until Billy Beane and Paul DePodesta took control of the 2002 Oakland A's draft that a baseball team *fully* put Bill James's ideas into practice.

Jeremy Brown – An unlikely professional athlete drafted by the Oakland A's in 2002, Jeremy Brown is overweight, hairy, and generally un-charismatic. Nevertheless, he has a high on-base percentage and a consistent, reliable swing. Throughout the book, Michael Lewis uses Jeremy Brown as a kind of case study for Paul DePodesta and Billy Beane's approach to management.

Henry Chadwick – 19th century British journalist who pioneered the traditional baseball statistics, such as batting average, that are still commonly used in baseball. As Lewis sees it, Chadwick was largely responsible for the widespread misunderstandings of how baseball worked that, more than a century later, allowed Paul DePodesta and Billy Beane to assemble a team of secretly talented athletes that nobody else wanted.

Walter A. Haas, Jr. – The owner of the Oakland A's from 1980 until his death in 1995, after which his family sold the team to new ownership. Haas ran the team in almost a philanthropic way, not worrying about losing money. Under his ownership the A's made it to the World Series three years in a row (1988 – 1990), winning in 1989.

Scott Hatteberg – Catcher and first-baseman for the Oakland A's. Despite the fact that he suffered an accident that leaves him virtually unable to throw the ball, the A's sign him prior to the 2002 season for his skill at drawing walks and getting on base, and play him for much of the season at first base.

MINOR CHARACTERS

Sandy Alderson – General manager of the Oakland A's prior to Billy Beane, and a pioneer of a scientific, experimental approach to baseball, though not to the extent that Beane later implemented.

Jack Armbruster – Ex-Wall Street financier who co-founded AVM Systems, a company that used the principles of derivatives to analyze baseball.

David Beck – An unlikely draft pick for the Oakland A's who exemplifies the qualities that Paul DePodesta values in players.

Sam Blalock – Billy Beane's high school baseball coach.

Joe Blanton – Talented pitcher drafted by the Oakland A's in 2002.

Dick "Bogie" Bogard – A senior talent scout for the Oakland A's.

Jeremy Bonderman – A high school pitcher, drafted in 2001 by

the A's on the recommendation of scout Grady Fuson.

Scott Boras – A notoriously savvy agent who represents players in their contract negotiations.

Chad Bradford – Relief pitcher for the Oakland A's.

Robert Brownlie – Talented pitcher, represented by the agent Scott Boras.

Eric Chavez – Third baseman for the Oakland A's.

Brant Colamarino – Unlikely first baseman drafted by the Oakland A's in 2002.

Dick Cramer – Cofounder, with Bill James, of STATS Inc., one of the first companies that measured and published baseball statistics.

Mike Crowley – President of the Oakland A's.

Johnny Damon – Center fielder for the Oakland A's whom Billy Beane trades before the 2002 draft.

Harvey Dorfman – Sports psychologist for the New York Mets in the 1980s.

Lenny Dykstra – Billy Beane's roommate and teammate on the Mets who quickly overshadowed Billy on the field, despite being a less talented athlete on paper.

Ray Durham – Leadoff hitter who is traded from the White Sox to the Oakland A's midway through the 2002 season.

Dan Feinstein – Employee of the Oakland A's, responsible for shooting video of every game.

Cliff Floyd – Hotly desired hitter for the Montreal Expos.

Prince Fielder – 2002 draft pick and the son of a former ballplayer for the Tigers.

David Forst – Paul DePodesta's assistant.

Benjamin Fritz – Talented pitcher drafted by the Oakland A's in 2002.

Grady Fuson – The head talent scout for the Oakland A's who clashes with Billy Beane after Fuson drafts too many young, high school athletes.

Pete Gammons – Reporter for ESPN.

Jeremy Giambi – Younger brother of Jason Giambi and a player whom the A's acquire in a trade before the 2000 season. They trade him away in the middle of the 2002 season.

Jason Giambi – Talented hitter for the Oakland A's who, after the 2001 season, leaves the A's as a free agen because they can't afford him. He goes to play for the New York Yankees.

Jeremy Guthrie – Talented pitcher, represented by the agent Scott Boras.

Eric Hiljus – Pitcher for the Oakland A's.

Ken Hofmann – Co-owner, with Steve Schott, of the Oakland A's during the season depicted in *Moneyball*.

Art Howe – Manager of the Oakland A's major league team under Billy Beane.

Tim Hudson – Pitcher for the Oakland A's.

Jason Isringhausen – Pitcher for the Oakland A's whom Billy Beane trades before the 2002 draft.

Roger Jongewaard – The head talent scout for the New York Mets who was largely responsible for convincing a young Billy Beane to sign with the Mets, a decision that Billy regretted for the rest of his career.

David Justice – Hitter for the Oakland A's. Though he was once a great hitter, by the 2002 season he is older and has lost much of his power. Yet he still has the ability to draw walks, which is the reason the A's acquire him in a trade.

Scott Kazmir – Talented baseball player drafted by the Mets in 2002.

Mike Kriger – Unlikely shortstop drafted by the Oakland A's in 2002.

Erik Kubota – The head talent scout for the Oakland A's after Billy Beane fires Grady Fuson.

Tony La Russa – Manager of the Oakland A's under Sandy Alderson.

Cory Lidle – Popular but overvalued player for the Oakland A's.

Terrence Long – Center fielder for the Oakland A's.

John Mabry – A player the A's acquire in return for trading Jeremy Giambi. When he joins the A's he hits better than he ever has before, but because Billy Beane dislikes his swing-first style he plays less regularly than he would like.

Ken Macha – Bench coach for the Oakland A's major league team, later the manager of the major league team.

Mike Magnante – Pitcher for the Oakland A's whom Billy Beane dispassionately pushes off the team midway through the 2002 season.

Don Mattingly – Legendary baseball player with the New York Yankees.

Ken Mauriello – Ex-Wall Street financier who co-founded AVM Systems, a company that used the principles of derivatives to analyze baseball.

Voros McCracken – Paralegal and baseball fanatic who, in his spare time, discovered that, contrary to popular belief, the pitcher had no control over whether a batted ball (a pitch that a hitter managed to get his bat on) fell in for a hit or turned into an out.

Jim Mecir – Pitcher for the Oakland A's, drafted in spite of—and, in some ways, because of—his clubfoot.

Omar Minaya – General manager of the Montreal Expos.

Joe Morgan – Legendary second baseman who claims, illogically, that the Oakland A's success during the 2002 season was mostly a matter of luck.

Jamie Moyer – Pitcher for the Seattle Mariners.

Carlos Pena – Popular but overvalued player for the Oakland A's.

Bill "Moose" Perry – Chad Bradford's high school coach, and one of the few people who encouraged him to shoot for Major League Baseball.

Steve Phillips – General manager of the Mets.

Ricardo Rincon – Talented ballplayer whom Billy Beane manages to acquire midway through the 2002 season.

Steve Schott – Co-owner, with Ken Hofmann, of the Oakland A's.

Mark Shapiro – General manager of the Cleveland Indians.

Denard Span – High school pitcher who refuses to sign with a Major League team for less than 2.6 million dollars a year.

Steve Stanley – Lightweight center fielder whom Billy Beane wants for the 2002 draft.

Darryl Strawberry – Legendary major league baseball player who was drafted at the same time as Billy Beane but quickly outshone Billy.

Nick Swisher – Talented athlete, signed by the Oakland A's in 2002, whom both Paul DePodesta and the old-fashioned talent scouts admire.

Mark Teahen – A college third-baseman who draws walks and rarely strikes out, but hits with little power in college. The A's draft him in 2002.

Miguel Tejada – Shortstop for the Oakland A's.

Mike Venafro – Pitcher for the Oakland A's.

Paul Volcker – Ex-chairman of the Federal Reverse, and one of the four "experts" recruited by Major League Baseball to investigate the economic inequalities of the game.

Ron Washington – Infield coach for the Oakland A's.

Kevin Youkilis – Obscure but talented Red Sox ballplayer whom Billy Beane wants for the Oakland A's due to his ability to draw walks.

J. P. Ricciardi – General manager of the Toronto Blue Jays.

THEMES

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STATISTICS AND RATIONALITY

In *Moneyball*, Michael Lewis explores the history of sabermetrics—the practice of using math and statistical analysis to analyze the game of baseball. In the early 2000s, Billy Beane, the general manager of the Oakland Athletics baseball team, and his assistant, Paul DePodesta, came to the conclusion that professional baseball players were evaluated according to a system that often gave a misleading idea of their actual value to a baseball team. With the A's operating with a smaller financial budget than more well-funded teams, the A's needed to find an edge that allowed them to acquire value for less than it should cost. With Paul's help, and building off of the strategies developed by the previous A's general manager, Sandy Alderson, Billy used sabermetrics to identify players with valuable traits that were overlooked by other general managers and talent scouts, and assemble a team that went on to make the playoffs, and at one point win a record-setting 20 games in a row. As Lewis sees it, the Oakland A's' success in 2002 was a major victory for rationality in professional baseball: after many decades of using irrational, arbitrary means to assess players, Billy and Paul used statistics to manage baseball in a more rational, scientific way.

Billy and Paul's sabermetric style of baseball management rests upon a set of simple, but in some cases controversial, assumptions about the game. Their first major assumption—borrowed from the writing of Bill James, one of the pioneers of the sabermetric approach—is that the more one knows about a ballplayer's past performance, the more accurately one can predict that player's future success. This means that, for example, Billy and Paul refrain from drafting high school players for the simple reason that high school players have fewer reliable statistics than older players. Billy and Paul's second assumption is that statistics are always more reliable than eyewitness testimony when it comes to assessing a player's value to the game. Their third assumption is that some sports statistics are more important than others. Paul quickly realizes that the most popular statistics for ballplayers, such as batting average (the likelihood of a player getting a hit in a given at-bat), are overrated. Much more important was a player's on-base percentage (i.e., the probability of a player getting on base via a hit *or* a walk, and thus not getting out. Put together, Billy and Paul's sabermetric approach to baseball leads them to draft ballplayers who, in most general managers' estimation, shouldn't be on any big-league team. However, Billy and Paul (and sabermetrics) are vindicated when the Oakland A's go on to win a record number of games in 2002.

The rational, statistical approach to baseball management is not without some drawbacks. As Michael Lewis points out more than once, sabermetrics can be unsympathetic or even heartless: indeed, Billy fires and demotes some players in mid-season simply because their statistics aren't good and there's no rational reason to keep them around. On the same note,

sabermetrics could be interpreted as dehumanizing: it conceptualizes athletes as combinations of interchangeable numbers whose behavior can be predicted, at least in the long run, with surgical accuracy. At the same time, statistics about how a player has performed can't always predict how a player *will* perform. Sometimes, players don't get along with their teammates, they go through personal crises, have accidents, lose their focus, and experience all kinds of other setbacks that statistical analysis cannot predict. In general, there is a strong element of randomness in baseball. Paul and Billy try to minimize randomness, but they can't do away with it altogether. In the anticlimactic ending of *Moneyball*, the Oakland A's phenomenal 2002 season ends in a **playoff** loss to a much weaker team, which shows the Achilles heel of sabermetrics: even if sabermetrics can predict a player's overall success rate, it cannot predict the outcome of a single baseball game, since there's too much randomness to take into account. In all, it's important to keep Paul and Billy's achievements in perspective. They challenge the conventional baseball wisdom, using mathematics to develop a more economic, rational approach to hiring ballplayers. Nevertheless, baseball remains a mysterious and somewhat unpredictable sport.

BIAS

When Paul DePodesta and Billy Beane apply statistics to the practice of acquiring professional baseball players, they're greeted with widespread derision from baseball fans and from other general managers. Paul and Billy's goal is simple: to win as many games for the Oakland A's as possible by assembling the most valuable players at a cost they can afford. That they face so much criticism for trying to win games in the most rational, logical way suggests that the world of baseball is fundamentally irrational: coaches, players, and fans have many different forms of bias that interfere with winning games. By discussing some of these forms of bias, Michael Lewis paints an insightful picture of 21st century baseball and, more broadly, of the way that inherited "wisdom" can in fact lead to bias against change or progress.

Perhaps the single most important form of bias that *Moneyball* discusses is the bias toward the particular and away from the general. Put another way, coaches, scouts, and fans tend to prefer a glamorous but inconsistent player—someone who's alternately great and terrible—to a consistently good player, even if the latter player scores more runs overall. *Moneyball* dramatizes this form of bias through the career of Billy Beane, a once-promising baseball player who burned out after being drafted to play professionally with the Mets. One reason for baseball's strong bias toward the particular is the scouting system. Talent scouts for professional baseball teams travel the country and watch thousands of different high school and college games. As a result, they're forced to make huge generalizations about players' talents after watching them for a relatively short time, which requires them to ignore some important evidence in the process. In high school, Billy Beane was one of the most promising ballplayers in the country. However, talent scouts from professional teams failed to notice when his batting average dropped dramatically in his senior year. Based on a small handful of his games, they'd already decided that he was major-league material, and therefore they ignored his overall record. The bias in favor of the particular also harms the way that coaches deal with ballplayers. During Billy Beane's time with the Mets, for instance, his coaches didn't do a good job of preparing him for the psychological rigors of professional sports. Instead, Billy's coaches focused excessively on Beane's performance in specific parts of the game and pressured him to make big, aggressive plays. Unable to cope with the constant stress of playing ball, Billy left the major leagues and, eventually became a general manager – the person who assembles the personnel of the baseball team, overseeing the hiring of an on-field manager and the acquisition of players. As the general manager of the Oakland A's, Billy used statistics to get a good overall sense for a player's abilities, effectively treating ballplayers in the opposite of the way that he was treated. As a result, Billy favored reliable players who wouldn't crack under pressure over talented but inconsistent and undisciplined players like him.

As Billy's experiences as a player suggest, the game of baseball also has a strong bias toward charisma and glamor, which often mars the overall quality of the game. In particular, baseball coaches, players, and fans have a strong bias against ballplayers who are overweight, hairy, and generally not conventionally athletic-seeming. One of the primary reasons that Billy elicits so much criticism for his 2002 draft picks is that few of his chosen athletes *look* like pro athletes—they have the stats for success, but not the physiques. The bias toward charisma and glamor also manifests in the way coaches train athletes to play. Indeed, coaches from some non-Oakland teams tell their athletes to swing at balls in the strike zone, avoid walks, and steal bases—in other words, actions that look cool, but also limit some less-glamorous outcomes – such as earning walks – that can boost the team's chances of winning the game.

As strange as it sounds, *Moneyball* shows that baseball professionals and fans aren't always most interested in seeing athletes win games. Sometimes, due to different sources of bias, they'd rather see ballplayers take risks and make big, aggressive plays that don't always pay off. One could even argue—and many people have—that, by eliminating traditional sources of bias from baseball, Billy Beane and Paul DePodesta made the sport duller and less interesting. However, as *Moneyball* shows, Billy and Paul didn't just change the way baseball was played: by eliminating the strong bias toward charisma, glamor, risk, and the particular, they helped world-class baseball players achieve the success that had previously

alluded them. Many of the ballplayers who found success with the Oakland A's had previously seen their talents ignored or even belittled—under Billy's leadership, they finally got the success they deserved.

PSYCHOLOGY AND TALENT

In a way, *Moneyball* is about the hundreds of millions of dollars that professional sports franchises spend answering the question, "What is a good athlete?" Talent scouts traditionally measured ballplayers' talents based on the simplest, most tangible criteria: speed, strength, reflexes, and agility. One of the book's key insights, however, is that athletic talent isn't just a matter of physique: often, the most talented players have a certain psychological profile that enables them to maintain their focus and withstand the pressures of professional sports. Having established the importance of psychology in baseball, the book poses a challenging question: is it possible to use statistics to measure one's psychological aptitude for the game?

Over the course of the book, Michael Lewis establishes the vital importance of psychology—in particular, drive, ambition, and concentration—in athletic success. A good baseball player must be ambitious; he must have a strong desire to push himself hard and improve in the face of adversity. Baseball players must also have the concentration to focus on winning long, exhausting baseball games. While traditional scouts and coaches may recognize the importance of psychological factors like ambition and concentration in building a talented athlete, the book argues that talent also requires many other psychological qualities that the world of baseball wrongly ignores. For instance, Billy Beane and Paul DePodesta realize that the most successful, talented baseball players are often the most cautious—the hitters who don't swing at balls in the strike zone. They also recognize that good pitchers need to be good at reading hitters and deciding how to handle them. While there's nothing revolutionary about this idea, Billy and Paul attach so much value to the ability to read hitters that they draft pitchers with unusually slow pitch speeds.

Billy says on more than one occasion that every aspect of a player's talent, physical and psychological, can be represented in some concrete number, but *Moneyball* challenges and complicates Billy's claim by suggesting that some aspects of a player's talent (particularly their psychological aptitude for the game) cannot be measured. Toward the end of the book, for example, we learn about the career of Chad Bradford, a pitcher who, contrary to every rational, statistical expectation, developed an unexpected talent late in his career and went on to become one of the best players for the Oakland A's. To the extent that anyone can understand why Chad succeeded, Lewis suggests that he succeeded because of his incredible optimism and hope. Once Chad began pitching well, sabermetrically-minded general managers like Billy Beane could see his talent clearly. But no sabermetric measures can explain why, exactly, Chad had the psychological talent necessary to change up his game and become a great pitcher. *Moneyball* ends, then, with a conflicted view of talent and psychology. Statistics give some information about what an athlete does, but, in order to fully understand these numbers, one must look to that athlete's intangible psychological qualities—an important but indecipherable component of their talent. Yogi Berra put it best: ninety percent of baseball is half mental.

MONEY AND VALUE

As its title would suggest, *Moneyball* studies the role of money in Major League Baseball in the late 20th and early 21st century. Baseball—no less than any other popular, sought-after form of entertainment—is a business, and Michael Lewis (a former Wall Street trader himself) shows how a group of savvy general managers and assistant general managers revolutionized baseball by applying business principles to it.

One of *Moneyball*'s most important insights into the role of money in baseball is that, in practice, Major League Baseball functions in more or less the same way as the American economy itself. A large number of franchises compete with one another to sign contracts with the most talented players, ensuring that those players will compete on their behalf for many years to come. As with the American economy, however, the competition between franchises is far from fair and equal. The largest, richest franchises, such as the New York Yankees, have a huge advantage over their poorer competitors: they can afford to buy the most sought-after athletes. If the biggest franchises always bought the best players, one would expect that, over time, the biggest franchises would continue to get bigger and better. However, as Lewis shows, big franchises don't always make good use of their funds and their players. Sometimes, promising players turn out to be bad investments, and sometimes, players with good agents charge the largest franchises an inflated price for their services. In effect, smaller franchises are—to use the market analogy again—startups, using novel strategies, shrewd investments, and pure luck to outcompete their larger, more static rivals. As a result of the occasional incompetence of large franchises and the ingenuity of smaller franchises, such as the Oakland A's, Major League Baseball remains exciting and entertaining for fans—the richest teams don't always win. Nevertheless, as *Moneyball* makes clear, money controls Major League Baseball to a degree that even devoted fans of the sport don't realize: franchises make draft decisions not out of loyalty, or even due to players' talents, but based on what their budgets enable them to do. And their success depends on the value they gain from the money they spend.

Evidently, money is the means of achieving success in the world of professional baseball. But Lewis also suggests that, in slightly

a different sense, money is the ultimate *measure* of success. The goal of a Major League franchise is not, in the end, to win the World Series, but to draw fans, sell tickets, attract popular interest, and to boost the general cash value of the franchise. It's still important for the franchise to win games, but not simply for the intrinsic glory of winning. Indeed, during the era in which *Moneyball* is set (the 1980s to the early 2000s), many baseball franchises, which had previously been thought of as essentially philanthropic organizations (i.e., money-losers), refocused their strategy and became proper businesses. Understood in this way, *Moneyball*'s view of baseball can seem somewhat cynical: the goal of the game is not, contrary to what many fans believe, to please fans or maintain loyalty to certain players, except as means to the end of building a profitable business.

Billy and Paul remain controversial figures in the world of organized sports. While their sabermetric management style challenged the conventional wisdom that the richest teams always won, their strategies ultimately made baseball more money-centric than ever before by applying Wall Street derivative tactics to baseball. In the early 2000s, Billy's unique insight led the Oakland A's to a successful season, leveling the playing field for a small, underfunded team. But since the early 2000s, and the success of *Moneyball* itself, many different baseball teams, big and small, have begun making management decisions with the help of sabermetrics, effectively canceling out any advantage that DePodesta's methods lent to smaller franchises. After leading the A's to a successful season in 2002, Billy Beane was offered a chance to work for the Red Sox and become the highest-paid general manager in baseball history. To widespread surprise, he turned the Red Sox down, claiming that he'd never make a decision that was "just about the money." Lewis doesn't reveal Billy's precise motives for turning down the contract, but Billy's decision symbolizes the contradictions of sabermetrics and monetization: although the people who pioneered the use of sabermetrics seemed to be motivated by something more than just a desire for money, their decisions had the effect of clarifying and strengthening the role of money in baseball overall.

SYMBOLS

Symbols appear in **teal text** throughout the Summary and Analysis sections of this LitChart.

THE 2002 PLAYOFFS

In 2002, after a spectacular season, the Oakland A's lose in the playoffs to a team with a far worse record, the Minnesota Twins. The A's loss in the playoffs is a symbol of the randomness and unpredictability of the game of baseball. Billy Beane and Paul DePodesta try to minimize the role of luck in their sport, but they can't get rid of it altogether.

ON-BASE PERCENTAGE

Paul DePodesta talks a lot about the importance of on-base percentage (OBP), a statistic that, in effect, measures a hitter's chances of reaching base in any given at-bat through either getting a base hit or by drawing a walk (which occurs when a pitcher throws four balls and the batter is allowed to go to first base). The statistic of "batting average," which measured how likely a player was to get a hit in a given at-bat, had long been a staple of baseball, and players with high batting averages were greatly prizes and highly paid. Yet batting average ignored walks, and little was thought of players who were able to draw walks. Almost no one even knew who those players were. In the way that it uncovered a hidden value – the fact that getting a walk to get on base can also help teams score runs – on-base percentage symbolizes the discipline of sabermetrics itself and the wealth of hidden talent, represented in obscure statistics, that baseball teams had up until 2002 largely ignored.

QUOTES

Note: all page numbers for the quotes below refer to the W. W. Norton & Company edition of *Moneyball* published in 2004.

Chapter 1 Quotes

❝❞ When things did not go well for Billy on the playing field, a wall came down between him and his talent, and he didn't know any other way to get through the wall than to try to smash a hole in it. It wasn't merely that he didn't like to fail; it was as if he didn't know how to fail.
The scouts never considered this. By the end of Billy's senior year the only question they had about Billy was: Can I get him?

Related Characters: Billy Beane

Related Themes:

Page Number: 9

Explanation and Analysis

In this passage, Lewis discusses the early baseball career of Billy Beane, a once-talented athlete who, after being drafted by the Mets, floundered in the minor leagues and never lived up to his potential. As a high school player, Billy wowed professional talent scouts: they thought he was a sure-fire major-leaguer. However, beneath his impressive plays and charisma, Billy was insecure and couldn't cope with failure, no matter how small. When he made a mistake,

he'd allow his failure to tarnish the rest of his game, instead of moving past the mistake as the best athletes do.

One of Lewis's insights here is that Billy's psychological profile was as important as his physical profile to his success, a fact that the scouts couldn't see. Naively, they assumed that Billy would be fine as a major league player, even though he wasn't psychologically mature enough for big-league play. The traditional scouting system, Lewis suggests, is severely flawed: it focuses too much on an athlete's big, impressive plays, and not enough on the athlete's endurance, determination, or maturity. Years later, as General Manager of the Oakland A's, Billy is inspired to institute a new, sabermetric approach to drafting and acquiring players, recognizing that, as evidenced by his own career, the traditional scouting methods don't always work.

Chapter 2 Quotes

❝ There was, for starters, the tendency of everyone who actually played the game to generalize wildly from his own experience. People always thought their own experience was typical when it wasn't. There was also a tendency to be overly influenced by a guy's most recent performance: what he did last was not necessarily what he would do next. Thirdly—but not lastly—there was the bias toward what people saw with their own eyes, or thought they had seen. The human mind played tricks on itself when it relied exclusively on what it saw, and every trick it played was a financial opportunity for someone who saw through the illusion to the reality. There was a lot you couldn't see when you watched a baseball game.

Related Characters: Paul DePodesta

Related Themes:

Page Number: 18

Explanation and Analysis

In this chapter, we're introduced to Paul DePodesta, the man who used a sabermetric player acquisition strategy for the Oakland A's during their 2002 season, rather than listening to the advice of talent scouts. DePodesta came from a sports background, but he'd also studied economics, and he realized that, by studying an athlete's overall record of play, general managers could identify players for their holistic talent and get a good idea of how they'd perform in major league games. Before 2002, the Oakland A's had sometimes used a limited sabermetric approach to player acquisition, but this approach had always been balanced out by the strong influence of old-fashioned talent scouts.

As the passage suggests, the management of the Oakland A's was severely set back by the scouting system—in particular, three main sources of bias. When trying to identify good athletes, talent scouts ignored statistical record altogether—instead, they trusted what they saw with their own eyes. The athletes they selected had to wow them with big, impressive plays and, ass a result, scouts sometimes neglected steady, reliable players who ultimately performed better as professional athletes. Paul realized that by eliminating bias from the scouting system—trusting the numbers instead of his own senses—he could assemble a formidable baseball team while also saving a fortune.

❝ There was no avoiding just how important the 2002 amateur draft was for the future of the Oakland A's. The Oakland A's survived by finding cheap labor. The treatment of amateur players is the most glaring of the many violations of free market principles in Major League Baseball. A team that drafts and signs a player holds the rights to his first seven years in the minor leagues and his first six in the majors.

Related Themes:

Page Number: 22

Explanation and Analysis

Necessity is the mother of invention, and one reason that Paul DePodesta instituted a new sabermetric strategy for the Oakland A's is that the Oakland A's were a poor team that needed to save money. In 2002, the conventional wisdom held that big teams, because of their higher budgets, could afford the most highly-valued (and therefore the best) players, and thereby ensure the team's success throughout the season. Paul, recognizing the need to find budget players, realized that, in fact, some of the best players in the league were stranded in the amateur draft because they didn't meet talent scouts' arbitrary definition of talent. Therefore, by drafting and signing secretly talented players, the Oakland A's could assemble a great team and save lots of money.

In many ways, the Major League Baseball world is an economic market like any other. As Lewis points out here, baseball franchises survive by buying players before they become famous, and then continuing to pay them far too little for years to come. There's nothing glamorous or noble about the Oakland A's practice of hiring cheap players and exploiting them for cash—Paul and Billy aren't trying to do right by the players; they're just trying to make their team

financially viable.

"He's the only player in the history of the SEC with three hundred hits and two hundred walks," says Paul, looking up from his computer.
It's what he doesn't say that is interesting ... He doesn't explain why walks are important. He doesn't explain that he has gone back and studied which amateur hitters made it to the big leagues, and which did not, and why. He doesn't explain that the important traits in a baseball player were not all equally important. That foot speed, fielding ability, even raw power tended to be dramatically overpriced. That the ability to control the strike zone was the greatest indicator of future success. That the number of walks a hitter drew was the best indicator of whether he understood how to control the strike zone.

Related Characters: Paul DePodesta (speaker)

Related Themes:

Page Number: 33

Explanation and Analysis

In this passage, Lewis discusses one of the most important underrated statistics in baseball: walks. Traditionally, people don't think of a walk as a sign of success. If a player walks to first base, most people would argue that it's because he's failed to hit the ball. But from a purely statistical perspective—i.e., from Paul's perspective—a walk is a success because it gets more men on base. Therefore, he encourages the A's general manager, Billy Beane, to hire as many players with high numbers of walks as possible. Before 2002, the Oakland A's used some sabermetric management strategies, but in *Moneyball*, Paul essentially gets a "free reign" over the Oakland A's, and encourages Billy to emphasize certain statistics, such as walks, that haven't played a major role in A's management before.

Paul's advice is indicative of his unglamorous, rational approach to baseball. Walks aren't traditionally impressive, but the fact remains that they're useful to the team in the long run. Unburdened by tradition or bias, Paul assembles a team that isn't particularly impressive to the untrained eye, but which wins a record number of games over the course of the 2002 season.

Chapter 3 Quotes

"Baseball organizations don't understand that with a certain kind of highly talented player who has trouble with failure, they need to suck it up and let the kid develop," Dorfman said. "You don't push him along too fast. Take it slow, so his failure is not public exposure and humiliation. Teach him perspective—that baseball matters but it doesn't matter too much. Teach him that what matters isn't whether I just struck out. What matters is that I behave impeccably when I compete. The guy believes in his talent. What he doesn't believe in is himself. He sees himself exclusively in his statistics. If his stats are bad, he has zero self-worth. He's never developed a coping mechanism because he's never had anything to cope with."

Related Characters: Harvey Dorfman (speaker), Billy Beane

Related Themes:

Page Number: 53-54

Explanation and Analysis

In this chapter, Lewis discusses Billy Beane's baseball career: a career marked by failure, disappointment, and the inability to live up to potential. There are many possible reasons why Billy never became a great professional athlete, but most of the explanations for Billy's burnout that Lewis offers hinge upon Billy's inability to cope with the psychological pressures of Major League Baseball. As the Mets' psychologist, Harvey Dorfman, argues, the Mets didn't prepare Billy for the stresses of professional play: they just naively assumed that he'd be well-equipped for pro ball based on his physical skill.

The passage is important because it suggests that, in some ways, being extremely talented and charismatic is a liability in the long run. Talented professional athletes command a lot of attention, and scouts have high expectations of them. As a result, some talented prospects burn out early and crack under the pressure to succeed. Years later, perhaps confirming Dorfman's ideas, Beane assembles a team for the Oakland A's that consists almost entirely of underdogs who, slowly and steadily, proceed to dominate their league.

Since the late 1970s the A's had been owned by Walter A. Haas, Jr., who was, by instinct, more of a philanthropist than a businessman. Haas viewed professional baseball ownership as a kind of public trust and spent money on it accordingly. In 1991, the Oakland A's actually had the highest payroll in all of baseball. Haas was willing to lose millions to field a competitive team that would do Oakland proud, and he did. The A's had gone to the World Series three straight seasons from 1988 to 1990.
Deferring to success became an untenable strategy in 1995.

Related Characters: Walter A. Haas, Jr.

Related Themes:

Page Number: 57

Explanation and Analysis

The rise of sabermetrics in Major League Baseball coincided with the rise of sports franchises as major moneymakers. For example, in the case of the Oakland A's, one of the first franchises to use sabermetrics extensively for drafting and acquiring players and for determining team strategies, the team needed to start generating income. In the past, under the leadership of owner Walter A. Haas, the goal of the Oakland A's wasn't to make money, but rather to provide pride and entertainment to the people of Oakland. However, under its new leadership, the Oakland A's needed to sell tickets and save money through wise resource allocation. Ultimately, Paul DePodesta instituted sabermetric strategies because he recognized the necessity of maximizing profits by spending as little money as possible to acquire good players.

Chapter 4 Quotes

The statistics were not merely inadequate; they lied. And the lies they told led the people who ran major league baseball teams to misjudge their players, and mismanage their games. James later reduced his complaint to a sentence: fielding statistics made sense only as numbers, not as language. Language, not numbers, is what interested him. Words, and the meaning they were designed to convey. "When the numbers acquire the significance of language," he later wrote, "they acquire the power to do all of the things which language can do: to become fiction and drama and poetry."

Related Characters: Bill James (speaker)

Related Themes:

Page Number: 66

Explanation and Analysis

In Chapter Four, we learn about Bill James, the father of sabermetrics. James was an important influence on sabermetrics because he knew enough about mathematics to recognize that traditional baseball statistics, such as batting average, were wildly misleading. Statistics, he argued, became so fetishized over time that they became more important to the players than winning games. Furthermore, general managers made important, million-dollar decisions based on their analysis of player statistics—however, too often, they made their decisions based on the *wrong* statistics. James's goal as a sports writer was to expose some of the traditional biases in sports stats, and replace those biases with an accurate, mathematical system for evaluating players' strengths.

James' innovations were important because they emphasized that general managers were overvaluing and undervaluing certain players, and that statistical analysis, if done correctly, could correct general managers' errors. Years after Bill James began writing about baseball, Paul DePodesta used some of James's ideas to identify which players were undervalued and then buy those players at bargain rates.

By the early 1990s it was clear that "sabermetrics," the search for new baseball knowledge, was an activity that would take place mainly outside of baseball. You could count on one hand the number of "sabermetricians" inside of baseball, and none of them appears to have had much effect. After a while they seemed more like fans who second-guessed the general manager than advisers who influenced decisions. They were forever waving printouts to show how foolish the GM had been not to have taken their advice.

Related Themes:

Page Number: 89-90

Explanation and Analysis

The strange thing about the sabermetric revolution—the period, beginning in the late 1970s, when average Americans had access to statistics about baseball, and used those statistics to analyze general managers' decisions—was that it took a long time for this new knowledge to influence the actual management of professional baseball. Amateur players and baseball fans loved studying statistics, but the actual general managers of

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sports franchises continued with the same strategies they'd used for decades previously.

Lewis doesn't give one clear reason why general managers ignored sabermetrics for so long. Perhaps there was a strong anti-intellectual bias in the sports world, and perhaps baseball insiders had other factors to consider, such as entertaining the public (for example, a glamorous, impressive player who occasionally hit home runs might sell more tickets than a solid, unglamorous player who, sabermetrically speaking, was a more valuable team member). However, in the late 1990s and early 2000s, the Oakland A's began applying sabermetrics to the player acquisition process and showed that sabermetrics could not only create a formidable team; it could also create a popular and entertaining team that people would pay to see.

Chapter 5 Quotes

Jeremy Brown, owner of the University of Alabama offensive record books as a catcher, had been so perfectly conditioned by the conventional scouting wisdom that he refused to believe that any major league baseball team could think highly of him.

Related Characters: Jeremy Brown

Related Themes:

Page Number: 102

Explanation and Analysis

In this passage, we're introduced to one of the most unlikely players on the Oakland A's: Jeremy Brown. Jeremy isn't a very impressive player, at least not traditionally speaking. He's overweight, slow, and generally incapable of wowing the talent scouts. However, Paul DePodesta uses sabermetrics to prove that Jerry is actually one of the most impressive players in baseball—he just doesn't fit with the traditional profile of how a great player looks and acts. Most surprisingly, Jeremy has been surrounded by traditionally-minded scouts for so long that he doesn't even think of himself as a great player, even though he is. During his time with the Oakland A's, coaches shape Jeremy into one of the most impressive players in the entire league, proving that sabermetrics can identify great players who would otherwise be ignored by Major League Baseball.

A revaluation in the stock market has consequences for companies and for money managers. The pieces of paper don't particularly care what you think of their intrinsic value. A revaluation in the market for baseball players resonates in the lives of young men. It was as if a signal had radiated out from the Oakland A's draft room and sought, laserlike, those guys who for their whole career had seen their accomplishments understood with an asterisk. The footnote at the bottom of the page said, "He'll never go anywhere because he doesn't look like a big league ballplayer."

Related Themes:

Page Number: 117

Explanation and Analysis

In this passage, Michael Lewis gives an overall evaluation of the sabermetric revolution in baseball management that occurred in the early 2000s. Thanks to the policies of Paul DePodesta and the success of the Oakland A's in the 2002 season, other sports franchises gradually realized that they, too, should be using sabermetrics to evaluate players' abilities, rather than relying on the testimony of experienced but ultimately unreliable talent scouts who based their decisions on superficial factors (such as appearance, or performance in a small handful of games). It's no coincidence that many of the players drafted by the A's in 2002, don't look like professional athletes in the slightest—they're overweight and uncharismatic, and therefore undervalued in the economy of the draft. It's a mark of the shallowness of the traditional drafting system that scouts overlooked so many gifted ballplayers simply because of their appearances.

Chapter 6 Quotes

Volcker was also the only commissioner with a financial background. To the growing annoyance of the others, he kept asking two provocative questions:
1. If poor teams were in such dire financial condition, why did rich guys keep paying higher prices to buy them?
2. If poor teams had no hope, how did the Oakland As, with the second lowest payroll in all of baseball, win so many games?

Related Characters: Paul Volcker

Related Themes:

Page Number: 121

Explanation and Analysis

In the 1990s, the Major League Baseball organization set up a commission whose purpose was to study the economic inequalities in the sport. One of the people appointed to the commission was the former chairman of the Federal Reserve, Paul Volcker. Volcker recognized that, as most everybody knew, Major League Baseball was wildly unfair. The biggest, richest teams had the budget to afford the best players, and, as a result, they made more money and got bigger in the long run. However, Volcker also recognized that some small, underfunded teams, such as the Oakland A's, did very well in spite of their poorness—why?

In many ways, Volcker's question dominates the entire book. As we come to see, the traditional system for evaluating the strengths and weaknesses of ballplayers is highly misleading: some excellent players aren't valued very highly at all, while others are overvalued. The result is that, at times, franchises like the Oakland A's can identify gifted players that fly under the radar of wealthier teams, such as the New York Yankees, and assemble a great team that doesn't cost much money. The premise of Volcker's question is that the economy of baseball is operating efficiently: the A's use of sabermetrics showed that this premise was false.

❝❝ The system then carved up what happened in every baseball play into countless tiny, meaningful fragments. Derivatives. "There are all sorts of things that happen in the context of a baseball play," said Armbruster, "that just never got recorded."

Related Characters: Jack Armbruster (speaker)

Related Themes:

Page Number: 132

Explanation and Analysis

Here, Lewis describes the system of derivatives, which was invented in the 1980s on Wall Street. Derivatives are a way of selling stocks and futures by dividing them up into tiny fractions and bundling those fractions together into one Frankenstein's monster of a stock. In much the same way, Paul DePodesta, who'd studied economics in college and knew about derivatives, treated players as bundles of different statistics: batting average, runs batted in, walks, etc. Paul was inspired by the example of Jack Armbruster, a former Wall Street trader who turned to studying baseball in the late 1990s. Armbruster developed a system whereby every single action in a ball game—right down to walks, steals, and catches—could be measured in terms of runs. Armbruster based this system on the derivatives market.

The beauty of Armbruster's system is that it measures everything in baseball very, very precisely in order to paint a perfect picture of a player's ability. When a player makes a catch, for example, Armbruster's method allows statisticians to measure that catch's overall contribution to the game. However, Armbruster's method could be considered dehumanizing for baseball players: instead of treating athletes as irreplaceable, larger-than-life figures—as most baseball fans would be inclined to do—his method conceives of players as interchangeable and, in a way, disposable.

Chapter 7 Quotes

❝❝ The A's front office realized right away, of course, that they couldn't replace Jason Giambi with another first baseman just like him. There wasn't another first baseman just like him and if there were they couldn't have afforded him and in any case that's not how they thought about the holes they had to fill. The important thing is not to recreate the individual," Billy Beane would later say. "The important thing is to recreate the aggregate."

Related Characters: Billy Beane (speaker), Jason Giambi

Related Themes:

Page Number: 141

Explanation and Analysis

In Chapter Seven, the Oakland A's try to solve a major problem: replacing their star player, Jason Giambi, who's left for a more lucrative contract with another team. The A's try to use the derivatives method pioneered by Jack Armbruster to replace Giambi, and the core of this strategy is that they should try to replace Giambi's statistics, not Giambi himself. In other words, they should try to find multiple players who, when their stats are combined, resemble Giambi's own statistical record. As Billy puts it, the A's are trying to recreate the aggregate, rather than find another Jason Giambi.

The beauty of the A's strategy is that it finds a creative, scientific solution to a difficult problem—replacing a talented, beloved (and expensive) player. But, as with the derivatives method in general, the A's strategy is dehumanizing: it treats Giambi as a mere collection of numbers and stats who can be replaced with comparable

stats.

Justice walked a lot. Just a few years ago Justice's ability to wait for pitches he could drive—to not get himself out by swinging at a pitcher's pitch
–had enabled him to hit lots of home runs, too. Much of his power was now gone. His new Oakland teammates witnessed his dissipation up close. After he'd hit a long fly ball, Justice would return to the A's dugout and say, matter of factly, "That used to be out." There was something morbid about it, like watching a death, play-by-play.
The A's front office didn't care. They sought only to milk the last few ounces of superior on-base percentage out of David Justice before he expired.

Related Characters: David Justice

Related Themes:

Page Number: 151

Explanation and Analysis

In this passage, we learn about David Justice, a formerly impressive ballplayer who's now a little past his prime. Justice has been acquired by the Oakland A's, and, though he assumes it's because he's a talented hitter, that's not the reason that the A's brought him on. On the contrary, the A's acquire Justice because he's phenomenal at getting on base—an underrated talent in Major League Baseball, at least in 2002, which Paul exploits to the great advantage of the team.

As with many other passages in Chapter Seven, this passage is almost cruel in the way it describes Billy and his colleagues cynically manipulating Justice for their own profit. Justice is fairly well-paid (although, as Lewis makes clear, the A's pay him far less than he's worth), but the general manager and team manager mislead him into thinking he's more talented than he really is. The A's managers' strategy is, as Lewis acknowledges here, morbid.

Chapter 8 Quotes

Billy Beane wanted him to hit. Hatteberg told his agent to cut a deal with Oakland: one year with a club option for a second with a base salary of $950,000 plus a few incentive clauses. The moment he signed it, a few days after Christmas, he had a call from Billy Beane, who said how pleased he was to have him in the lineup.
And, oh yes, he'd be playing first base.

Related Characters: Scott Hatteberg, Billy Beane

Related Themes:

Page Number: 163

Explanation and Analysis

At the beginning of Chapter Eight, Billy Beane has signed a one-year contract with Scott Hatteberg, an unpopular, unglamorous player who nonetheless has a superb on-base percentage (i.e., he has a lower than normal probability of getting an out). Billy signs Hatteberg to the A's, but he doesn't tell Hatteberg why, exactly, he's signed him. As a result, Hatteberg is confused about what he's supposed to be doing for the A's. He's assigned the position of first baseman, which is surprising since Hatteberg can barely throw anymore—he's had a bad accident in the past, and his right arm isn't in good shape at all.

Billy's strategy in the 2002 season is novel because it involves players taking positions for which they have little training or talent. However, in the long term, Billy's strategy works out. Even though Hatteberg isn't much of a first baseman, it's worth it: playing first base means that Hatteberg gets to hit, which further means that Hatteberg is almost guaranteed to get on base and help the A's win the game.

By late 1996 he was in the big leagues for good. Once he arrived however, he faced another challenge: the idiocy of the Boston Red Sox. His cultivated approach to hitting—his thoughtfulness, his patience, his need for his decisions to be informed rather than reckless—was regarded by the Boston Red Sox as a deficiency. The Red Sox encouraged their players' mystical streaks. They brought into the clubhouse a parade of shrinks and motivational speakers to teach the players to harness their aggression. Be men!

Related Characters: Scott Hatteberg

Related Themes:

Page Number: 171

Explanation and Analysis

In Chapter Eight, we learn about Scott Hatteberg's career in the big leagues; at the same time, we learn a lot about the incompetence of traditional baseball coaching. During Scott Hatteberg's time playing ball for the Red Sox, for instance, he's told to swing at more pitches, even though doing so drastically weakens his performance and hurts the team

overall. Scott's greatest asset as a hitter is his caution: he doesn't swing at the first pitch, and, as a result, he almost always hits the ball or gets a walk. However, the Red Sox coaches think that walks are for cowards and weaklings, and they virtually force Hatteberg to play more recklessly.

Professional baseball, Lewis suggests, is heavily biased toward a showy, reckless style of play that doesn't always result in wins. Part of the reason that the Oakland A's were so successful in 2002 was that they didn't play recklessly: instead, they favored mature hitters like Hatteberg who waited before swinging at the ball. In the long run, thanks to Hatteberg and his teammates, the Oakland A's steadily accumulated a record number of wins.

Chapter 9 Quotes

❝❞ The moment he hangs up he calls Mark Shapiro, current owner of Ricardo Rincon, and tells him that he has the impression that the market for Rincon is softening. Whoever the other bidder is, he says, Shapiro ought to make sure his offer is firm.

Related Characters: Mark Shapiro, Billy Beane

Related Themes:

Page Number: 195

Explanation and Analysis

In this impressive and somewhat comical scene, Billy Beane negotiates with multiple general managers (GMs) simultaneously. Billy is trying to trade some of his lesser players to other teams and acquire good players in return. Here, Billy is trying to acquire a talented, popular player named Ricardo Rincon from Mark Shapiro, the GM of the Cleveland Indians. In order to convince Shapiro to trade Rincon to the A's—and not the many other teams clamoring for Rincon—Billy tricks the Giants' GM into hedging on his (the Gants GM's) negotiations with Mark Shapiro. Convinced that Billy will be the most reliable market for Rincon, Shapiro agrees to trade Rincon to the A's rather than the Giants.

The passage is entertaining, because it allows us to see Billy at his finest: quick-thinking, charismatic, and effortlessly persuasive. Indeed, the passage confirms something Lewis suggested about Billy's athletic career: Billy's real passion was always managing baseball, not playing it. As a GM, Billy gets a chance to flex some mental muscles that he never got the chance to use in a professional game.

❝❞ In his youth he might have mouthed off. He would certainly have borne a grudge. But he was no longer young; the numbness had long since set in. He thought of himself the way the market thought of him, as an asset to be bought and sold. He'd long ago forgotten whatever it was he was meant to feel.

Related Characters: Mike Magnante

Related Themes:

Page Number: 216

Explanation and Analysis

At the end of this chapter, Billy Beane is finished trading his players. As a result, one of the Oakland A's athletes, Mike Magnante, is told that his big-league career is effectively over—Billy doesn't need him anymore. Magnante isn't angry with this news, though—he's so used to being treated like an asset to be bought or sold that he accepts his GM's decision.

The passage is one of the clearest evocations of how professional sports dehumanizes its athletes. Billy doesn't show any loyalty to Mike Magnante because loyalty would interfere with Billy's ability to make the smartest, most mathematical choice. Instead of protesting against Billy's callousness, Magnante seems to accept it: he accepts that he really is useless to the A's at this late stage in his career.

Chapter 10 Quotes

❝❞ The White Sox GM ... told Chad that his pitches weren't moving like they used to move. He was sending Chad down to Triple-A. Chad didn't have the nerve to say what he thought but he thought it all the same: *My ball doesn't move? But all I have is movement!* When he got to Triple-A, a coach assured him that his ball moved as it always had, and that the GM just needed something to tell him other than the truth, that the White Sox front office viewed him as a "Triple-A guy."

Related Characters: Chad Bradford

Related Themes:

Page Number: 233-234

Explanation and Analysis

In Chapter Ten, we meet Chad Bradford, yet another unlikely player for the Oakland A's. Bradford has never been a fan-favorite during his games—he simply doesn't look the part of an athlete. Indeed, during Bradford's time with the Chicago White Sox, he was transferred out of the big-league

team, in spite of his excellent record as a pitcher, and told that he was better suited for the Triple-A team (the best minor league team).

Lewis strongly suggests that Chad is sent back to the minor leagues because he doesn't look the part of a professional athlete, not because he's a lackluster pitcher. In traditionally-managed baseball teams, looks, charisma, and glamor are often more important assets than outright talent. The Oakland A's try to correct for these longstanding biases in pro sports by hiring unglamorous athletes who, sabermetrically speaking, are some of the best in the country.

At length, he penned an article revealing his findings for baseballprospectus.com. Its conclusion: "There is little if any difference among major league pitchers in their ability to prevent hits on balls hit into the field of play."

Related Characters: Voros McCracken

Related Themes:

Page Number: 239

Explanation and Analysis

As late as the 1990s, sabermetrics-savvy sports fans are making incredible discoveries about the game. One of these fans, a man named Voros McCracken, publishes an article in which he argues, in the face of a hundred years of baseball consensus, that there's no such thing as a pitcher who's especially good at preventing hits when he pitches into the field of play (i.e, out of the strike zone, over the plate). For decades, coaches and fans believed that a good pitcher was one who could pitch over the plate so quickly and accurately that hitters would be unable to return the ball. McCracken argues— correctly, as it turns out—that all major league pitchers can throw the ball over the plate quickly, meaning that a hitter's ability to return the ball has nothing to do with the pitcher himself.

That McCracken could make such a major discovery about baseball so late in the 20th century proves that baseball is a highly conservative, traditional-minded game, in which overturning the consensus is difficult if not impossible. It also shows the unpredictability of baseball. Though this finding is statistical, it's a statistic that actually shows that the relationship between a batter hitting or missing a good pitch is essentially random. Therefore, this finding shows that sabermetrics, while it makes the game more mathematical, can never remove the excitement and spontaneity of the sport.

Chapter 11 Quotes

This was the character whose behavior was consistent with the way he said he wanted to run his baseball team: rationally. Scientifically. This was the "objective" Billy Beane, the general manager who was certain that "you don't change guys; they are who they are." Who will describe his job as "a soap box derby. You build the car in the beginning of the year and after that all you do is push it down the hill." To this Billy Beane's way of thinking there was no point in meddling with the science experiment ... But there is another, less objective Billy Beane ... And he allows me to see that the science experiment is messier than the chief scientist usually is willing to admit.

Related Characters: Billy Beane (speaker)

Related Themes:

Page Number: 249

Explanation and Analysis

In Chapter Eleven, Billy Beane faces one of the most stressful games of his career as general manager of the Oakland A's. If the A's win this game, they'll set an all-time league record for most consecutive wins. As Lewis sees it, Billy's attitude on the night of the game exemplifies some of the contradictions in his character. On one hand, he likes to say that he's very logical and rational about baseball: he makes smart, economic decisions instead of letting his emotions get the better of him. On the other hand, Billy is obviously an emotional guy: he becomes emotionally invested in his team's success and failure, and it shows.

The final words of the paragraph, about the "science experiment" being messier than most would admit, illustrate an interesting tension in the book. Sabermetrics is a powerful science, which allows people like Paul DePodesta to take a lot of the randomness out of baseball. At the same time, sabermetrics doesn't take *all* the randomness out of the game—baseball remains an exciting, edge-of-your-seat competition between world-class athletes. By the same token, Billy Beane takes a scientific approach to the sport, but he remains emotionally invested in the outcomes of individual games.

Chapter 12 Quotes

❝❝ Coaches, players, reporters: everyone at once starts to worry that the Oakland A's don't bunt or run. Especially run. Billy Beane's total lack of interest in the stolen base—which has served the team so well for the previous 162 games—is regarded, in the postseason, as sheer folly. Even people who don't run very fast start saying that "you need to make things happen" in the postseason. Take the action to your opponent. "The atavistic need to run," Billy Beane calls it.

Related Characters: Billy Beane (speaker)

Related Themes:

Page Number: 269-270

Explanation and Analysis

After the A's win a record number of games in the 2002 season, their success should speak for itself. However, instead of drawing the obvious conclusion—that the A's sabermetric strategies are revolutionizing the game of baseball—other baseball insiders' first reaction is to question the A's strategy and suggest that the A's won so many games because they were lucky.

Right away, it should be obvious that the A's didn't win because of luck. Teams may win individual games because they're lucky, but they don't win twenty consecutive games due to sheer random chance. Nevertheless, it's easier for coaches, players, and reporters to believe that the Oakland A's strategies are "sheer folly." Baseball insiders have very clear ideas about how the game should and shouldn't be played. Rather than give up on some of these ideas as outdated superstitions (which is what the Oakland A's success has proven them to be), baseball insiders compensate by criticizing the A's performance in 2002.

❝❝ "I made one decision based on money in my life—when I signed with the Mets rather than go to Stanford—and I promised I'd never do it again." After that, Billy confined himself to the usual blather about personal reasons. None of what he said was terribly rational or "objective"—but then, neither was he. Within a week, he was back to scheming how to get the Oakland A's back to the playoffs, and Paul DePodesta was back to being on his side.

Related Characters: Billy Beane (speaker), Paul DePodesta

Related Themes:

Related Symbols:

Page Number: 280

Explanation and Analysis

At the end of the book, Billy gets a shot at an incredible contract with the Boston Red Sox: he has the opportunity to manage the team for more than twelve million dollars over the course of five years, a record for professional baseball. At first, Billy is excited about the prospect being a highly paid general manager for the Red Sox, but in the end, he chooses to remain on as the general manager of the Oakland A's.

Billy's explanation for his surprising decision is tantalizingly vague. He claims that he didn't want to make a decision purely for the money—i.e., he didn't want to manage the Red Sox, a team he didn't really care about, just because they wanted to pay him a lot. But Billy doesn't explain why he chose to remain with the A's instead of transferring to another team. It's not clear if Billy was motivated by loyalty to his team and his players, a desire to win a World Series with the A's, or some other reason. Nevertheless, his decision not to leave the A's brings the book full circle from where it began—with Billy's decision to sign with the Mets. Billy is fond of saying that after signing with the Mets, he never made another decision purely for the money. Billy honors his promises to himself and he remains with the A's.

Epilogue Quotes

❝❝ Everybody's laughing at him again. But their laughter has a different tone. It's not the sniggering laughter of the people who made fun of his body. It's something else. He looks out into the gap in left center field. The outfielders are just standing there: they've stopped chasing the ball. The ball's gone. The triple of Jeremy Brown's imagination, in reality, is a home run.

Related Characters: Jeremy Brown

Related Themes:

Page Number: 286

Explanation and Analysis

In the epilogue of the book, Michael Lewis describes one incredible play by Jeremy Brown. In the game, Brown hits the ball hard into the crowd, but he assumes it's going to bounce back into the field. In the meantime, he hustles to first base and slips. Embarrassed, Jeremy gets up and realizes that, contrary to what he expected, he's just hit a

home run.

In many ways, the passage is symbolic of the Oakland A's new approach to baseball. Jeremy Brown isn't the most graceful ballplayer in the league—he slips in the dirt, after all. But Jeremy is, without a doubt, one of the most successful and talented players in the league, even if his plays aren't always that beautiful to watch. By using sabermetrics so extensively, Paul DePodesta has ushered in a new generation of ballplayers like Jeremy, who lack conventional baseball talent and polish but who still succeed at the sport. Moreover, as the passage—with its deft mixture of comedy and drama— proves, sabermetrics isn't going to ruin baseball, as some people have claimed. Instead, sabermetrics creates ballgames that are fun, entertaining, and surprising to watch.

SUMMARY AND ANALYSIS

The color-coded icons under each analysis entry make it easy to track where the themes occur most prominently throughout the work. Each icon corresponds to one of the themes explained in the Themes section of this LitChart.

CHAPTER 1: THE CURSE OF TALENT

For decades, baseball talents scouts used the same system for predicting the success of prospective players. Players were ranked by their abilities to "run, throw, field, hit, and hit with power."

Traditional methods for ranking prospective ballplayers are crude and inaccurate—as a result, some top major-league prospects turn out to be mediocre athletes.

On a spring day in 1980 in San Diego, a group of prospective major league baseball players was playing a game with talent scouts watching from the bleachers. This was a key time in baseball history—in only a few years, the average big league salary had tripled. As a result, bad decisions from scouts could have million-dollar consequences. On that day, the scouts had been watching prospective players for months. The players were excellent—calm, fast, strong. The scouts shouted for the players to run a sixty-meter dash. To the scouts' amazement, one player, Billy Beane, ran the dash in just 6.4 seconds.

We first meet Billy Beane, the most important character in the book, when he's a star high school athlete—so talented that he wows professional talent scouts who've been watching high school games for years. Billy is the kind of ballplayer who stands out according to the crude, old-fashioned methods of ranking players, methods which Lewis, and Billy himself, will later criticize.

Billy Beane had always been a superior athlete. As a high school freshman, he pitched for the varsity baseball team. As a junior, he was six foot four, 180 pounds, and batted .500 in a notoriously tough high school league. His coach, Sam Blalock, recognized that he was major-league material—professional talent scouts would come to Billy's high school games and demand to see him play. The scouts were very impressed with Billy, but perhaps "they saw only what they wanted to see: a future big league star."

By any traditional measure, Billy seems to be the perfect all-around baseball player. However, Lewis creates a mood of uncertainty by suggesting that the talent scouts who admire Billy aren't looking at this player with a critical eye—once they've made up their minds that he's major-league material, they just see what they want to see.

In Billy's senior year, his batting average went down from .500 to .300, possibly because of pressure from scouts. He would become furious when he didn't play well, and Sam Blalock never knew how to control him. When he failed in small ways, he'd allow his frustration to interfere with his play. But the scouts seemed not to notice—their only question was, "Can I get him?"

As Billy gets older, we see small signs that he's not as gifted an athlete as the scouts seem to think. A great ballplayer isn't only defined by his batting average and other statistics—he also has to learn how to cope with pressure and adversity on the field. Instead of teaching Billy these valuable skills, Billy's coaches and scouts assume he'll just continue being perfect.

In 1980, the head talent scout from the New York Mets, Roger Jongewaard, was rumored to be considering Billy Beane for his first pick (the other possibility was a then-unknown Darryl Strawberry, and the Mets seemed to prefer Billy to Strawberry). However, Billy, who got good grades, was interested in going to college on a sports scholarship, rather than entering the major leagues straight away. Despite Billy's talent, many major league teams thought it would be foolish to make him an offer on a first round draft pick, since he might turn them down.

Darryl Strawberry went on to become one of the most talented players in baseball history. Therefore, the fact that the Mets scouts preferred Beane to Strawberry says a lot about Beane's potential. However, what Jongewaard fails to understand is that great ballplayers must be single-minded and focused on baseball. Billy clearly isn't, as evidenced by his interest in going to college (not that there's anything wrong with going to college!).

In 1980, Roger Jongewaard decided to take a big risk and extended his second first round draft pick to Billy Beane (his first, first round draft pick was Darryl Strawberry). When Jongewaard made Billy the offer, Billy was reluctant to accept. He'd been admitted to Stanford, and seemed intent on going. However, after Jongewaard took Billy on a trip to meet the Mets, Billy was impressed, and decided to sign.

Billy's reluctance isn't a good sign: it suggests that he won't be singularly focused on playing for the Mets. However, Billy agrees to sign with the Mets, partly because he's impressed and intimidated by the glamor of professional sports.

Soon after Billy's decision, he started to get cold feet. He confessed to his parents that he was having second thoughts about playing for the Mets; however, in the end, he accepted the Mets' offer and took a signing bonus of 125,000 dollars. Billy believed that he could attend Stanford during the off-season; however, when Stanford realized that Billy wouldn't be playing sports for the school, they rescinded his admission. Billy would be playing rookie ball with the Mets minor league team before he'd become a big-league player. Next, Billy's parents invested his bonus in a real estate venture that promptly went bankrupt. "One day," the chapter concludes, "Billy Beane could have been anything; the next he was just another minor league baseball player, and not even a rich one."

Billy Beane makes what turns out to be a very bad decision: impressed with the glamor of the Mets, he decides to sign. As a result, Billy starts out playing rookie ball for a minor league Mets team, with the expectation of graduating to the big-league team one day. Billy gives up the chance to go take things slowly, and become a more mature, disciplined player at Stanford. Furthermore, he even loses the supposed financial benefits of major-league play, losing his massive signing bonus right away.

CHAPTER 2: HOW TO FIND A BALLPLAYER

At the age of forty, Billy Beane was the general manager (GM) of the Oakland A's: as a GM, his job was to oversee the A's major league and minor league teams, trade and acquire players. He often said that choosing to sign with the Mets was the only decision he ever made purely for the money. However, as a GM, his job was entirely about money. In the summer of 2002, Billy was talking to his team of talent scouts in preparation for the yearly amateur draft—his favorite time of year. For once, Billy "was about to start an argument about how" the talent scouts did their jobs.

Instead of proceeding chronologically, Lewis jumps ahead from the 1980s to the early 2000s: Billy is no longer an athlete, but he works as a GM for the Oakland A's. Here we see the stirrings of Billy wanting to use his own experience to devise a better scouting method than the conventional one.

In his previous years as GM of the A's, Billy had allowed scouts to take the lead with the draft. In 2001, Billy's head scout, Grady Fuson, had chosen a high school pitcher named Jeremy Bonderman. Jeremy was "precisely the kind of pitcher Billy thought he had trained his scouting department to avoid." Billy detested recruiting high school pitchers, because they were too young—there was no telling what kind of athletes they'd become. When Fuson chose Bonderman in 2001, Billy became so furious that he threw a chair into the wall.

In his years as a GM leading up to 2002, Billy has become increasingly dissatisfied with his scouts' performance. They hire too many unreliable high school athletes, a habit that Billy finds particularly maddening because he himself was an unreliable high school athlete who never lived up to his early promise. Grady's decision to sign Jeremy Bonderman is the last straw for Billy.

In 2002, Grady Fuson had cause for alarm. Billy clearly didn't approve of his method of choosing players, and he'd been talking with his assistant, Paul DePodesta, a Harvard graduate who was using a new, mathematical way of analyzing the draft process. Paul studied economics at Harvard, and he believed that he could use math to gain a huge advantage in baseball. Paul identified many sources of bias in draft picks: 1) the tendency to generalize from personal experience; 2) the tendency to pay attention to an athlete's most recent performance; 3) the tendency to misinterpret what one sees. By ignoring these forms of bias, Paul believed, GMs could assemble an excellent team from players that other scouts passed over.

In contrast to Grady's traditional style of scouting, Lewis discusses Paul DePodesta's mathematical, computerized methods. Paul believes that scouts like Grady allow their personal biases to interfere with rational decision-making, and, as a result, they ultimately draft too many glamorous but ultimately sub-par athletes. Paul uses statistical analysis to identify less charismatic, but still highly talented athletes that other scouts have ignored.

Months before the 2001 draft picks, Paul had identified a prospective player named David Beck, whom no other scouts thought was worth drafting. Paul had asked Grady to scout Beck, but had gotten the sense that Grady never took Beck seriously. However, after the 2001 drafts, Grady, eager to "make peace with the front office," tried to make up with Paul by signing Beck. Within a few months, Beck was dominating the Arizona rookie league. Beck was the first unlikely player Paul identified with the help of statistics. In 2002, Billy was determined to use Paul's methods to choose more players.

Beck is the first of many unlikely draftees that Paul identifies as potentially superb athletes. Grady, who subscribes to the old-fashioned way of measuring ballplayers' success, is at first reluctant to sign Beck—indeed, he only does so because he wants to be back in Paul's (and, more importantly, Billy's) good graces.

In 2002, prospective players assembled in the draft room for the amateur draft. Most of these players had failed to make it to a big league team, and were now vying for minor league divisions of Major League Baseball teams. The 2002 amateur draft was hugely important for the Oakland A's, because it would give the A's an opportunity to find "cheap labor." In baseball, GMs have the right to control players' salaries for six years in the minor leagues and seven in the major leagues. As a result, it's common for extremely talented players to be paid "the baseball equivalent of slave's wages" for much of their careers. A relatively poor team like the A's needed to acquire budget players, hope that some would end up being very talented, and then keep those players on at a small salary for as long as possible. Furthermore, 2002 was an important year for the A's because the team had seven first-round picks. Billy needed to seize his opportunity, using Paul's methods.

Relatively underfunded teams like the Oakland A's need to recruit talented players before they're expensive (at which point only a handful of rich teams can afford them). 2002 was an important year in baseball history, due to the alignment of a series of unrelated events: Paul DePodesta working for the Oakland A's; Bill Beane's dissatisfaction with his traditionally-minded scouts; the A's opportunity to draft seven players in the first round. Had these events not happened around the same time, the Oakland A's probably wouldn't have had such a tremendous season in 2002, and baseball wouldn't have experienced a paradigm shift. It's ironic that the sabermetric revolution—i.e., the approach that tries to eliminate random chance from baseball—occurred in 2002 partly because of random chance.

Billy, Paul, and the team of scouts begin weeding through the prospective players. Erik Kubota, the head talent scout whom Billy has hired after firing Grady, suggests that the A's acquire a high school pitcher. Other scouts, including an older scout, Dick Bogard (nicknamed Bogie), argue about the choice. They point out that the high schooler has "bad makeup"—in other words, bad character and focus. The scouts discuss hundreds of other players and try to determine which ones are likely to go to college instead of signing with a team. For now, there are only two reasons why the scouts pass over a prospect: age and high salary expectations. To everyone's surprise, Billy orders the scouts to throw out all high school players.

Even though Billy has fired Grady from the Oakland A's, his replacement, Erik, continues to favor gifted high school athletes over college ballplayers. In the past, Billy has discouraged his employees from drafting high schoolers, but it's not until 2002 that he forbids the practice altogether. Most of the old scouts on Billy's team take an intuitive approach to drafting, speaking in vague ineffable terms, such as "makeup." Instead of complying with their approach, Billy orders a systematic rethinking of the drafting procedure.

After throwing out the players who are too old, too young, or too expensive, the scouts begin ranking everyone. They talk about a player named Nick Swisher, in whom Billy is very interested. Unusually, Billy has refrained from traveling to see Swisher's games, for fear that doing so will raise Swisher's profile and result in him signing with another team. Swisher is one of the only players who Paul, Billy, and the scouts agree is worth signing.

The discussion kicks off with an athlete so gifted that he appeals to both Paul and the old-fashioned scouts. (However, it's likely that Paul and the old-fashioned scouts like Nick Swisher for different reasons: Paul because he has a good on-base average; the scouts because he has a high batting average).

The conversation turns to other players, and Billy begins to argue with his scouts. The scouts name strong, powerful players who, on paper, seem like great prospects. However, Billy picks apart the players' chances, noting that "power hitters," in spite of their strength, are rarely consistent. Billy then turns to a player named Mark Teahen, a college baseman. The scouts protest that Teahen's name hasn't come up once all year; however, Paul, looking at his computer, pulls up Teahen's statistics, and finds that Teahen rarely hits home runs, but hits very consistently. Billy approves of Teahen and puts his name on the shortlist.

The key word in this passage is "consistent." Billy's team of talent scouts has been trained to favor prospects who make big impressive plays, catching the scouts' eyes during their cross-country travels. Paul, on the other hand, favors athletes who are consistently good, even if they're not the most impressive, glamorous players. Instead of basing his assessments on watching a few of a player's games, Paul makes his decisions by analyzing the player's entire sports record on his computer.

The next player is Jeremy Brown. The traditionally-minded scouts find it absurd that Billy is so interested in Brown, since Brown barely made the cut to be considered for drafting. However, Paul argues that Brown has had a huge number of walks in his career. Paul has spent years studying the relative importance of difference baseball statistics, and found that speed and fielding ability are hugely overvalued in drafting players. The most important statistics are relatively obscure ones, such as **on-base percentage**, pitches per plate, and walk speed, which do a better job of measuring a player's overall contribution to the game. Unconvinced, the scouts point out that Brown is overweight and slow. Nevertheless, Billy listens to Paul and puts Brown at the top of his list.

In many ways, Jeremy Brown is Exhibit A for Paul and Billy's new sabermetric approach to drafting players. Brown isn't a particularly popular player, either with fans or with talent scouts—indeed, he's barely made the cut for the draft. However, Brown is talented at getting walks (i.e., going to first base because the pitcher throws too many balls). Getting walks isn't often considered the mark of a great ballplayer, but Paul values it for the simple reason that, impressive or not, it contributes to winning the game.

The disagreement between Paul and scouts exemplifies a basic disagreement in finding major league ballplayers. Scouts believe that finding great ballplayers involves traveling the U.S. and watching them play; Paul believes that it involves studying statistics. Paul prefers drafting college players to high school players because college players have more statistics, which give him a better sense of their ability. The scouts derisively refer to Paul's method of scouting as "performance scouting"—assessing what a player will do based on what he's already done. The scouts prefer to assess players based on their instincts about what the players *might* do.

The traditional scouts' approach to drafting exhibits one of the most basic forms of human bias: the tendency to favor what one sees with one's own eyes over the overall record. Thus, the scouts favor prospective ballplayers whose games they've personally seen. Paul, in spite of the scouts' derision, is trying to practice performance scouting: in other words, he bases his assessments on a player's overall performance, rather than a tiny sample that may or may not be representative of the player's talent.

Billy and Paul assemble a list of eight college ballplayers, none of whom are particularly popular with the scouts. One of the scouts in the room that day, Bogie, has been scouting for fifty years. He remembers going to see Billy Beane play in 1980, when Beane was a young, promising high school player. At the time, Bogard was so impressed with Billy that he phoned his boss at the Houston Astros and told him that he'd found a better prospective player than Darryl Strawberry. Back in 2002, some of the other scouts ask Bogard which of the eight players on the board resembles a young Billy Beane. Bogard whispers back, "There *is* no Billy Beane. Not up there." As GM of the A's, Billy has ignored all the players who resemble his own young self.

Bogie's observation encapsulates what Billy is trying to accomplish with the 2002 draft. Unlike most GMs, Billy knows first-hand why traditional scouting methods don't always produce the best ballplayers: in fact, Billy's failed career as a ballplayer proves that *these methods sometimes fall short. Instead of hiring impressive, glamorous athletes who wow the scouts in a small handful of games, Billy and Paul will hire consistent, disciplined, relatively unimpressive players, who won't always wow fans in individual games, but who'll do well over the course of the entire season.*

CHAPTER 3: THE ENLIGHTENMENT

In the 1980s, after Billy Beane signed with the Mets, he felt uncomfortable. Oblivious to his reticence, the Mets general manager (GM) sent Billy to the high-level rookie team, with college players, and Darryl Strawberry to the low-level rookie team, with high schoolers. Billie didn't fit in with his older teammates. In his early months with the team he disappointed Roger Jongewaard, the Mets' head scout, who had assumed that Billy would quickly graduate from the rookie team to the big league team. Billy and Strawberry were promoted to the Mets' Double-A team in Mississippi. There, Billy excelled at wooing women, but "crumbled" on the field. While Strawberry was named MVP for the Texas League, Billy batted a mediocre .220.

In this chapter, Lewis will fill in some of the blanks regarding Billy Beane's career. After being drafted by the Mets, Billy struggled with his new rookie team: as Lewis already hinted in Chapter One, Billy's struggles were psychological as well as physical. Billy was under a tremendous amount of pressure to succeed, and he didn't make many close, supportive friends. But instead of giving Billy the psychological support that he needed, Jongewaard and the other Mets workers assumed that Billy would be fine.

Billy's problems continued throughout his time with the Mets' Double-A team. His roommate, Lenny Dykstra, rose to become a promising player, and there were rumors that he was being groomed to play left-field on the Mets' big league team. On paper, Lenny was an inferior athlete to Billy in every way: he wasn't as smart, and he couldn't hit as hard or run as fast. But Lenny's single-mindedness gave him concentration and endurance. In 1984, after a stint in the Mets' big league training camp, Billy was sent back to the minor leagues—his coaches told him that they didn't think he really wanted to play baseball.

Lewis again suggests that Billy's failings as a ballplayer stem from his lack of psychological preparation for major-league play, not just his physical weaknesses. Remember that he wasn't even sure he wanted to sign with the Mets in the first place. Lenny, by contrast, is single-minded in his pursuit of success in the major leagues. As a result, Lenny thrives while Billy struggles.

Billy was an exceptionally talented player: fast, quick-thinking, hard-working. His great weakness was that he couldn't hit consistently. At bat, he lost focus, and became furious when he missed. In 1985, while Billy was still struggling in the minor leagues, Lenny was brought up to the big league team. Shortly afterwards, the Mets traded Billy to the Minnesota Twins. With the Twins, Billy performed inconsistently, and his GMs quickly wrote him out of the starting lineup.

Billy's weaknesses weren't purely psychological: he wasn't the best hitter, either. However, even with hitting, Lewis suggests that Billy came up short because he lacked focus and discipline. After years of being told that he was the best, Billy couldn't deal with failure, however small, and he couldn't summon the focus necessary to succeed.

For the next few years, Billy moved back and forth between Triple-A and big league teams in Detroit, Oakland, and Minnesota. During this time, he acquired a reputation as "the guy destined for the Hall of Fame who never panned out." He tried to find ways to perfect his swing, but he never succeeded; furthermore, he continued to suffer from performance pressure. Billy played alongside numerous people who became big stars, and he played minor roles in important games. As a result, he called himself "the Forrest Gump of baseball."

Throughout the chapter, Lewis emphasizes the way that other people perceive Billy: by this point, he's seen as someone who failed to live up to his potential. Expectations cripple Billy's potential. Instead of investing himself whole-heartedly in the game, he finds himself cracking under pressure.

Why did Billy's career never pan out? His friends and teammates offered hundreds of explanations. He lacked confidence; he tried too hard to impress people; he lacked discipline; he was "all over the place." During Billy's time playing for the Oakland A's in the eighties, he spent time with the team's resident sports psychologist, Harvey Dorfman. Harvey later said that Billy's problem was that he had "trouble with failure." Instead of teaching Billy how to cope with failure and intense pressure, his coaches rushed him through his career, expecting that he'd keep succeeding instead of cracking under the pressure.

It's notable that almost all the explanations Billy's friends and teammates offer reflect his lack of focus. A great athlete, Lewis suggests, isn't just physically talented—he must also be psychologically ready for the pressures of major-league sports. Instead of taking a calm, rational view of Billy's talent (in other words, recognizing that there were aspects of his game that needed improvement), Billy's coaches and scouts pressured him to succeed, virtually guaranteeing that he'd fail.

In 1990, Billy was twenty-seven years old—the prime of his baseball-playing years—and newly married to his high school girlfriend. He'd begun to face the fact that, inexplicably, he'd gone from a top prospect to a failure. However, instead of abandoning baseball for good, he went to the Oakland A's and demanded a job as an advance scout. The GM and big-league team manager were baffled—it was as if a Hollywood actor was demanding a job as a cameraman. Nevertheless, Sandy Alderson, the GM of the A's, decided to give him the job—it was clear to them that Billy didn't want to play baseball anymore, and, perhaps, he never really had.

In 1990, Billy enters phase two of his career: baseball management. While most people would (and did) consider Billy's career move a bad choice, Billy obviously didn't have much desire to play professional baseball. As his lackluster career proves, you can't become a successful athlete if you don't care to be one.

At the time when Billy was becoming a talent scout, the A's were going through a series of major changes. Since the 70s, the team had been owned by Walter A. Haas, a wealthy philanthropist who believed that it was his job to "do Oakland proud" by lavishing money on the team. In 1995, Haas died, and the two real estate developers who inherited his estate, Steve Schott and Ken Hofmann, told Sandy Alderson that he needed to run the team on a tighter budget.

The end of Walter Haas's tenure as owner of the Oakland A's coincided with an overall shift in the way sports franchises were managed. Where before, franchises were seen as philanthropic (read: money-losing) endeavors, franchises were now seen as businesses, which needed to maximize profits by any means necessary.

In response to demands for a tighter budget, Alderson pioneered a scientific approach to building a good team. He argued that, historically, good batters were undervalued. Furthermore, he believed that the key to winning baseball was avoiding outs, not hitting home runs. Therefore, the best hitters were those with a good "**on-base percentage**"—i.e., a low probability of getting out. By 1995, he'd created a corporate culture structured around on-base percentage.

Billy Beane was the first GM of the A's to adopt a full-scale sabermetric approach to drafting athletes; however, he wasn't the first A's GM to take a scientific approach to his job. Alderson recognized that teams could win more games by adopting a steadier, more consistent strategy of play: instead of going for home runs, he encouraged his athletes to avoid outs.

Alderson's methods were critical in rethinking baseball, but he wasn't influential enough to change the way major-league teams played; his innovations applied mostly to the minor leagues. The manager of the Oakland A's major league team—in other words, the employee tasked with overseeing the team's day-to-day practices and making decisions during games—Tony La Russa, didn't respect most of Alderson's ideas. The result was that Oakland players would work their ways through the minor leagues under Alderson's supervision, learning how to be cautious and tactical, and then, once they graduated to the major league, would become too aggressive. In the late nineties, Tony La Russa was fired for losing too many games, and Alderson replaced him with a manager named Art Howe, who he hoped would implement his policies.

Alderson's methods were proven to win more games; however, instead of getting the message and rethinking his big-league team's strategy, Tony La Russa continued to use the same management strategies as ever. La Russa's obliviousness says a lot about the conservatism and traditionalism of baseball: athletes, coaches, and GMs are often reluctant to institute sweeping changes in "America's pastime."

In the early nineties, Billy Beane worked as a talent scout. His wife left him, supposedly because she thought he was too intense. Billy devoted himself to scouting; gradually, he realized that he was more interested in managing baseball than he'd ever been in playing. He loved Alderson's scientific approach to the game. Billy's excitement grew after Alderson referred him to a writer named Bill James. James's ideas led Billy far away from the pressures of professional baseball and toward a calm, rational approach to the game.

Billy Beane admired the scientific, sabermetric approach to baseball management because it eliminated uncertainty, and therefore pressure, from the game. As an athlete, Billy hadn't been able to deal with pressure in a healthy way; thus, from a purely psychological perspective, it makes a certain amount of sense that Billy, as a GM, favored sabermetrics.

CHAPTER 4: FIELD OF IGNORANCE

Bill James, the father of sabermetrics (and the man who coined the word), was the rare kind of writer who had no apparent motive for becoming a writer. He had no literary role models, was never encouraged to write, and spent most of his twenties working as a night watchman. In the late 70s, he began writing about baseball, and in 1977 he self-published a collection of his work. The collection was unremarkable except for a section in which James critiqued fielding statistics. Ingeniously, he showed that fielding statistics were unique in baseball, because they depended upon an arbitrary definition of what is and isn't an error. He concluded that GMs were making important decisions based on statistics that didn't measure what they were supposed to measure.

In this chapter, Lewis discusses the history of sabermetrics: the use of statistics and mathematics to calculate optimal playing strategies in the game of baseball. Bill James is considered the father of sabermetrics because, at a time when personal computers made it easier for the average American to study thousands of baseball stats, James recognized that baseball GMs were making decisions based on players' statistics, but didn't understand what these statistics really meant.

James proposed a new sports statistic that could help GMs make intelligent decisions with their players: the range factor, in other words, the number of successful plays a player made per game. James acknowledged that range factor wasn't a perfect statistic—like existing fielding statistics, it hinged on a somewhat arbitrary definition of success (for example, a mediocre outfielder playing against a fly ball pitcher would have a higher range factor than a talented outfielder playing against a sinker ball pitcher)—but it gave a better sense for a player's overall ability.

It's important to note that James's new, modified statistics weren't perfect, either: like existing fielding statistics, James's range factor hinged upon an arbitrary definition of success and failure. James's contribution to sabermetrics wasn't to provide an authoritative list of baseball statistics so much as it was to challenge baseball dogma. Put another way, he was better at asking questions than he was at providing answers.

The flaws in baseball statistics date back more than a century. In the 1860s, a British journalist named Henry Chadwick pioneered the concept of the box score in baseball. Chadwick's reference point was the game of cricket, and, as a result, many of his statistics painted a misleading picture of the game. For example, he believed that when a player earned a walk, it was an error. He emphasized the importance of batting average at the expense of more comprehensive statistics. He also pioneered the Runs Batted In, or RBI, statistic. In the 20th century, RBI became so fetishized that it altered the way people played baseball—ballplayers would swing at bad pitches in order to boost their RBI count.

In the 1970s, the most familiar baseball statistics had been developed in the 1860s and, by and large, had not been questioned since that time. The biggest problem with Chadwick's statistics, as James saw it, was that it became more important for athletes to achieve high statistics than to win the game. Furthermore, there were occasions when high statistics interfered with winning games. For example, a hitter who tries to get a high RBI is often less of an asset to his team than a hitter who has a low RBI but gets lots of walks.

Between Chadwick and James, there had been periodic attempts to rethink baseball statistics. But it wasn't until James's lifetime that people had access to computers and, therefore, to huge numbers of baseball statistics. Year after year, James published baseball abstracts in which he discussed important statistical principles. He had a no-nonsense approach to sports writing: he dismissed statistics like the batting average, writing, "It should be obvious that the purpose of an offense is not to compile a high batting average." James argued that baseball statistics were biased in order to showcase a player's ability to do impressive things, such as hit home runs and steal bases, rather than their ability to gradually help the team win through a combination of power hits, regular hits, and walks. Not all of James's ideas were right, but he sparked new interest in the math of baseball.

The statistical methods that James, and later Paul DePodesta, used to reform baseball statistics had been around for decades (or in some cases, centuries), but it wasn't until the seventies that ordinary people had access to large amounts of baseball statistics, to which they could apply statistical methods. In many ways, James's ideas reflect Billy Beane's career. James argued that baseball is biased in favor of impressive, misleading statistics, such as batting average, that don't always correlate with a player's overall ability. Similarly, talent scouts were impressed with Billy because of his impressive, though uneven, performance.

One of James's most important contemporaries was a pharmaceutical scientist named Dick Cramer. Cramer's most famous idea was that clutch-hitting (i.e., being good under pressure) didn't exist in major league baseball, contrary to popular opinion. Cramer studied thousands of statistics and found zero evidence that certain players performed better in high-stakes situations. Cramer, and thousands of other amateur statisticians, sent fan letters to James thanking him for his annual baseball abstracts.

One consequence of the sabermetric revolution was that baseball fans found that their sport was full of superstitions that had become accepted wisdom about the game.

In the 1980s, the sabermetrics movement had grown so vast that people began petitioning Major League Baseball to publicize player statistics. Dick Cramer and Bill James started a business called STATS Inc., the purpose of which was to measure and publicize baseball stats. Cramer and James sent employees around the country to record different statistics, including many that Major League Baseball didn't even measure.

Sabermetrics was a grassroots effort: its greatest advocates were fans and baseball wonks, rather than GMs and coaches. Because the Major League Baseball system refused to reform its practices and continued basing management around misleading stats, super-fans like Cramer and James took matters into their own hands.

Throughout the eighties, baseball GMs largely failed to see the importance of statisticians' research; instead, they trusted old-fashioned, misleading statistics, such as batting average. In part, the reason that GMs ignored baseball wonks was because they didn't always agree with the strategies that statistical research recommended. For example, some GMs refused to believe that their teams could do better by refraining from trying to hit home runs, since "they believed home runs sold tickets."

Lewis doesn't offer an in-depth explanation of why coaches refused to adopt sabermetrics reforms that, one would think, would have helped the coaches do their jobs. However, Lewis suggests that 1) coaches were very traditional and set in their thinking, and 2) coaches weren't just trying to win games—they were trying to entertain millions of fans. Thus, even if the correct, sabermetric decision was to acquire and use players with lots of walks, coaches continued to prefer uneven players who could hit homers and thereby sell tickets.

Frustrated with trying to pass on its information to teams, STATS Inc. decided to sell its information to fans. At the time, sabermetrics was in the process of becoming a mainstream movement; indeed, *Sports Illustrated* wrote a feature article on Bill James. Also around this time, sports fans were becoming more interested in fantasy league teams, reflecting their interest in the tiny details of the game. STATS Inc. became a successful company and the leading source of information for baseball fanatics. In 1999, Fox News bought it for forty-five million dollars.

As sabermetrics became increasingly mainstream, it became clearer that Major League Baseball was behind the times. Coaches, GMs, and managers assumed that baseball fans just wanted to see players hit home runs when, by all the evidence, fans increasingly wanted to approach the game from a technical, mathematical standpoint and study the intricate details of the game.

In spite of the rapidly growing interest in sabermetrics, the management of major league baseball barely changed in the eighties and nineties. GMs sometimes hired statistics-loving assistants, but rarely prioritized their advice. Articles mocked the often nerdy and uncharismatic statisticians hired by baseball GMs and, in response, GMs often chose to fire their statisticians rather than face further mockery. In the late nineties, it was apparent that big league baseball was "unwilling to rethink anything." Even the owners of sports teams who respected statistics were unwilling to impose their beliefs on the management structure of the team.

Major league GMs sometimes recruited token statisticians, but they usually didn't take these people's advice seriously. The passage also suggests another, perhaps obvious, reason why coaches and GMs didn't listen to their statisticians: they regarded statisticians as nerdy and out of touch with the physical side of the sport, and they were too proud to take advice from people who couldn't even throw a ball.

As time went on, James became increasingly frustrated with the slowness of professional baseball and its disrespect for the mathematics of the game. In his writing, he maintained a detached, vaguely bemused tone, as if amazed that professional sports continued to subscribe to the same myths about winning games. In the nineties, James gave up writing his annual baseball reports. No one ever told him that a major league team, the Oakland A's, was finally putting his ideas into practice.

The evolution in James's literary style reflects the evolution the relationship between sabermetrics and baseball management. In other words, as it seemed to become clear that baseball GMs would never listen to statisticians, James became increasingly curmudgeonly and sardonic in his writing, unaware that the Oakland A's were, in fact, listening to him.

CHAPTER 5: THE JEREMY BROWN BLUE PLATE SPECIAL

Few people would think that intellectuals have played a strong role in the history of baseball, because baseball is so clearly a game of action. It wasn't until the late nineties that a "man of action" applied intellectuals' ideas to the sport. In 1997, Billy Beane had become GM of the Oakland A's, and he'd read a lot of Bill James. He agreed with James's argument that college players were a far better investment than high school players, and his assistant, Paul DePodesta, had made a statistical study of the matter and concluded more or less the same thing.

In part, the reason that Major League Baseball finally embraced sabermetrics was that Billy Beane, the GM of the Oakland A's, had seen first-hand why traditional baseball management methods didn't work out. Billy knew better than most why drafting players straight out of high school was often a mistake, and, therefore, why a more measured, statistical approach might be preferable.

On the morning of the amateur draft, Billy Beane contemplates some of the unlikely players that he and Paul have identified. One, a lightweight center field named Steve Stanley, is so unimpressive-looking that no scouts have bothered to list him as a prospect, despite the fact that he's extremely talented. Privately, Billy has negotiated with Stanley, assuring him that he'll sign him for 200,000 dollars. In public, Billy has tried to give other GMs the impression that he's recruiting people like Stanley because the A's are strapped for cash, but in secret, Billy wants players like Stanley because they're better.

We're back in 2002, on draft day, and Billy is implementing a draft policy based largely on the ideas of Paul DePodesta and Bill James. In economic terms, Billy has discovered a hole in the market: he's discovered that certain players, such as the lightweight, uncharismatic Steve Stanley, are undervalued by the baseball establishment. By recruiting lots of players like Stanley, Billy can not only win more games but also save a fortune.

One of Billy's other scouts has told Billy about a promising but overweight fielder named Jeremy Brown. Brown has been so unpopular with scouts that when the A's called him with a first-round offer, Brown assumed his roommate was prank calling him. The A's scouts have told Brown that he can sign with the Oakland A's, on the condition that he lose weight. Billy is also interested in signing a player named Nick Swisher, whom both he and the scouts admire.

Like Steve Stanley, Jeremy Brown doesn't look the part of a pro athlete: he's overweight and generally uncharismatic. However, Billy doesn't only draft people like Jeremy and Steve; he also drafts conventionally talented players like Swisher, suggesting that there's some overlap between Paul's sabermetric approach and the old-fashioned approach of the talent scouts.

Billy Beane gets a call from another GM, J. P. Ricciardi, of the Blue Jays, telling him that a top prospect, the high school pitcher Denard Span, has refused to sign with anyone for less than 2.6 million dollars. Now, nobody is going to sign Denard. Billy realizes what this means: the Colorado Rockies are going to take a different pitcher, which in turn means that the Mets are going to take Nick Swisher before the A's get a chance to claim him. Billy is furious—draft day is either the best or the worst day of his year, and in 2002, it appears to be the worst. As Billy shouts expletives, Paul mutters, "I think Swisher will get to us, but I'm not going to say that right now."

In order to be an effective GM, Billy Beane needs to reach decisions by first calculating what the other GMs will do. Although Billy is trying to institute a scientific, rational approach to A's management, he's still a temperamental, emotionally volatile man, unlike the calmer, more self-controlled Paul DePodesta.

Moments later, Billy calls Steve Phillips of the Mets and asks him about Swisher. Phillips tells Billy that he's not prioritizing Swisher; instead, he's probably going to take a high school pitcher "in whom the A's haven't the slightest interest." Encouraged, Billy realizes that he might get Swisher after all. He starts doing the math with Paul: there's a chance that the Detroit Tigers, who are ahead of the A's in the draft, will choose a sentimental favorite, Prince Fielder, the son of a former Tigers player. This would mean that the Mets would get a shot at one of their top draft picks, and that the A's might therefore get a shot at Swisher. As Billy and the rest of his team talk, the draft officially begins.

While Billy and Paul work together to institute a new, scientific approach, the other teams in Major League Baseball use the same strategies they've used for decades—e.g., drafting high schoolers. Billy continues calculating what the other GMs will do so that he can have a better idea of which players will still be available to him when it's his turn to make selections.

Billy Beane examines the list he's put together: eight pitchers and twelve position players. His list expresses "a new view of amateur players," and includes many athletes in whom other scouts have no interest. However, some athletes on the list are conventionally talented. Two of these, Robert Brownlie and Jeremy Guthrie, both pitchers, are represented by a notoriously savvy agent named Scott Boras. In all likelihood, Billy won't be able to afford athletes represented by Boras—he needs to save money.

Billy's list symbolizes the solution that he and Paul have devised to the problem of Oakland's limited resources. With a relatively small budget, Billy and Paul have found a way to draft spectacular, unknown talent, for virtually nothing. Oakland has no choice but to adopt such a strategy, since most sought-after players, such as Brownlie and Guthrie, are expensive.

The draft begins with the Pittsburgh Pirates making the first pick of the season: four million on an Indiana pitcher. The next five teams all choose high school players, whom the A's didn't want, anyway. It's strange that the teams with the privilege of choosing first in the draft gamble on high schoolers that, historically, have a high chance of failing to live up to their potential. Billy and Paul aren't reckless gamblers anymore: they're shrewd card-counters.

It's another sign of the traditionalism of baseball that major league franchises continue using the same strategies that have brought them mixed success in the past. Thus, teams continue drafting high school athletes, despite the high probability that, like Billy, they'll fail to live up to their potential.

The other teams make their picks: Milwaukee takes Prince Fielder, meaning that the Mets take Scott Kazmir, a player they've been eyeing for a long time, meaning that the Oakland A's get to pick Nick Swisher. For the next rounds of the draft pick, Billy consults frequently with Paul and Erik. To their amazement, nobody takes Joe Blanton, another talented pitcher; as a result, the A's claim Blanton and Benjamin Fritz, a pitcher who, according to Paul's computer, is one of the best in the country.

Paul is vindicated: just as he predicted, the A's get a shot at Swisher. He's further vindicated when the A's get a shot at two other promising athletes, Blanton and Fritz. In 2002, Paul's methods for identifying top prospects is so radical that none of the other teams have bothered to target either Blanton or Fritz—they're still using old, unreliable methods.

For Billy's next choice, he selects Jeremy Brown—a choice which will make him a laughingstock. For the rest of the morning, the A's acquire most of the players from their wish list. Paul is especially proud of picking a first baseman named Brant Colamarino, who "might be the best hitter in the country," even though none of the scouts know it. Colamarino, like many of the A's picks, is large and uncharismatic, but he excels in the statistics that Paul has identified.

Many of the Oakland A's picks, including Brown and Colamarino, don't look *like conventional athletes. However, Paul's research suggests that looks aren't an accurate reflection of athletic talent. Thus might suggest another major problem with traditional scouting methods; in their limited time, scouts are more likely to judge a book by its cover rather than delve into the details.*

In all, the A's succeed in acquiring thirteen of the players on their wish list—most teams would be glad to snag even three or four. Though few realize it at the time, the A's new strategy will change the way baseball is played. Billy Beane is, in any ways, ideally positioned to change baseball: he's seen, first-hand, the inadequacy of traditional scouting methods, and he seems set on finding players who are unlike him.

The fact that the A's acquire so many of their top picks during the draft suggests that Paul's sabermetric strategy is still new. Billy takes a chance on Paul because he knows from personal experience that drafting high school athletes, as the other teams have been doing, is often a recipe for disaster.

After the draft is over, one of Billy's scouts tells him that Mike Kriger, shortstop for the University of Florida, who'd previously been told he was too small to play pro ball, has asked the scout to thank Billy. In all, draft day 2002 will be one of the happiest days of Billy's career. Most of his scouts leave him soon afterwards, convinced—rightly so—that Billy is no longer listening to their opinions. The scouts have no idea that Billy is about to fire a "missile at the conventional wisdom of major league baseball."

Billy's decision-making on draft day reflects his lack of interest in his talent scouts' advice, and as a result, his scouts leave him soon afterwards. For the rest of 2002, Billy continues to prefer a sabermetric approach to the old-fashioned, biased approach: he acquires and favors athletes with good stats, rather than traditional talent and glamor.

CHAPTER 6: THE SCIENCE OF WINNING AN UNFAIR GAME

In the 2002 draft, Billy Beane faced a crisis: how to make the Oakland A's into a viable team with a third of the budget of the New York Yankees? Before he got to know Paul, Billy had concluded that there was no way to solve the crisis: the richest teams in baseball had a huge advantage, because they could buy the best players, while the poorer teams had to settle for the bargain players.

In this passage, Lewis will study the overall structure of Major League Baseball, a organization in which some teams, such as the New York Yankees, have much more money than others. In general, it seems that baseball is unfair because the richest teams can continue buying the best, more expensive athletes (which, it's often argued, is why the Yankees win more World Series than any other team).

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In 1999, Major League Baseball created a commission to examine the inequalities of pro ball: they hired four famous people, including the president of Yale, a U.S. senator, and the ex-chairman of the Federal Reserve, to look into the subject. The commission concluded, predictably, that baseball was wildly unequal, and that, over time, the biggest teams would continue to get bigger. The problem with the commission's conclusions, voiced by the ex-chairman of the Federal Reserve, Paul Volcker, was simple: if rich teams had such a huge advantage, then why did the Oakland A's, the second poorest team in the league, win so many games? In 1999, for example, the A's went 87-75.

Broadly, the commission concluded that rich teams had a major advantage over poor teams. However, the Oakland A's are a strong counterexample to such a conclusion: based strictly on their funding, one would think that they'd be one of the worst teams in the league. The A's success suggests that the baseball market is inefficient; put another way, some baseball players are either undervalued or overvalued.

In 1999, Billy Beane had presented to Paul Volcker, arguing that his own team's success was, in essence, a fluke. He told Volcker that nobody went to A's games, no matter how many games the A's won, because there were no famous players on the team, and that, in the long run, the A's would become less successful. But Billy didn't believe his own presentation. He prided himself on *making* stars out of A's ballplayers, and he knew that the A's were getting better over time—in both 2000 and 2001, the A's made the playoffs (where they lost to the Yankees). The A's were, in short, an embarrassment to conventional wisdom, living proof that you didn't have to have the most money to build a good team.

In 1999, Billy still spouts the same baseball dogma: he tells Volcker that his team's success is a random fluke, nothing more. But although Billy doesn't believe his own presentation, he doesn't know what, precisely, accounts for his team's success in recent seasons.

In 2001, the A's lost three of their best players to higher-paying teams. In 2002, however, the A's won virtually the same number of games they'd won in 2001. How is this possible? First, consider Jason Isringhausen, who left the Oakland A's in 2001 and signed a lucrative contract with the Saint Louis Cardinals. Isringhausen had been a minor-league pitcher before Billy acquired him in 1999. Billy reinvented Isringhausen as a "closer"—i.e., a pitcher who can wrap up a close game without the other team scoring a run. However, Billy knew that closers were overrated in baseball. In essence, he bought Isringhausen for cheap and "pumped him up" to become highly sought-after. When Isringhausen left for the Cardinals, Beane won an extra first-round draft pick and a first-round compensation pick (which the Cardinals were required to give to the A's, due to the rules of Major League Baseball). Beane then used his extra first-round picked to draft Jeremy Brown and Benjamin Fritz.

One important consequence of Billy's strategy during the 2002 season is that no player is irreplaceable: in other words, no matter how talented a ballplayer might be, one can mimic that player's statistics by hiring another player, or, more likely, an aggregate of multiple other players. Furthermore, many of the A's players who, from fans' perspective, are important to the team's success aren't actually that important: like Isringhausen, they're popular and entertaining, but not always the best overall players.

The second major player that Billy traded away in 2001 was Johnny Damon, a center fielder. In many ways, the decision to trade Damon to another team was representative of the A's new sabermetric strategy. Damon was a fan favorite, but he wasn't as talented as fans—and the scouts—believed, especially not as a center field defense or a leadoff hitter. When Paul crunched the numbers, he realized that **on-base percentage** was a much more important statistic for ballplayers than slugging percentage, which ran contrary to intuition. In other words, a player who always hits the ball but sometimes gets out is far less valuable than a player who sometimes hits the ball but never gets out. Johnny Damon had an abnormally low on-base percentage, and so the A's traded him.

Johnny Damon, much like Isringhausen, is charismatic and popular with fans, but he doesn't contribute as much to the game as certain other players do. Paul's emphasis on on-base percentage reflects his calm, levelheaded approach to winning baseball games. While traditional coaches would prefer a player who hits the ball a lot, Paul prefers less superficially impressive players who don't always hit home runs but who rarely get outs for their team, either. Thus, Paul encourages Billy to transfer Johnny, whose on-base percentage is too low.

In order to understand Paul DePodesta's sabermetric methods, we need to understand a few things about Wall Street. In the 1980s, financial markets became computerized for the first time, and markets began trading options and futures—in short, derivatives. Sometimes, derivatives were highly undervalued, and the people who figured this out, often mathematicians from elite universities, used their knowledge to make huge profits. Two such people, Ken Mauriello and Jack Armbruster, retired from finance and founded AVM Systems, a company that applied derivative methods to baseball.

Another major influence on Paul DePodesta's management strategy, in addition to Bill James and the sabermetric revolution, was the rise of the derivative market. The link between derivatives and baseball statistics confirms what Lewis has already made clear: baseball is a business, and, as with any other business, there are strategies for controlling the market and using one's resources efficiently.

Armbruster and Mauriello's insight with regard to baseball was that too often, players were being rewarded for luck, and these improper rewards reflected misleading statistics. The two men learned how to use math to hold different players responsible for different plays and answer seemingly impossible questions like, "how many doubles does a player have to hit to make up for the fly balls he doesn't catch?" They found a way to assess the value of each player's actions in terms of the same unit: runs. Everything a player did represented a fraction of a run—in effect, a derivative. When Paul DePodesta interned for the Cleveland Indians, he met Mauriello and Armbruster. In 1998, he convinced Billy Beane to hire AVM Systems to help the A's calculate their players' value.

Derivatives reflect tiny fractions of stocks, which can be bundled together to make, in effect, a new stock, which can be sold on the market. By the same token, Paul DePodesta's baseball statistics reflect tiny fractions of runs, which can be bundled together to analyze a player's overall contribution to the team. By using a derivative approach, Paul reduces the many different baseball statistics to the same common denominator: getting the most runs, and therefore winning the game.

Another lesson that Paul learned from AVM Systems was to minimize the role of luck in calculating a player's value. Traditional baseball statistics assume that all runs are equal—that, regardless of the circumstances, one run represents the same amount of success and talent from the hitter. AVM Systems used statistics to calculate the *expected* outcome of a baseball scenario—how likely, for example, a player was to make a home run, given the inning, the number of people on base, and the record of the opposing team. Paul used AVM's methods to calculate that the cost of trading Johnny Damon and replacing him with another center fielder, Terrence Long, was about fifteen runs per season.

Paul applies derivative methods to the world of baseball by eliminating the role of luck from statistics. Traditional baseball statistics weigh all hits, runs, and bases equally; Paul's modified statistical system, however, weighs runs according to their probability. Notice, also, that Paul calculates the expected value of losing Johnny Damon in terms of runs per season—a reminder that Paul thinks globally, and, unlike a coach, isn't too concerned about the outcomes of specific games.

In short, Paul Depodesta's methods took much of the randomness out of baseball. While statistics couldn't predict exactly what a player would do in the future, it could give a decent estimate of what a player was likely to do, assuming they continued playing with the same ability. Thus, the A's traded Johnny Damon, one of their most popular players, but, contrary to the supposition of the Major League commission, the A's didn't become a worse team. Losing Damon and Isringhausen wasn't a major loss for the A's. However, the loss of their third major player, Jason Giambi, was another story.

Paul's sabermetric methods take some, if not all, of the randomness out of baseball. Paul's methods don't allow him to calculate what will happen in specific games, though they do allow him to predict the A's overall season record with a high degree of accuracy.

CHAPTER 7: GIAMBI'S HOLE

Early in 2002, the Oakland A's were playing the New York Yankees. Before their game, the A's gathered in their tiny clubhouse—surely the "least charming real estate in professional baseball." On the day of the game, Michael Lewis arrived at the Oakland clubhouse and found David Forst, one of Paul DePodesta's assistants, and Dan Feinstein, who prepared videotapes for the A's.

Most of the chapter revolves around a game between the Yankees and the A's at the beginning of the 2002 season. Also, notice that Michael Lewis, in addition to being the author of the book, is something of a character in this chapter: he explores the A's facilities and meets some of the employees in the clubhouse.

From Forst and Feinstein, Lewis learned about Paul's personality. Paul didn't drink, because alcohol killed brain cells. He played football at Harvard, but, unlike his teammates, he graduated with honors in economics. Later, he turned down an offer from the Toronto Blue Jays to become the youngest GM in baseball history. Paul was cautious and rational—he tried not to let greed or passion influence his decisions. The decision Paul was trying to answer at this point in 2002 was: "Why does it matter that we let Jason Giambi leave?"

Paul, unlike Billy isn't temperamental or emotional about baseball. He's intelligent and even nerdy, but he comes from a sports background, which makes it all the more surprising that he can remain so dispassionate about his team's games. It's interesting to contrast Paul's decision to turn down the Blue Jays with Billy's decision to sign with the Mets: the implication would seem to be that Paul is the calmer, more levelheaded of the two men.

Let's return to where we were at the end of the last chapter. Leading up to the 2002 season, the Oakland A's traded away three popular players, including their first baseman, Jason Giambi. Giambi was so talented that the A's couldn't find a good replacement; however, Billy Beane told his employees to focus on "recreating the aggregate" of Giambi, in other words, finding multiple players who had bits and pieces of Giambi's statistical record (his walks, his hits, his **on-base percentage**, etc.). Billy and Paul tried to replace the aggregate on-base percentage of the three players they'd traded, .364, with a comparable figure from three new players. To their surprise, this was fairly easy: Major League Baseball didn't place a lot of stock in on-base percentage, at least not in 2002.

The beauty of Paul's statistical methods is that they allow him to replace individual athletes, such as Jason Giambi, with multiple athletes who, when put together, recreate the original athlete's aggregate performance. Thus, like a Wall Street trader assembling derivatives, Paul assembles bits and pieces of Giambi's statistical record until, for all intents and purposes, he's recreated Giambi. From a fan's perspective, Paul's approach may be surprising or even shocking, since part of the charm of baseball is that the most talented athletes aren't *replaceable—they're not just numbers who can be replicated with a few computer clicks.*

The game between the Yankees and the Oakland A's begins. Jeremy Giambi—Jason Giambi's younger brother, who has played on the team for two years but given a bigger role to help replace his departed brother—stands in the outfield. A Yankee hits the ball toward him, and Jeremy runs after it, embarrassingly slowly. Paul watches the game on a TV screen, emotionless.

Paul isn't emotionally invested in individual baseball games: his only concern is how the A's perform over the course of the entire season. Thus, he's not concerned or embarrassed when Jeremy Giambi performs badly.

The inning proceeds, and Jason Giambi, now a Yankee, steps up to plate. Oakland fans wave signs saying "Sellout," expressing their fury that Giambi left Oakland. Giambi, a seventeen million-dollar-a-year hitter, stands against Oakland's 237,500 dollar-a-year pitcher, Eric Hiljus. As Paul watches Hiljus, he notes that Hiljus isn't pitching well. He doesn't throw to the inside part of the plate, for fear that Giambi will be able to return the ball; instead, he throws to the center or the outside of the plate. Giambi hits the ball, and drives one of his teammates to home base. The Yankees hit four more runs.

It's somewhat amusing that the fans criticize Giambi for being a sellout when, as we've already seen many times, Major League Baseball is all about the money: the goal of a team is to maximize profits by assembling the most economically efficient team possible. Lewis makes Hiljus's pitching seem sloppy and uncontrolled, reflecting the overall incompetence of the A's team tonight.

It's Oakland's turn to bat. Paul has kept a list of the probability that each hitter will hit at a ball outside the strike zone—a very bad move. Interestingly, the new players on the Oakland A's are more disciplined than the returning players—they don't give in to the temptation to hit a bad ball. The Yankee pitcher pitches efficiently, instead of wearing himself out at the beginning of the game, as Eric Hiljus has done.

One of the marks of a good player, in Paul's estimation, is that they don't hit at bad pitches. In other words, good hitters have to be disciplined, not just strong and fast. However, the passage suggests that most A's hitters take irrational risks and swing at bad balls.

Michael Lewis watches David Justice hit for the A's. Justice is talented, with more postseason hits than any player in history. At thirty-six, though, he's past his prime, which is why the A's were able to acquire him in a trade at the end of 2001. However, Justice is excellent at walks: he's patient, and he doesn't swing at bad pitches. Justice has no idea that Paul wanted him for the A's because of his walk ability—"at no points were the lab rats informed of the details of the experiment." The A's score at the bottom of the third, bringing the score to 5-1.

Justice is representative of the A's new management strategy. To the public, Justice is past his prime, but to Paul, Justice is a prized player, since he's good at getting walks. Walks aren't usually considered a sign of a talented player, but Paul sees them as an important part of moving the game forward and scoring more runs. It's crucial to notice that even Justice himself doesn't realize why the A's acquired him—perhaps Paul is concerned that, if Justice found out he'd been recruited for his walks, he'd change his game.

Michael Lewis goes to talk to Billy Beane, who's in the weight room. As he walks over, he realizes that Billy spends much more time with his players than the GMs of high-profile teams. In short, Billy "runs the whole show" in a way that most GMs never do. He communicates constantly with his Big-League manager, Art Howe, giving him specific instructions about how to control the players and plan out the game. Some players dislike Billy's propensity for micromanaging, but others think that he's making the team considerably better by doing so.

Billy Beane opts for an unusually personal style of management: he controls the manager of his big-league team, and he spends a lot of time with the players, perhaps reflecting his personal experience with pro ball. One reason why sabermetrics hasn't caught on in 2002 is that, in the past, GMs of the A's who favored a sabermetric approach left matters to their subordinates. Billy has the knowledge but also the managing style necessary to make sabermetrics an important part of the A's team.

In the fourth inning, Michael Lewis finds Billy Beane, who, as usual, has been tuning in to the game in brief, nervous snatches. To distract himself, Billy makes small-talk with Michael about the Bastille in France. Abruptly, he walks away, and drives home. Meanwhile, the A's get up to bat. Miguel Tejada, a hitter for the A's, gets a run and brings the score up to 5-3. Two innings later, David Justice gets a walk, and then runs to home, bringing the score to 5-4. Later, Jeremy Giambi gets another walk, and then brings the score to 5-5. The crowd goes wild: they can sense that David is matching Goliath.

You can tell a lot about Billy Beane's personality from the way he listens to A's games. Although Major League Baseball rules forbid him from being on the field during team play, Billy listens to the game over the radio, but only a few seconds at a time. It's as if Billy can't bear to listen to the game, but can't bear not to listen, either, stressing his conflicted relationship with the sport. Meanwhile, the A's recover from their earlier setbacks, proving that the Yankees' massive economic advantage doesn't necessarily give them a massive advantage on the field.

The Yankees are up to bat, and Michael Lewis goes back to watch the game on TV with Paul. The A's pitcher, Jim Mecir, limps up to the pitcher's mound, and Paul explains that Mecir has a clubfoot. Strangely, Mecir's foot gives his pitch a ruthless efficiency against left-handed hitters. With five pitches, he stops Jason Giambi from getting a hit. However, the umpire calls his last pitch (which was clearly on the inside corner of the plate) a ball. Even Paul becomes angry with this bad call. On his next pitch, Giambi gets a hit, and ends up scoring two runs. The A's fail to score again, and the Yankees win.

Like many A's big-league ballplayers, Jim Mecir doesn't look like an athlete at all. However, once one gets over popular biases, it becomes clear that he's a formidable pitcher. In the end, however, even Mecir is not match for a bad umpire. The umpire's call is so poor that even the stoic, unflappable Paul becomes furious: a single unlucky call effectively loses the game for the A's, suggesting that sabermetrics can't entirely remove random chance from the equation, at least not for individual games.

After the game, Scott Hatteberg walks into the clubhouse and asks to see the videotape of the game. Hatteberg is the third "defective part" Paul assembled to replace Jason Giambi—he can't throw, which made him very cheap, but he had discipline at the plate and could always get on base. Hatteberg was, in short, a testament to the short-sightedness of Major League Baseball: a useful, unglamorous, undervalued player. Paul's only question was where to put Hatteberg—in order to qualify as a designated hitter, what position should he play in the field?

In the following chapter, Lewis will discuss the strange career of Scott Hatteberg. For now, however, he emphasizes Hatteberg's unlikely talents—in particular, his ability to get on base, no matter how ungracefully.

CHAPTER 8: SCOTT HATTEBERG, PICKIN' MACHINE

The catcher Scott Hatteberg's "right hand still felt like it belonged to someone else." After a bad accident, he could still play baseball, but his manager and GM thought that his value had gone down a lot: there was no use in employing a catcher who couldn't throw well. After playing in the Red Sox, Hatteberg was traded to the Colorado Rockies, who offered him a mere half a million dollars a year, a fifty percent cut from his Red Sox salary, and granted him free agency (i.e., the ability to sign with another team). Then, to his surprise, the Oakland A's offered him a one-year contract, and, after he signed it, began using him as a first baseman. Hatteberg was so confused that he asked his wife to help him practice his new position.

In large part, Chapter Eight is narrated from the perspective of Scott Hatteberg, one of the most unlikely stars of the A's, Hatteberg has suffered a serious accident, and, as a result, his salary is cut back, since his GMs assume that he's worn out most of his use. The A's, on the other hand, think that Hatteberg is still enormously useful as a hitter—thus, they play him as a first baseman so that he'll be able to hit, too. Hatteberg is amazed, since he's never played first base.

With the Oakland A's, Hatteberg worked with the infield coach, Ron Washington. Washington spent six weeks practicing with Hatteberg in Arizona and he didn't tell Hatteberg, who needed a lot of work, how much derision he'd receive. His goal was to boost Hatteberg's confidence.

Washington's goal is to boost Hatteberg's confidence to the point where he'll at least be a competent first baseman, and thus he'll be able to hit for the Oakland A's. (Note that, as with other A's players, Hatteberg has no idea that the A's want him primarily for his hitting.)

As the A's proceeded with the season, they seemed to get worse. In May, they lost to the Toronto Blue Jays, one of the worst teams in the league. In response, Billy Beane sent the big league's starting first baseman, starting second baseman, and starting pitcher back to the minor leagues. Beane also traded Jeremy Giambi for a lackluster player, John Mabry. Afterwards, Scott Hatteberg became the starting first baseman for the A's. He struggled with his new position; slowly, however, he became more comfortable, thanks to Washington's encouragement. Hatteberg enjoyed talking to opposing players on first base—this helped him relax and enjoy himself.

Although sabermetrics can engineer a seemingly formidable team, the team isn't invincible. Thus, Billy is forced to trade many of his players halfway through the season. However, as the season goes on, Hatteberg becomes a more confident player. One again, Lewis suggests that focus and optimism are almost as important for athletic success as physical ability.

What Hatteberg didn't realize was that he'd only been acquired by the Oakland A's because of his consistent hitting—the fact that he got used to his position as a first baseman was just a bonus. With the Red Sox, he got on base about twenty-five percent more often than the average player. He was also good at wearing out pitchers and avoiding strikeouts. Paul realized that the ideal hitter didn't strike out, but also didn't adjust his hitting style simply to avoid striking out. Most importantly, Paul realized, Hatteberg seemed to have no "hole" as a hitter—i.e., no area to which the pitcher could throw without Hatteberg being able to return the ball.

Hatteberg is another representative example of the sabermetric approach to baseball: although he isn't much of a power hitter, he's an extremely disciplined batter who never swings at bad balls. Hatteberg's greatest asset is that he has no "hole"—in other words, it's virtually impossible for the pitcher to throw something over the plate that Hatteberg's can't return. In all, Hatteberg is a strategic, consistent hitter—precisely what Paul wants for the A's.

Hatteberg had always had an odd career as a ballplayer. He'd been underweight throughout high school, even though he was talented. He could always hit the ball, but he wasn't a power hitter. He turned down a major league contract straight out of high school, but eventually signed with the Red Sox in 1991. There, Hatteberg learned the importance of keeping records of his batting in order to predict how the pitcher would throw.

In many ways, Hatteberg is the opposite of Billy Beane. Unlike Billy, he doesn't accept a contract to play straight of high school, which suggests that he's more psychologically disciplined than Billy was. With his extra years of college play, Hatteberg learns how to play strategically, sizing up pitchers and tailoring his hits accordingly.

In 1996, Hatteberg was in the big leagues for good; however, on the hyper-macho Red Sox, his greatest assets as a hitter (his caution, his consistency) were seen as liabilities. Some of his teammates regarded him as selfish or cowardly for taking so many walks. The Red Sox ignored Hatteberg's knack for scoping out the strike zone and tailoring his swing to fit it. When Hatteberg arrived in Oakland, it was the first time in his career that his coaches admired his calm, intelligent approach to the game.

Even though Hatteberg's slow, strategic approach to hitting was a major asset to his team, his teammates mocked and ridiculed him for never taking risks with his hits. On the Oakland A's, Hatteberg's caution and maturity were prized assets, which the coaches tried to encourage in Hatteberg and in other players.

One day in 2002, in the middle of a game with the Seattle Mariners, Hatteberg sits in the video room with Dan Feinstein, studying live footage of the game. Hatteberg notices footage of Jamie Moyer, the Mariners' popular pitcher, throwing to the A's hitters. He notes that Moyer, in spite of his popularity, isn't particularly strong or fast—if he weren't already on a team, he couldn't even get drafted. However, Moyer makes up for his slow balls by pitching to his opponents' weaknesses.

Just as Hatteberg's strength as a hitter stems in large part from his strategic thinking and careful observations, Moyer's strength as a pitcher stems largely from his intelligence and strategy, rather than his speed.

John Mabry walks into the room, and Hatteberg greets him. Michael Lewis notes that, for a nice stretch after the A's acquired him, Mabry was batting .400. Nevertheless, Billy Beane refused to put Mabry in the regular lineup. Billy didn't like that Mabry was needlessly aggressive with his hitting—he used Mabry in some games, but didn't want to make him a full team member.

John Mabry represents the old style of hitting: aggressive, reckless, and imprecise. Billy Beane, who epitomized this style, has no patience for athletes like John, and consequently declines to include him in the lineup.

Mabry and Hatteberg watch the footage of Moyer, and agree that Moyer can't throw fast but knows how to defeat hitters with shrewd, unpredictable strategy. Hatteberg notes that, in some ways, the best hitters are the stupidest, because they have no pattern to their swings—they "can't even remember their last at bat."

Moyer is a successful pitcher in part because he's intelligent and knows how to read his opponents. However, as Hatteberg points out, there's no correlation between intelligence and success in baseball—sometimes (though not always), the most successful players are unintelligent, and therefore have no problem focusing on the game.

Hatteberg goes out to hit against Moyer; in the end, he gets the only run of the game. In Hatteberg's fourth at bat against Moyer, Moyer throws two strikes, then gets two balls. Moyer walks off the mound and tells Hatteberg, "Just tell me what you want and I'll throw it." On his next pitch, Moyer throws a change-up, but Hatteberg succeeds in hitting it. The hit ends up being an out. And yet this out is one of the most impressive hits in the entire game: Hatteberg quietly adapts to the pitcher's strategy.

This short passage represents the kind of performance that traditional baseball statistics ignore, but which Paul, and Michael Lewis himself, celebrate. Hatteberg adjusts to Moyer's pitch in a tiny fraction of a second, and manages to return the ball. Even though he gets out, his hit represents his agility as a hitter, which serves him well throughout his career.

Hatteberg finishes the season ranked first in the American League for not swinging at first pitches. This statistic may seem trivial, but it's very important, because it reflects his self-control. Paul estimates that, in theory, if Hatteberg were the only batter for the Oakland A's in 2002, he'd have scored 950 home runs—by contrast, the 2002 Yankees only scored 897. Hatteberg is the most consist player in major-league baseball, and, in some ways, the best offense.

Hatteberg isn't a power hitter, meaning that he's rarely thought of as one of the greatest hitters in the league. And yet, by any good mathematical measure, he is a phenomenal. It's just that, unlike a lot of so-called great hitters, he exercises caution at bat, and uses walks to his advantage instead of swinging at everything.

CHAPTER 9: THE TRADING DESK

It is late July 2002, and Mike Magnante has "picked a bad time to pitch poorly." In a game between Oakland and Cleveland, Magnante has walked too many players and thrown too many balls. The reason Magnante was playing at all was that Art Howe, the team manager, brought him in—supposedly because he though Magnante, a left-handed pitcher, would be better against left-handed hitters on the Cleveland team. This is absurd, since Cleveland's left-handed hitters have a good record against lefty pitchers. Mike Magnante is thirty-seven and pear-shaped and hasn't seen a lot of play this season. On July 29, he gives up five runs with no outs: the game is effectively over.

The chapter begins with a textbook example of bad management. Instead of listening to the statistics (i.e., that, generally speaking, the Cleveland Indians do well against lefties), Art Howe has made a reckless, intuitive decision to put Magnante into the game; as a result, the A's are losing. Had Howe opted for a more dispassionate, statistical approach to his job, the A's might have won the game.

That evening, Billy Beane waits for a call from Mark Shapiro, the GM of the Cleveland Indians. He's going to pursue a trade with the Indians, and the trading deadline is July 30. One of the Oakland A's biggest assets has been their ability to get better after the middle of the season—in no small part because Billy Beane is so talented at making good trades. Billy has a few simple rules for making trades, including knowing exactly what each player is worth, in dollars, and being extremely persistent. Billy's weakness as a trader is that he sometimes allows newspapers to influence his decisions instead of paying attention to the numbers.

Billy Beane is a talented GM, and, as we'll see, this means being able to negotiate clever trades with other teams. Beane is, in effect, a Wall Street trader who knows how to pitch experts in his field in mere seconds. However, Billy can be reckless with his trades, since he lets media pressure influence his decisions (not unlike how he let coaches' pressure influence his playing in the eighties).

Billy Beane wants to get rid of Mike Magnante and acquire a talented player named Ricardo Rincon from Cleveland, but he doesn't want to pay the rest of Rincon's salary. He decides that, instead of Mike Magnante he'll auction Mike Venafro, another pitcher, to rival teams that might be interested in Rincon. Billy calls the Giants' GM and offers him Venafro in return for a minor league player. Immediately after, he calls Mark Shapiro and tells him, "the market for Rincon is softening." A few minutes later, Shapiro calls back and explains that the other GM who's interested in Rincon has called with a lower offer: Billy makes a trade with Shapiro to acquire Rincon, just as he'd planned. The last step is to sell Mike Venafro to another team—he calls the Mets, asking them about trading someone for Venafro. Paul, listening to Billy's phone call, quickly compiles a list of potential Mets players that the A's would be interested in acquiring.

In trading, Beane is at a huge disadvantage, since the Oakland A's don't have much money. This means that, in effect, he must not only negotiate to acquire good players, but also to avoid paying those players' full salaries. In this passage, Beane skillfully manipulates the Giants into backing away from their own bid for Ricardo Rincon, thereby convincing Shapiro that the A's would be the best, most reliable buyer for Rincon. The passage also shows how Paul and Billy work together on trades: even if Paul lacks Billy's charisma and negotiating savvy, he knows how to work quickly under pressure.

After fifteen minutes of conferring with Paul, Billy calls Steve Phillips, the GM of the Mets, and asks him for 233,000 dollars and one of two players. The Mets GM begins nitpicking and negotiating with Billy's offer, and Billy quickly realizes that Phillips is doing so because he thinks that he's going to get Rincon. Billy tersely tells Phillips that the A's will be taking Rincon, and instructs him to think of a player to trade, quickly.

After many years as GM of the Oakland A's Billy knows how to read other GMs over the phone—here, he quickly deduces that the Mets are trying to stall in order to steal Ricardo Rincon from him.

Billy hangs up the phone, and his assistant tells him that Pete Gammons, a reporter from ESPN, is calling. Ordinarily, Billy wouldn't take a call at such a tense moment, but Gammons sometimes has useful information. Billy tells Gammons, "I'm finishing up Rincon," in the hopes that Gammons will spread the world that Rincon is taken (even though the deal isn't complete). In return, Gammons tells Billy that the Montreal Expos are trading a hitter, Cliff Floyd, to the Red Sox. Billy is disappointed to hear this, since he was hoping to get Floyd for himself.

Billy knows how to use all the tools at his disposal; thus, he consults with Pete Gammons, a highly informed ESPN journalist. One reason Billy does so in the middle of a tense negotiation is that he wants Gammon to pass on word that Rincon is taken, which discourages other teams from trying to poach Rincon, as the Mets were just trying to do.

Billy can be brutal with his managing. For instance, only a few months after acquiring Jeremy Giambi and holding him up as Exhibit A for the Oakland A's new winning strategy, Billy traded Jeremy for John Mabry, a decision that many, even Paul, thought was irrational. However, Jeremy's play was inconsistent, and, more importantly, he had problems with drinking and drug use. After losing Jeremy and acquiring Mabry, the Oakland A's began to win—after two months with Mabry, they were 60-46. Now, people said that Billy had been a genius for trading Jeremy for Mabry.

A couple things to notice here. First, Billy seems not to think twice about firing Jeremy Giambi: he's having drug problems. Jeremy's dismissal reminds us that no amount of statistics can predict the future. Even if, mathematically speaking, Jeremy is likely to have a good season, he can still go off the deep end. Second, notice that Billy accidentally gets a great hitter in Mabry, someone who Billy was initially reluctant about including in the lineup at all. Even on a team that practices sabermetrics, there are plenty of accidents, lucky and unlucky.

Early in July, Billy made another set of trades. Recognizing that one of the stars of the Oakland A's, Carlos Pena, was overvalued, Billy used Pena to make trades with the Detroit Tigers and the Yankees; he ended up getting 600,000 dollars, a good, cheap pitcher, and two of the Yankee's best young players. Later in July, Billy used another one of Oakland's popular, overvalued players, Cory Lidle, to make a highly lucrative trade with the White Sox for one of their leadoff hitters, Ray Durham.

Billy feels no more compunction about losing Pena than felt about losing Jeremy Giambi: the trade is the right economic decision for the Oakland A's. Part of being a GM, Lewis implies, is being able to suspend one's guilt and loyalty in the interest of the franchise. Furthermore, Billy excels as a GM partly because he's good at pumping up his players' value on the market and then selling them off.

While he's been talking to Gammons, Billy misses a call from the Montreal Expos GM, Omar Minaya, the man "who controls the fate of Cliff Floyd." Minaya explains that Floyd is passionately opposed to going to Oakland, since he's heard that Oakland is a poor franchise and won't be able to pay him much. Billy questions Minaya's decision to trade Floyd to the Red Sox. Quickly and expertly, Billy creates uncertainty in Minaya, and then, very innocently, asks, "If you're going to send Floyd to Boston, why don't you send him through me?"

In this scene, we see Billy Beane at his absolute best: calm, levelheaded, but also slick and persuasive. From our perspective, it's clear that Billy is trying to use Omar Minaya's lack of confidence to his own advantage.

Billy suggests that Minaya send Cliff Floyd to him "for a few minutes, and let Billy negotiate with the Red Sox." Billy promises that he'll do a better job of selling Floyd to the Red Sox than Minaya ever could—in return, Billy will pocket some of the extra cash he draws from the Red Sox, and allow Minaya to have one of Oakland's minor leaguers. Minaya finds Billy's offer hard to follow. Calmly, Billy suggests that Minaya tell the Red Sox that he (Minaya) wants another player, Kevin Youkilis (a player who Billy wants, but who Minaya has never heard of). Minaya is skeptical—why should he jeopardize his deal with the Red Sox by asking for another player? However, Billy convinces Minaya that the Red Sox are desperate enough for Floyd that they'd gladly sacrifice another player, especially one as inconsequential as Youkilis. What Billy doesn't know, however, is that the new management for the Red Sox has recognized Youkilis's talent, following Billy's approach, and intends to keep him.

In effect, Billy wants to act as a middleman for Minaya's trade with the Red Sox, and then charge Minaya a "transaction fee" for his services. Cleverly, Billy tries to be persuasive, but also not too clear, when explaining things to Minaya: if he explains himself too clearly, than Minaya himself could just do what Billy describes and keep his money. Gradually, we realize what it is Billy really wants: Kevin Youkilis, a talented player that, unbeknownst to Minaya, Billy has been eyeing for a long time. We can guess that, after Minaya is through with his trade with the Red Sox, Billy will find a way to get Youkilis for himself, which, contrary to his casual attitude, is what he wanted all along. The fact that the Red Sox do, in fact, want to keep Youkilis suggests that Billy's sabermetric approach to baseball is slowly catching on with his competitors.

Billy hangs up and realizes that he's spent too much time talking to Omar Minaya—he needs to lock up the Ricardo Rincon trade by raising some cash. He tells Mike Crowley, the president of the A's, that if the A's can't figure out how to unload Mike Venafro, Billy will sell Rincon for twice the price next year. Mike Crowley finds this news baffling—Billy just offered to take an equity stake in one player. Before Crowley can get confirmation from the A's owners, Steve Schott and Ken Hofmann, Billy calls Mark Shapiro and tells him that he's ready to acquire Ricardo Rincon. He tells Paul to tell Mike Magnante that he's off the team, and, in all likelihood, done with the big leagues. Still on the phone with Shapiro, Billy asks Shapiro to send Rincon over to the A's that night, so that Rincon can play in the game against the Indians. Shapiro is surprised, but he agrees.

In the heat of the moment, Billy has no time to get approval for the Rincon trade from his superiors, the owners of the Oakland A's. Furthermore, Billy is forced to lock in the Rincon trade before he's found a way to trade off Venafro—in other words, before he knows how he's going to pay for Rincon. As a result, Billy pledges that, in the event that he doesn't manage to trade off Mike Venafro in the next five minutes (thereby canceling out the financial burden of buying Rincon), he will make up for the net loss to the A's by selling Rincon for double the price next year. This passage might seem a little confusing—and it is: Billy is such a pro that he can keep track of five trades at once.

Shortly afterwards, Ricardo Rincon, who is from Veracruz, Mexico, and doesn't speak fluent English, meets with Billy. Billy tells Rincon that, effective immediately, he's on the A's, and that he'll be playing tonight. Meanwhile, Mike Magnante gets the news that he's leaving the A's, and he takes it quietly. As a younger man he would have been angry, but somehow, in his long career playing pro ball, he's learning to think of himself "the way the market thought of him, as an asset to be bought and sold."

In the blink of an eye, players transfer from one team to another, and, moreover, from one part of the country to another. Billy's actions in the chapter might seem heartless: in one dispassionate phone call, he ends Mike Magnante's baseball career. It's depressing, furthermore, that Mike seems to think of himself a piece of property. After years of being traded from team to team, though, he's been trained to assume as much.

CHAPTER 10: ANATOMY OF AN UNDERVALUED PITCHER

After Ricardo Rincon and Ray Durham move to the A's, the team becomes great. Indeed, the 2002 A's have a better second half of the season than any other team in the baseball history of the last fifty years, with the exception of the 2001 Oakland A's. They set a record for consecutive wins—nineteen—and then beat their own record.

The Oakland A's succeed not only because of Paul's sabermetric approach to hiring talent, but also because of Bill Beane's savvy trades, which we learned about in the previous chapter.

On the night of their twentieth victory, the A's seem undefeatable. Then, unexpectedly, their pitcher, Tim Hudson, starts to give up runs. Art Howe calls in Chad Bradford, who's distinguished himself as one of the best relief pitchers in the major leagues, to replace Hudson. Pitchers, Michael Lewis notes, are the most idiosyncratic baseball players. Like writers, they can have unexpected renaissances late in their careers, or burn out after showing promise. And, again like writers, they set a consistent tone and style for the game overall.

In this chapter, we'll learn about Chad Bradford, whose life is a testament to the power of optimism and persistence in professional sports. Just as some pitchers set the tone for an entire baseball game, Chad Bradford could be said to set the tone for Michael Lewis's book: his unlikely success, despite many disadvantages, symbolizes the success of the Oakland A's in general.

Chad Bradford grew up in Mississippi playing catch with his father. As a child, it was his ambition to play for a big-league team; sure enough, when he was twenty-three, he began playing for the Chicago White Sox.

The first thing we learn about Chad is that he was always ambitious: even as a young boy, he wanted to play major league baseball.

The most amazing thing about Chad's major league career was that, for most of his teenaged life, he wasn't very good. He played on his high school baseball team, but didn't really distinguish himself, and few people thought he had any real talent. One exception was his coach, Bill "Moose" Perry, who encouraged him to pitch unconventionally. Chad wasn't a versatile pitcher, but he learned how to mislead hitters and shut them out. Even after Perry helped him, however, few people, other than Chad himself, thought he'd make it to the major leagues.

The vast majority of professional ballplayers were the stars of their high school baseball teams. Chad, on the other hand, wasn't much of a ballplayer in high school (though, crucially, he learned how to pitch intelligently). Unlike in the case of many professional ballplayers (e.g., Billy Beane), few people told Chad that he was destined for the major leagues—the only person who believed so was Chad himself.

Chad pitched in college, and, much to his amazement, he attracted the attention of a White Sox scout. He was drafted in the thirty-fourth round, and wasn't offered a contract. However, he got to play professional ball for a minor league White Sox affiliate. Chad sensed that the White Sox didn't take him seriously, but during his first year, he perfected his sidearm and became, for the first time in his life, a remarkable pitcher. He was promoted from Double-A to Triple-A, and he distinguished himself on the toughest fields in the division. A few seasons later, he was promoted to the big league, but before he could play, he learned that he'd be going back to Triple-A, supposedly because his pitches "weren't moving like they used to." Chad suspected that he was demoted because he didn't look the part of a big-league athlete, and he may have been right.

Chad's rise from college ball to the White Sox was nothing short of miraculous: he barely made it on to the team, and once he did, he distinguished himself through a combination of hard work and persistence. However, Michael Lewis suggests that Chad's rise was hindered not because of his talent but because of his appearance: he didn't seem like the kind of person who'd play pro ball. Lewis suggests that, at times, baseball coaches hold back their most talented players for the superficial reason that they don't look right. The genius of Billy Beane was that, as GM for the A's, he never made such a mistake.

Unbeknownst to Chad, Paul DePodesta took great interest in his abilities. Anther one of Paul's secret fans was a paralegal named Voros McCracken, who, like Paul, was a fan of Bill James. McCracken realized that Chad was actually one of the most talented ballplayers in the sport. His great insight was that, contrary to popular belief, "pitchers had no control of whether a ball fell for a hit, once it was put into play." Too often, pitchers were credited for tricking hitters to swinging at unhittable balls, or for throwing the ball too fast to be returned. Voros spent years confirming his theory: the number of hits per balls a pitcher throws into play is, by and large, a matter of random chance. McCracken sent his findings to Bill James, who wrote, "I feel stupid for not having realized it thirty years ago." Amazingly, GMs largely ignored McCracken's discovery. One exception was Paul, who realized that the discovery suggested that Chad was undervalued.

As late as the 1990s, baseball fans were still making earth-shattering discoveries about the game. For more than a century, baseball experts had assumed that talented pitchers could strike out hitters by throwing the ball over the plate faster than anyone could return it. McCracken used data analysis to prove that, in fact, pitchers didn't strike out hitters primarily because they pitched fast, but rather because they used their intelligence and intuition to decide whether to throw the ball in or out of the strike zone. The implications of McCracken's discovery were staggering: previously, coaches had valued pitchers who could throw 90-mph fastballs, but now, it was becoming clear that the difference between 80 and 90 mph was far less important than the difference between a pitcher who could throw intelligently and one who could only throw fast.

When Paul applied McCracken's findings to Chad Bradford's career, he realized why scouts didn't like Chad. His number of hits per balls in play wasn't impressive, but his other stats were. For instance, he had a phenomenal talent for throwing pitches that hitters could only return as ground balls, which rarely led to doubles, triples, or home runs. Chad was, furthermore, the rare ground ball pitcher who could strike out lots of hitters. Finally, Chad was a "funny-looking," amateurish-seeming athlete, and therefore not someone the scouts loved to watch.

Other GMs ignore Chad because they only pay attention to a small handful of statistics. The reality is that Chad is one of the most talented pitchers in the league, but one needs special statistics to understand why. Before Paul and Billy's tenure at the Oakland A's, most GMs ignored complicated statistics and relied on their superficial impressions of athletes—bad news for Chad, since, superficially, he doesn't look like an athlete at all.

In 2000, Billy Beane, acting on Paul's advice, called the GM of the White Sox and asked him about trading one of the White Sox's lesser pitchers. Billy waited for the GM to bring up Chad Bradford's name; in response, Billy just said, "He'll do."

One of Billy's greatest talents is for hiding how badly he wants certain players. Billy clearly wants Chad's talent, but, hilariously, he pretends that he's more or less indifferent to who he gets.

CHAPTER 11: THE HUMAN ELEMENT

In a night in September 2002, Oakland A's fans were salivating to watch their favorite team win its twentieth straight game. Reporters from CNN, ESPN, and other channels wanted to interview Billy Beane about how he'd put together a record-setting team. Billy was reluctant to handle so much publicity but he did so nonetheless. Afterwards, as usual, he holed up in the weight room, furtively listening to the game on his radio—at one point, the A's were up 11-0.

We're back in Oakland on the night of the team's twentieth consecutive victory. Billy Beane has never been comfortable with publicity—even when he was an athlete, he couldn't deal with the pressure from his fans and coaches. However, he talks to reporters because it's for the good of the team.

Michael Lewis talks with Billy Beane in the middle of the game. Billy talks about how his shortstop, Eric Chavez, is probably the most gifted player in baseball—statistically, he outstrips many more famous athletes. As Billy talks, Lewis considers some of the contradictions in his management style. Billy is scientific. He often says that managing a baseball team is like a soapbox derby: "You build the car in the beginning of the year and after that all you do is push it down the hill." And yet, there's a side to Billy's personality that is superstitious and deeply invested in the game. Another contradiction in Billy's personality: he always says that "players don't change," and yet he spends untold hours trying to change his players' game for the better.

Billy is arguably the most interesting character in the book, because he exemplifies some of the contradictions in baseball management in the early 2000s. Billy is a pioneer of sabermetric management; instead of using intuition to draft and acquire players, he pays attention to statistics. One would think that sabermetrics takes all the emotion and uncertainty out of baseball, but, Billy is clearly not an emotionless GM—on the contrary, he sometimes gets furious while watching baseball. In a way, Billy's contradictions exemplify the contradiction between determinism (i.e., using sabermetrics) and free will (i.e., becoming emotionally invested in specific games).

In the middle of the game, Chad Bradford replaces Tim Hudson as pitcher. Chad has been having a slump, perhaps because he's begun to experience a crisis in self-confidence—even though he's become one of the best pitchers in the league, he questions his own talent. He walks hitters, sometimes two in a row. Soon, the bases are loaded, with nobody out. Quickly, the score becomes 11-6, 11-7. Disgusted, Billy mutters, "what a fucking embarrassment."

Even though Chad's greatest asset is his self-confidence, he seems to have trouble adjusting to the pressures of playing with the Oakland A's. One of the premises of sabermetrics is that an athlete will continue playing in a matter that reflects his statistical record. However, as Chad's poor performance shows, sometimes athletes go through unexpected slumps that statistics cannot predict.

Back in the eighties, Bill James argued that psychology always pulls winners down and builds the losers up. Here, tonight, the Oakland A's, the heavy favorites, are getting pulled down by the audience's expectations. The score is now 11-10; a few minutes later, at the bottom of the ninth, it's 11-11. Art Howe puts Scott Hatteberg in the game as a pinch-hitter. Hatteberg, disciplined as ever, tells himself he won't swing at anything down low in the strike zone until he has two strikes. After laying off the first pitch and getting ball, the second pitch comes in high, right where Hatteberg is looking for it. Hatteberg hits the ball into the stands—then, as if in disbelief, he runs around the bases. "Not five minutes later," Michael Lewis concludes, "Billy Beane was able to look me in the eye and say that it was just another win."

In this heart-stopping conclusion, the A's narrowly win their twentieth game in a row, setting a new Major League Baseball record for consecutive wins. The reason the A's win, in brief, is that they've assembled a disciplined and quietly successful team, exemplified by the hitting style of Scott Hatteberg. Billy's reaction reminds us of some of his contradictions as a general manager: he's emotionally invested in the game, but likes to pretend that he's not. The passage also implicitly rebuts the many critics of sabermetrics who say that it takes all the uncertainty and excitement out of the game: on the contrary, Lewis shows, sabermetrics leads to some very exciting games, especially when the two teams have such different management styles.

CHAPTER 12: THE SPEED OF AN IDEA

The Oakland A's approach the **2002 playoffs**. In their penultimate game of the regular season, they face the Texas Rangers. Billy Beane and his staff discuss how they're going to have to lose Ray Durham next year—after a great season with the A's, he's become too popular, meaning that Billy won't be able to save any money by keeping him around. During the 2002 season, Durham's coaches have forced him to stop trying to steal so many bases—his greatest asset, they recognize, is that he can almost always get on base, not that he can steal bases. In three weeks or so, however, Durham will become a "free agent," meaning that he'll be able to command millions of dollars from a much wealthier team.

In Chapter Twelve, Lewis brings the book to an anticlimactic conclusion. Even though the A's have assembled an incredible team, they're still not rich enough to keep their star players for more than a few seasons: once the word is out that their players are secretly great, the players can start to demand massive salaries. Assembling a team for Oakland is a constant process for Billy Beane, one for which there is no finish line. The more Billy succeeds in assembling a good team, the harder he'll have to try to replace it next year.

The regular season ends and the A's have own their division and made the **playoffs**. Two important things happen. First, Art Howe holds a meeting with the press in which he criticizes Billy for not giving him a long-term contract. Second, fans, GMs, managers, coaches, and players begin to wonder if Billy's success has been mostly luck. They criticize the A's for playing cautiously and not stealing more bases. Such criticisms, Lewis argues, are absurd—the A's record in 2002 is anything but luck. They've gone 103-59, on a payroll of 41 million, ahead of far richer franchises. Baseball celebrities tell the press that Oakland's success is a fluke. The famous former second baseman, Joe Morgan, claims, illogically, that the A's hitters need to "manufacture runs" by stealing bases and bunting, instead of waiting for a home run to send them all home. Unbeknownst to Morgan, while he was giving this lecture, the Oakland A's were "walking and swatting their way to a win" against the Minnesota Twins in the **playoffs**.

Art Howe has no particular loyalty to Billy Beane: his priority is getting the most lucrative contract for himself. The aftermath of the A's record-setting year in 2002 illustrates the conservatism of baseball. The conventional wisdom that big teams win because they buy the best players proves so strong that, even after the A's prove the conventional wisdom wildly incorrect, the entire baseball establishment comes together to claim, illogically, that the A's have been lucky. Michael Lewis conveys the foolishness of such a claim by juxtaposing Morgan's criticisms of the A's with the A's success against the Minnesota Twins—Morgan can talk all he wants, but the A's record speaks for itself.

The A's and Twins each win two of the first four games of their playoff series. Then the Twins win the deciding fifth game, and the A's are out of the playoffs. Baseball professionals treat their loss as proof that their strategy didn't work in the long-run. But the A's didn't lose because they failed to "manufacture runs." Indeed, they scored more runs in their playoff games than they did in their regular season games. The problem with the playoff system in baseball, Michael Lewis argues, is that it's a "crapshoot." Statistically, in a five-game playoff, the worst team in baseball will defeat the best team about fifteen percent of the time.

The anticlimactic ending to the A's 2002 season—and the book itself—is that the A's lose against the Minnesota Twins, a far worse team. However, the A's don't lose for the shallow reasons that Joe Morgan lists; they lose because, although sabermetrics can predict the overall outcome of a season, it can't predict the outcome of individual games. There is always a strong element of uncertainty in baseball.

Billy said, "My shit doesn't work in the **playoffs**. My job is to get us to the playoffs. What happens after that is fucking luck." In spite of his seeming indifference, Billy was clearly upset by his team's loss to the obviously inferior Twins. Then, he had the idea to trade Art Howe to another team; in the end, Art signed a two million-dollar contract with the Mets, and Billy promoted his bench coach, Ken Macha, to manage the A's. Afterwards, Billy realized that, of all the people involved with the A's, he was the most undervalued. He decided to trade himself.

Billy's reaction to the A's defeat in the playoffs exemplifies his conflicted attitude toward baseball. Clearly, he's emotionally invested in his team's success, even if he pretends to be indifferent. These two sides of Billy's character come into play when he makes the decision to "trade himself" to the Red Sox—a decision that, it would seem, is purely economic.

After the 2002 season, Billy Beane agreed to manage the Red Sox for 12.5 million dollars over five years—the highest sum ever for a GM. Paul DePodesta was set to become the next GM for the A's. As part of the trade for Billy becoming the new GM of the Red Sox, the A's would acquire Kevin Youkilis, the same player that Billy had convinced Omar Minaya to acquire early in 2002.

The book begins and ends with Billy making what, on paper, seem to be perfect deals: first, signing with the Mets, now, signing with the Red Sox as a GM. Note the irony: just as Billy Beane is leaving the Oakland A's, the A's finally get Kevin Youkilis, Billy's favorite player.

Reporters everywhere talked about how Billy Beane was going to become the highest-paid GM in history. Then, suddenly, Billy called the Red Sox and told them he couldn't be their GM. He told them that he'd already made one decision based purely on money—signing with the Mets—and he'd never make that mistake again. Billy gives many reasons for turning down the Red Sox, and none are "terribly rational or 'objective.'" Back with the A's, working alongside Paul, Billy had a new problem: he wanted to prove to the world of baseball that his sabermetric approach worked, and in order to do so, he had to win a World Series. However, Michael Lewis disagrees—Billy had already changed baseball forever.

Notice that Michael Lewis never explains why, exactly, Billy turns down the Red Sox GM position, other than because he's afraid of accepting a job purely for the money. Thus, it's unclear if Billy is motivated by his friendship with Paul, his love for the A's, his loyalty to his colleagues, or his distaste for rich franchises. But far more important than the specific reason for Billy's decision is the fact that he's making an irrational, un-economical decision. Even though Billy is credited with monetizing the game of baseball with a never before seen level of efficiency, Billy himself seems not to base his own personal decisions on economics.

EPILOGUE: THE BADGER

It's early October 2002, and Jeremy Brown steps into the batter's box. Not too long ago, he was the laughingstock of baseball—a fat, unimpressive-looking athlete who somehow became a first round draft pick. Soon afterwards, he gets the news that he and his teammate Nick Swisher are being sent to Single-A ball in California. In Single-A, Brown distinguishes himself with his high batting average, slugging percentage, and, most importantly, **on-base percentage**. Unlike most other players from the 2002 draft, Brown was invited to the 2003 big league spring training camp, and by this time journalists weren't making fun of him anymore.

The book ends with a reminder of how greatly Billy and Paul have changed the game of baseball. In earlier decades, Jeremy Brown would never have been drafted into Major League Baseball. However, thanks to the insight of sabermetrics, Jeremy is on the Single-A team in California. He quickly distinguishes himself, showing that Billy's sabermetric strategy is already paying off. Furthermore, the fact that the journalists are no longer laughing at him suggests that his success has caused people to rethink the game of baseball.

On that day in October 2002, Brown steps up to the plate in the bottom of the second inning. On the fourth pitch, he hits a hard line drive into the left center field. Believing that the ball is going to hit the wall and then bounce back into the field, he runs over the bases, thinking he'll get a triple. Then, embarrassingly, he slips on first base and falls into the dirt, "like Charlie Brown." Brown looks up to see the other players, including his own teammates, laughing at him. Then he realizes what's actually happened: "The triple of Jeremy Brown's imagination, in reality, is a home run."

Jeremy may not be the most conventionally talented player; indeed, he's pretty clumsy in some ways. Clumsy or not, however, Jeremy is a successful player. His success proves that GMs can produce successful, record-setting teams by ignoring conventional baseball wisdom and trusting the numbers. While some might criticize this sabermetric approach to baseball management as overly rational, or even dehumanizing, Michael Lewis has shown that sabermetric management can create baseball games that are as exciting and surprising as any in the history of the sport. And yet, at the same time, Brown's homer that he thought was going to be a triple speaks to the inherent luck built into baseball, and the fact that even those who find success over the long term by minimizing luck as much as possible, are still in the short term subject to its whims.

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