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How Analytics, Big Data, and Technology Have Impacted Basketball's Quest to Maximize Efficiency and Optimization

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Thank you to my actual Vassar family; always being there when I need them for support, to celebrate, to elaborate, or to complain about the problems I was going through and enduring while writing this behemoth of a project. This project tested my temper, and since my housemates and I do everything together, I tested theirs. I owe them a thank you and it is finally time to celebrate the finality of my thesis – with a trip to Cancun. Thank you to my housemates: Luka Ladan, Curtis Smith, Alex Snyder, and Andrew Adkins. In addition, other extremely close friends worthy of recognition include: Erikson Wasyl, Johnny Mrlik, Connor Cucalón and Nick Johnson. Friendships last forever and are unconditional and these guys have helped make my entire Vassar experience worthwhile and memorable.

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Basketball has intrigued me from onset because it is the consummate team game: teamwork, selflessness, camaraderie trump selfishness and individual play. That is an axiom that has been taught to me by my father from as early as I can remember. I have had an endearing passion for the game of basketball since as long as I can remember. This passion can be traced back to my dad. He used to always take me to his “Friday Night Hoops” pickup runs at Heim Middle School. Basketball memories with him are some of my fondest; in fact, sports have been the spine of our relationship. And I don’t say that lightly because I have a wonderful relationship with my father.

This project gave me a special opportunity to meet, connect, and talk to many people related with and in the game of basketball. And for that, I am forever grateful. Zach Lowe, Phil Jackson, Charley Rosen, and Mark Cuban. I interacted with all of them in some way, shape, or form, and would not have been able to do so without this project.

“Thesis Work” ... My answer to every request to hang out, play video games, travel or whatever else we wanted to do over winter break. Well here it is. This is for all you guys to read, consume, critique, engage in, and (hopefully) mostly enjoy. This is my end result. My thesis. And I could not be prouder and happier.

Abstract:

This work looks at the NBA's increasing reliance on numbers. Big data and analytics have changed basketball. The game has become increasingly rationalized. Every aspect of the game is either quantifiable or someone somewhere is working to quantify it. These calculations, numbers, and analytics have changed how the game is played.

Broken up by chapter, with an introduction and conclusion and four body paragraphs, my work looks at the continual quest to better the game. Roster construction, game-pay and strategy, media coverage and reporting, and fans make up the four body chapters. Each chapter was created as a separate entity, interconnected through underlying themes and concepts, but covering a vast array of topics.

Maximizing optimization and efficiency is the implied theme throughout my work. Basketball teams are designed to win games; maximizing optimization and efficiency unequivocally help in that regard.

Chapter One: Introduction

The nature and make-up of professional basketball has changed with the rise of the Internet, the increasing reliance on technology, and the new emphasis on big data all in a search to maximize optimization and efficiencies. From the way fans consume media, to on-court game-play and strategy, to coverage of the game, basketball has evolved. Professional sports are not unlike other aspects of society: as times progresses and technologies develop, change ensues. Technology and big data have impacted professional basketball, particularly in the twenty-first century – The Information Age, in its never-ending quest for rationalization in the game of basketball.

The game of basketball, the National Basketball Association itself, is an institution. Basketball is a team game, not an individual one. Institutions provide various structures or mechanisms of social order, governing behavior within given communities (teams).¹ Within this basketball institution lies a group of interconnected elements formed by communal interactions, an ecosystem. A thorough examination of the ecosystem of basketball's institution shows structural change. Now, the basketball institution seems more invested in reflecting society's advances, technological innovations, and being open to new ideas. It wasn't always that way, as change in the ecosystem of basketball coincided with the advent of the Internet. While the ecosystem is always changing, it changed drastically with the guiding force of the Internet. The game became globalized. Loyal and passionate fans arose from all over the world. Basketball was not the only interest, hobby, or

¹ Dictionary.com. Accessed December 26, 2014.

form of entertainment that became consumed differently with the Internet.

Shopping, media, stock market, and travel are just some examples of other societal aspects entirely different with the World Wide Web.

Pertaining to sports, the acquisition and implementation of big data happened first with Major League Baseball in their search to isolate and quantify each play. The MLB used advanced statistics in an attempt to find market inefficiencies that did not appear on traditional “Baseball Card” statistics. The NBA quickly followed suit during this time period, effectively called the Technocracy Era, and all other major sports have increased interest and traction in technology, big data, and analytics. “Big Data” can be defined as information that is difficult to process using traditional data processing methods or applications, meaning new applications or inventions are created to manifest and provide for this new data and information. At a general level, data is used in order to become as efficient as possible and can potentially be a device for predictive models. Analytics are the discovery and communication of meaningful patterns of data. This analytics type of data has become mainstream. In basketball terms, the analytical aspect comes from parsing through the data and having the knowledge to understand what and how to look for certain statistics or trends. The game of basketball is in the midst of change: trying to maximize optimal outcomes and now driven by new technologies and methods in search to optimize performance and maximize efficiency in terms of building a roster, taking the best shots throughout the course of the game, making the “smart” basketball play, and all the way down to something like talking to and managing the media.

A key part of the “performance revolution” in sports, then, is the story of how organizations, in a systematic way, set about making employees more effective and productive. This, as it happens, is something that other organizations started doing around the same time. Look at what happened in American manufacturing, a transformation that also has its origins in the nineteen-seventies. At the time, big American companies were in woeful shape. In the decades after the Second World War, they had faced almost no foreign competition, and typically had only a few domestic rivals. That made them enormously profitable but complacent about quality and productivity. The result was that, by the early nineteen-seventies, American productivity growth was stalling, while American products were often defect-ridden and unreliable.²

To me, the performance revolution can be translated directly to sport and athletic optimization: the continual quest of bettering yourself. The end goal of analytics and big data is to maximize efficiency and optimization in all aspects of the institution.

To an outside observer, there are not many similarities in today’s NBA compared to yesteryears. Yesteryear can be described as before the Internet arose, and when the NBA was essentially, and relatively effectively, looked down upon. The entire basketball ethos has changed. These wholesale structural and organizational changes could not have been foreshadowed before the television and media breakthrough, which occurred before the Internet. “In those days, no one had scouts. Red (Auerbach) was the coach, general manager, chief scout, and marketing guru.”³ A quick glance at an NBA team directory shows over 50 full-time staffed positions. It is evident that the NBA was not always such a booming business. Thanks in large

² James Surowiecki. "Better All The Time." *The New Yorker*, November 10, 2014. Accessed December 26, 2014.

³ Red Auerbach, and John Feinstein. *Let Me Tell You a Story: A Lifetime in the Game*.

part to astronomical television deals⁴ and the masterful ability to successfully market its biggest stars,⁵ the NBA has skyrocketed in popularity and become the most popular game globally of the four major U.S. sports.⁶ Up until 1981, some of the NBA Finals were on tape delay, and some playoff games remained on tape delay until 1986!⁷ In those eras, players had to work other jobs in the off-season, had no national recognition or coverage, and were essentially treated as big kids playing a game for a living. In fact, as former President Bill Clinton once said, referring to baseball players and their 1994 strike, these athletes are “little kids... and not so little kids.”⁸

The landscape of media and big business did indeed change entirely with the advent of the Internet. It is believed that isolation has become more apparent and more mainstream with technology: fewer human interactions – shopping on the World Wide Web rather than a store, at a table with friends constantly using their phone rather than conversing, or even just walking around wearing headphones and listening to music. The NBA has become a microcosm of society and its creations. Barry Wellman believes humans are more interconnected and more related to each other because of technologies’ ability to integrate others. He claims humans now

⁴ ESPN.com. "NBA Extends Television deals." ESPN. October 7, 2014. Accessed March 01, 2015.

⁵ "Converse Commercial with Larry Bird and Magic Johnson." YouTube. February 10, 2008. Accessed March 01, 2015."

"NIKE MVPuppets "Three Rings" (in HD)." YouTube. May 14, 2009. Accessed March 01, 2015."

⁶ Henry Abbott "Is Basketball Taking over the World?" ESPN. October 9, 2010. Accessed March 01, 2015."

⁷ Jeff Haggard. "Classic TV Sports." : The NBA on CBS Late Night and Tape Delay Playoff Era. May 14, 2013. Accessed March 01, 2015."

⁸ Robert Michael Goldman. *One Man Out: Curt Flood versus Baseball*. 133

have the ability to always be connected, thus declaring the trade-off of more contact and ways of following each others lives to be greater than less potential intimate personal interaction.

This trade-off is similar to the one in today's NBA. No longer is there anyone with control like Auerbach. Auerbach controlled everything and all aspects of the Boston Celtics franchise. He called the shots; times have changed in that no NBA franchise is run like a dictatorship. When Auerbach called the shots, there was less at stake in terms of monetary value, and less resources – both in terms of human and financial capital, invested. Switching from one man having all the power to an integrated management team, where others are involved and have a say in the decision making process demonstrates microcosmic change on a grander scale: that the growth of the NBA parallels societies and is an aforementioned microcosm for potential real-world changes. This professionalization of the NBA mirrors both the democratization and insistence on education throughout the rest of the world. The missing step in this transformation is the emphasis on data and statistics, which stem from more schooling, especially business schools. This shift lends to more of a focus on quantification and organizational culture.

The social organization of professional basketball continues to change. One man used to be able to have total power, essentially absolute rule of what today would be a billion dollar asset. Complete control of a franchise is certainly not viable in the “Big Data” era, nor optimal. There is too much at stake, an NBA franchise is a multi-billion dollar industry. Expanding front offices and investing capital, both human and monetary, in resources that increase opportunities to be

successful, such as analytics, is a worthwhile and necessary decision. Attitudes and expectations have shifted with this wealth of resources. In basketball specifically, the new frontier of analytics has coincided with the boom of franchises in terms of monetary value, as seen by the recent record setting deals.⁹ The NBA-financial boom has resulted in “tech guys” buying teams, and these new owners are taking a holistic approach; building the franchise as efficiently as possible, cutting costs and jobs they deem unnecessary.

One pushback has been that these athletes, while just an “X” on a spreadsheet, are human beings affected and influenced by variables that are dependent on being properly treated. While the athletes may just be a number in an algorithm to get the owner closer to their stated objectives both on and off the court, they still have a family to feed, and an ego to cater to. Compared to coaches, who have a better sense that relationships and personal interactions are still relevant and important considering they work with these players on a daily basis, front offices have become more progressive and increasingly big data and advanced statistics driven. With the rise of more progressive ownerships and general managers, basketball is beginning to be looked at more and more like a valuable asset, a blue-chip stock, and thus treated as such. Players are looked at as assets, and ownerships goal is to collect as many of these such players (assets) that are perceived to be undervalued in the market as possible. This leads to clashes as the new owners care less about fostering relationships and developing a culture, and more about making stone cold calculated moves to help the bottom line. Actual

⁹ Zach Lowe. "How the NBA's New TV Deal Could Blow Up the Salary Cap." Grantland. October 06, 2014. Accessed March 01, 2015."

business is often described nowadays in terms of sports, and sports nowadays are managed like a business. There is more cross-fertilization of approaches, language, and themes from both the owners and players.¹⁰ The “Technocracy Era” has led to the quantification of sports.

In 2015, when one person holds more than one high-level position amongst a franchise it becomes noteworthy.¹¹ A disconnect can arise, stemming from a General Manager and Head Coach, when the General Manager drafts players and makes transactions he thinks can help the team but do not align with the views or evaluations of the Head Coach. Just because it is not in the Head Coach’s job description to evaluate prospective talent, does not mean they do not have opinions. They are coaches who are around the game on a daily basis and their input is still valuable. The General Manager, the one making the decisions yet watches from afar and is not on the court with the players and behind the scenes with them, then sets lofty goals, and if the coach does not lead said players to such goals, controversy builds and tempers flare. An earlier example of this arose between Phil Jackson, then head coach of the Chicago Bulls, and Jerry Krause, General Manager of those Bulls. According to Charley Rosen,¹² Jerry Krause signed Randy Brown without discussing the move with Jackson. Brown became Krause’s guy, but Jackson was not a fan: he thought Brown over-penetrated and was incapable of playing in the

¹⁰ Eli Saslow. ESPN. November 20, 2014. Accessed March 01, 2015.

¹¹ Gregg Popovich and the Spurs, Doc Rivers and the Clippers, Stan Van Gundy and the Pistons

¹² "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

Triangle Offense.¹³ Jackson decided to play incumbent John Paxson over the newly acquired and highly paid Randy Brown, much to the dismay of General Manager Jerry Krause, creating a divide between the two that would permeate their relationship for years.¹⁴

There are plenty of modern examples of a fight for power stemming from differing philosophies, which ultimately has resulted in the coach losing their job. Coaches hardly, if ever, win power plays or internal fights with management. Golden State, fresh off their most successful season in 21 years,¹⁵ fired Head Coach Mark Jackson. Similarly, Memphis fired head coach Lionel Hollins after coaching the team to the Western Conference finals for the first time in team history,¹⁶ with the team choosing then-Assistant Coach Dave Joerger to be his heir apparent. The Sacramento Kings, under new owner Vivek Ranadive, are aiming to become the most progressive team in the league.¹⁷ Ranadive's goal is to make the Kings the most evolutionary franchise in all of sports. In just his first year, Ranadive crowd-sourced the team's first round draft choice,¹⁸ ordered their NBA Developmental League team to play like Grinnell,¹⁹ experimented with 4-on-5 basketball in the D-

¹³ Phil Jackson and Rick Telander. "Last Running of the Bulls, Part 1." ESPN. March 13, 2013. Accessed March 01, 2015.

¹⁴ Sam Smith. "Part XVI: The Last Dance for Jordan and the Bulls." Chicago Bulls. November 9, 2009. Accessed March 01, 2015.

¹⁵ "Golden State Warriors." Basketball-Reference.com. Accessed January 3, 2015.

¹⁶ "Memphis Grizzlies Playoff History - RealGM." Memphis Grizzlies Playoff History - RealGM. Accessed January 3, 2015.

¹⁷ Patrick Redford. "Kings a Conundrum under Ranadive's Reign." ESPN. December 19, 2014. Accessed January 03, 2015.

¹⁸ Kirk Goldsberry. "The Sacramento Kings' Draft Gambit." Grantland. May 14, 2014. Accessed January 05, 2015.

¹⁹ Brad Kallet. "Kallet: Is The Grinnell System Legit Or Unjust? An Expert Weighs In." CBS New York. November 26, 2013. Accessed January 05, 2015.

League, and fired their Head Coach, Mike Malone, after a surprisingly successful start to the season.²⁰ These are all examples of the front-office believing they are more analytically driven and inclined than their head coach, and deciding the only way to implement these analytical changes is to bring in a new coach who they believe has a better understanding, and or more willing to put such data to use. The reason these owners have a belief in analytics is derived from these owners' goal of maximum quantification, calculability, and efficiency. However, cognitive dissonance may still permeate thinking in the NBA hierarchies, especially between coaches and front offices. It is not unanimous that the examples I used were fired solely for analytical reasons, rather just what my analysis indicated. For example, when I exchanged messages with Dallas Mavericks owner Mark Cuban, he made it clear that, "Those were not analytic decisions, rather those were coaching ability decisions."²¹

Putting such new data and information to use is the most incisive question. To aid with these questions, and thanks to the influx of fan interest, events like the Sloan Sports Analytics Conference (SSAC) have been created. SSAC has frequently been referred to as a nerdapalooza, or a stat geek gathering. These events, in particular SSAC, have gone mainstream, and involve panels featuring prominent sports figures. In terms of team building, management is very involved in the

²⁰ Essentially Malone was not forward-thinking enough for the new owners liking. But he had DeMarcus Cousins, a noted head-case believing in him. Sometimes things like that are more important than stats and cannot be quantified with any metric.

DeAntae Prince. "Kings Star DeMarcus Cousins Calls Mike Malone Firing 'unexpected and Emotional'" Sporting News. December 15, 2014. Accessed March 05, 2015.

²¹ "CyberDust Messages with Mark Cuban." Online interview by author. February 25, 2015.

decision-making process including now frequently having data specialists and researchers who are getting paid to collect data through a variety of technologies that drives how teams are put together. “New technology and statistics will change the way we understand basketball, even if they also create a friction between coaches and front-office personnel trying to integrate new concepts into on-court play.”²² Friction may surmise, but data is always true. The real question surrounding the data is does it measure what we think it is measuring and does it matter in the way they are saying it is mattering?

“That does not mean it (analytics) has been an easy sell to the team’s coaching staff, though Toronto Raptor’s Assistant Coaches Tom Sterner and Micah Nori are enthusiastic about analytics and have helped craft the ghost defense. Everyone likes the ghost system, but some of the larger analytics-related issues have caused friction between the front office and some of the coaches — even if everyone involved is mostly polite about it. “It’s always going to be a challenge,” says Ed Stefanski, Toronto’s executive vice-president of basketball operations.

“A lot of high-level coaches have come out against analytics, but it’s the wave of the future, and you’ve got to jump on.”²³ “The virus that infected professional baseball in the 1990s, the use of statistics to find new and better ways to value players and strategies, has found its way into every major sport.”²⁴ This includes basketball, where there is a tension peculiar to the game, between the interests of the team and the interests of the individual. The game continually tempts the people who play it to do things that are not in the interest of the group. On the baseball field, it would

²² Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

²³ Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

²⁴ Michael Lewis. "The No-Stats All-Star." The New York Times. February 14, 2009. Accessed January 08, 2015.

be hard for a player to sacrifice his team's interests for his own. Baseball is an individual sport masquerading as a team one: by doing what's best for himself, the player nearly always also does what is best for his team. This basketball-induced tension permeates front offices, coaching strategy, reporting and coverage of the game, and fan interactions and thoughts regarding players.

Teams, media coverage and reporting, and fans are three of the biggest areas where technology and big data have changed the nature of professional basketball. The goal of analytics is optimization. The optimization of opportunities to be successful: to optimize and maximize efficiency. The goal of basketball players and front offices is to optimize their opportunity to be successful: to win games. The most efficient way to build a team capable of winning games, to find undervalued commodities and resources, is by optimizing their use and implementation of technology and big data. These measurements and statistics are new ways to evaluate and think about what constitutes good in the game of basketball and what we collectively claim as valuable.

Studying social change is important so that we know where we started and came from and we know where we are and we can think about where we are going. This work will focus on changes in the NBA, but it is important to embed those changes in the larger context of society and societal change with regard to technology and big data throughout basketball's storied history. In this thesis, I first take a look at roster construction and how that has changed in teams' quest to quantify and calculate every statistic and measurable that is possible. The second body chapter dives into game-play and how that has been altered, and rationalized,

in various ways through teams' attempts to maximize efficiency and optimization. The third body chapter revolves around media coverage and reporting, and how the Internet and social media have altered immediacy, intimacy, access, and power in sports. And the final body chapter is on fans and how their experience has changed with the advent of these new technologies, social media, and the financial boom basketball has beheld. I am writing about efficiency, optimization, rationalization, quantification, and calculation in the "Big Data" and "Technocracy" Eras.

Chapter Two: Teams: Roster Construction

There are 30 NBA teams. Each team consists of 12 players. Besides the players, a team also has a head coach and four assistant coaches. Coaching staffs and management teams have grown throughout the years, as the NBA only permits four assistant coaches, but teams can create other positions to expand their staff. For example, the Boston Celtics have a 24-person Basketball Operations staff. It is the objective of the General Manager to construct a roster that gives their respective team the greatest opportunity and likelihood to win games. Each roster spot is a worthwhile commodity: a potentially valuable asset. Not only are how teams assembled and the way in which to go about assembling teams entirely different than prior to the analytics age, but also what teams specifically value is continually changing as well as differences in the on-court product and game-play itself. As the game has changed and become more analytically driven, roster allocation has changed. With the growth of the NBA Developmental League (D-League), teams are more inclined to take chances on prospects by giving them a 10-day contract. This “cup of coffee” allows the player to get a feel for the NBA game and lifestyle, while the team gets a short timespan to evaluate how that player fits in, and could potentially transition to the NBA. The role of chemistry cannot be undermined or understated. Players have attracted roster spots with a well-known reputation of enhancing a locker room and being a great presence. But, with this being the Information Age, teams have opted to try and maximize all twelve spots by trying to find niche roles for the end of the bench even if that means rotating players on 10-

day contracts.²⁵ Rather than have three Point Guards, one of which being the starter, and two of similar playing styles, just not as good and being sub-optimal in terms of efficiency and calculations, a team may opt to have a Point Guard, then a scoring Point Guard off the bench, and the third string Point Guard, ideally being someone who brings something different to the table: defense, grit and hustle, length, or another skill in a quest to maximize a teams potential output.

How Is A Team Constructed?

For starters, there was no salary cap in the NBA prior to 1984-1985. A salary cap is a limit to the total amount of money a team can pay its players. The NBA instituted and has continued to have a soft cap, meaning teams can exceed the cap and face penalties, whereas a hard cap means teams cannot exceed the predetermined cap number regardless of circumstance. The salary cap number changes on a yearly basis and is determined by calculating a percentage of the league's revenue from the previous season. The NBA salary cap in 1984-1985 was \$3.6 million. The salary cap for the 2014-15 season is \$63.1 million. The salary cap for the 2016-17 season is expected to hover around \$90 million, thanks in large part to the monstrous new NBA TV deal.²⁶

²⁵ Jeremy Lin is the perfect example of a 10-day contract working out. Lin was signed to numerous 10-day deals early in his career, then received a chance in New York, took advantage of it, and received a 3 year, \$25 million deal the following offseason

Josh Martin. "Dissecting the Evolution of New York Knicks' Jeremy Lin-Sanity." Bleacher Report. February 13, 2012. Accessed January 08, 2015.

²⁶ The deal might end up cracking an average of \$2 billion per year Lowe, Zach. "How the NBA's New TV Deal Could Blow Up the Salary Cap." Grantland. October 06, 2014. Accessed March 01, 2015.

The Internet and technology expedited the process of officially making a trade or acquisition. It is easier to phone deals in, easier to connect with other teams, easier to report information whether correct or incorrect to the media. “Leaking” information to the media is a common trade tactic by teams. While the Internet has made the physical process of finalizing a trade easier, trades in general are significantly harder in today’s era. There are salary cap and draft pick restrictions on trades, restrictions that were not around as recently as 2005.²⁷ As these aforementioned salaries have escalated, making the right draft choice has become increasingly crucial to teams successes. Teams are paying top picks more than they ever have before. But as the salary cap skyrockets, the value of draft picks continues to rise. These picks have risen in value because they have become undervalued compared to the rest of the market. Teams have become reluctant to pay top dollar for what they deem to be mid-talent value, when they feel that talent is replaceable in the draft for a fraction of the cost. It is a way to accumulate cheap talent to save money financially and optimize other areas of their team with the remaining portion of the salary cap. Teams also want to draft well as they have the ability to offer their own draft picks and players more money than any other team before hitting free agency, thus making them more inclined to stay with that original team. It has not always been this way. A player obtains “Bird Rights” after playing under three one-year contracts, a single contract of at least three years, or any

²⁷ The CBA agreement struck that year said the following regarding salary cap restrictions on trades and the amount of draft picks able to be traded, etc. "Table of Contents." NBA Salary Cap FAQ. January 13, 2015. Accessed February 09, 2015.

combination of the two as long as the player has not been waived.²⁸ In its current state, these rights allow a player to sign a five-year deal with their current team, but only a four-year deal if they sign as a free agent with another team.

Cultural and Behavioral Shifts

One of the reasons the stakes are so much higher for making quality draft picks is because it is a much higher stakes money game for all involved. The league's growth can be traced not just in player salaries, but in the leagues revenue, which continue to rise. The financial stakes – the growing league revenues, huge TV contracts, and escalating player salaries and endorsement opportunities, are important factors that have shaped basketball. Those affected both culturally and behaviorally include the media, ownership, labor-management relations and the current CBA, role of the draft, D-League, and international market for players. In basketball, we used to just assume the top five scorers or the guys with the shoe deals were the stars and best players. Now, we have a different set of expectations. We, as fans, collectively understand the greatness of someone like Marc Gasol. This trickle-down effect of smarter fans encompasses the analytics, the metrics, the math and data, all in order to maximize efficiency and optimization.

The rise of technology, advanced stats, and a more advanced and proactive front office has led to an overhaul of how teams choose which players to draft. "Teams in the 1980's would draft players based on what was written on the back of a bubble gum card or basketball magazine, potentially having never actually seen

²⁸ Charlie Zegers. "What Are Bird Rights?" Accessed March 01, 2015.

the guy play.”²⁹ Out are those days, or even the days of the “eye test.”³⁰ Teams have many positions assigned on their staff and front office solely dedicated to the draft and scouting talent, both domestically and internationally. Teams invest millions of dollars in their scouting systems to identify and evaluate the top talent and then bring said talent in for pre-draft workouts, interviews, and all sorts of testing – from a basic physical to testing running form and risk of potential injury.³¹ Blowing your number one choice, especially a top one, which is coveted and not easy to come by, can really haunt a franchise and set it back for years. It can also lead to a front office overhaul. A front office only has a certain amount of time that it can make the right decisions, especially when it comes to the draft, and they only have two rounds to work with to find impactful performers.³²

Technology, new data, and the Internet have had a direct effect on scouting; one can watch nearly any game they want from whenever they want. The Internet has made all information more accessible. This makes scouting both easier and more difficult. It is both a blessing and curse for scouts. Easier and a blessing because scouts have better resources to identify talent, watch players more and do more extensive background work on their prospective draft choices. Difficult for scouts because the margin for error has become slimmer. If a team drafts a “bust,” they will receive more backlash, as it will be assumed they did not do their

²⁹ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

³⁰ Domenic Scarano. "The Eye Test: Watching Makes a Difference." Bleacher Report. March 25, 2009. Accessed March 01, 2015.

³¹ Chris Ballard. "The next Frontier in Sports Information? Predictive Injury Analysis." SI.com. December 23, 2014. Accessed January 09, 2015.

³² 1974 = 10 rounds, 1985 = 7 rounds, 1989 = 2 rounds

preparation prior to the draft, or the prevailing thought and mindset of “How could they (Team X) mess up the pick first-round pick with all the information and technology available today?” With fans’ increased knowledge and understanding of the sport, and the logistics and numbers behind the sport and decision-making process, fans’ expectations rise. These expectations are powerful and fans expect a lot from their management team.

Which Technologies?

While it is obvious to say the Internet is at the forefront of the technology push, however, that simple sentence and fact alone cannot be understated. A scout or coach can watch almost any game from any era through Synergy Sports Technology. Synergy Sports Technology provides real-time video and statistics for the basketball community. The services are incredibly expensive – between \$5,000 - \$7,5000 for each team per season,³³ and reserved for the NBA, NBA D-League, WNBA, NCAA Men and Women, International basketball including the United States Men’s Olympic Team, and some media outlets such as EA Sports, NBA TV, ESPN, and Turner Sports. Synergy cuts and catalogs every possession of every game logged, provides in-depth stats and analytics with direct links to video matching any stat in any category, interactive shot chars, drive direction and post moves charts, is user friendly, provides filtration analytics that allow coaches to look up specific facts and statistics such as: “Who is my best clutch shooter on the road in games decided by 5 or less points in the final minutes of the game?”³⁴

³³ Pete Thamel. "Meteorologist Becomes a Go-To Guy." The New York Times. March 23, 2011. Accessed January 09, 2015.

³⁴ Accessed January 10, 2015. [http%3A%2F%2Fcorp.synergysportstech.com](http://3A%2F%2Fcorp.synergysportstech.com).

“Synergy is so advanced that the Butler assistant coaches Matthew Graves and Micah Shrewsberry said they could take a player like Old Dominion guard Kent Bazemore, whom they faced in their first game of the N.C.A.A. tournament, and find out that he drives to the right 75 percent of the time (despite being left-handed).”³⁵

While it is true that in the days of “just” video breakdown, this information could have been reliably compiled, it is the ease with which this information can be accessed that makes the difference. With just a couple of clicks, this information is available for the teams, thus making it easier to create scouting reports and spend time more efficiently. The economy of scouting has increased tremendously from where we were (pen and paper, to basic video breakdown) to where we are (advanced video compilations, player tendencies one click away, tracking movement on the court).

The Most Comprehensive and Encompassing: SportsVU

Another technological advance that has exploded in recent years is SportsVU. Of all the technologies and data being discussed, this one, in my opinion, has the greatest potential to completely change and revolutionize the game of basketball. Zach Lowe, basketball writer for Grantland and long considered one of the best in his profession, agrees with me, “We are just starting to see the SportsVU impact. And it’s going to be big. Monumental. The NBA looks completely different than it did fifteen years ago and I would surmise that it will look completely different fifteen years from now than it does today.”³⁶ SportsVU is revolutionizing the way sports contests are viewed, understood, played and enjoyed. SportsVU delivers captivating

³⁵ Pete Thamel. "Meteorologist Becomes a Go-To Guy." The New York Times. March 23, 2011. Accessed January 09, 2015.

³⁶ "Interview with Zach Lowe." Interview by author. December 9, 2014.

and innovative solutions for leagues, teams, broadcasters, sponsors and web and mobile destinations that shed new light on the game.³⁷ Sports VU provides player tracking. Six cameras are installed in the catwalks of every NBA arena, using software that tracks the movement of every player on the court and the basketball 25 times per second. Every moment on the floor is recorded and then is sent back to its front-office keepers as a byzantine series of geometric coordinates.³⁸ The data collected provides a plethora of innovative statistics based around speed, distance, player separation and ball possession. Some examples include: how fast a player moves, how far he traveled during a game, how many touches off the ball he had, how many passes he threw, how many rebounding chances he had and much more.³⁹ SportsVU is currently used in the UEFA Champions League, as well as over 2,000 international soccer games in addition to its accelerated rise throughout the NBA.

As of the 2012-13 NBA season, fifteen NBA teams had purchased SportsVU, which costs about \$100,000 a year.⁴⁰ Today, every NBA team has these cameras in their arenas. SportsVU provides comprehensive and sophisticated statistics to NBA franchises that were previously unavailable. Turning this data, X-Y coordinates devised through complex coding, into useful information is the challenge all NBA teams face. With SportsVU, teams have the capability to demonstrate what the

³⁷ Accessed January 10, 2015.

<http://www.stats.com/sportvu/sportvu.asp>.

³⁸ Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

³⁹ "Player Tracking." NBA.com/Stats. Accessed January 10, 2015.

⁴⁰ Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

players on the court should be doing based on where the ball is and what the teams inputted defensive principles are while simultaneously showing where the actual player is. Yes, it is very complex. SportsVU can show where Player X is, and where that players "Ghost" is. The "ghost" being the ideal positioning based of the team's inputted defensive principles. The movement of these ghosts (where a player should be) is based on expected value of a possession, calculated multiple times per second while the possession is moving along and developing. Teams are able to factor in skill sets and prior statistics for players, these X-Y coordinates moving around a screen. "Anybody who is going to pooh-pooh this kind of analysis will say things like, 'You can't measure defense, because it's all about the guy who doesn't help or rotate,'" says Keith Boyarsky, the Toronto Raptors technical director of analytics. "That it's about what you can't measure. But that's exactly what we're measuring."⁴¹ SportsVU will drastically aid and help in basketball's goal of quantification and optimization.

As it currently states, SportsVU's relationship with the NBA is a microcosm to the Internet's relationship with society. We, as a society, consume the Internet on a daily basis. We have no idea how to measure or quantify its power, boundaries, or ability to influence change. SportsVU has been created and provides endless amounts of information and data to and for teams. It is a technology, however, that has been created without any specific need. Ideally, SportsVU will find new trends and new ways to measure the game that enhance our knowledge – both for teams to

⁴¹ Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

help better their product, and for fans to have an increased understanding of the game.

Sabermetrics Infiltrate Basketball

While these technologies have influenced the game with their spatial analytics and an ability to maximize resources, advanced statistics, stemming from a better understanding of the game and not just these new video and player tracking systems, have also developed and thrived. What started as the sabermetric revolution in baseball led by Bill James and became popularized by Billy Beane in *Moneyball*, became *Basketball on Paper* by Dean Oliver. Sabermetrics is the empirical analysis of baseball, specifically designed to measure in-game activity and maximize outcomes and resources. Sabermetrics frequently question traditional measures of baseball skill. Bill James defined it as “the search for objective knowledge about baseball.” Oliver’s basketball book “combines the statistical analysis of Bill James in baseball with the coaching philosophy of Dean Smith to arrive at a unique tool that is valuable to fans and coaches alike.”⁴²

In Oliver’s search for finding similarly objective measures regarding the game of basketball, Oliver developed the “Four Factors of Basketball Success”: Shooting, Turnovers, Rebounding, and Free Throws. He gave each factor a percentage for the amount of weight these factors have in determining wins or losses. 40% for shooting, 25% turnovers, 20% rebounding and 15% for free

⁴² Dean Oliver. "Basketball On Paper." Basketball On Paper. Accessed January 11, 2015.

throws.⁴³ Shooting, turnovers, rebounding, and free throws are just statistics. The “advanced” aspects comes about through the formulas used and calculated to measure these statistics. For shooting, Effective Field Goal Percentage (eFG%), $(FG + 0.5 * 3P)/FGA$. For Turnovers, Turnover Percentage (TOV%) is measured by $Turnovers/(FGA + 0.44 * FTA + TOV)$. Rebounding is measured through Offensive and Defensive Rebounding Percentage (ORB% and DRB%). The formula for free throws is FT/FGA . And for rebounds, Offensive Rebounding Percentage is $ORB/(ORB + Opponents DRB)$ and for Defensive Rebounding Percentage it is $DRB/(Opponents ORB + DRB)$.⁴⁴

“Rebounding numbers can be misleading as well. A team may outrebound its opponent but lose by a large margin. Why? If the opposition is making a high percentage of its shots, there are fewer defensive rebounds to grab. That is why Pomeroy calculates rebounding percentage as a more accurate gauge of a team’s rebounding ability. Arizona Coach Sean Miller values offensive rebounding percentage so much that he uses the statistic during timeouts and at halftime.”⁴⁵

Just like other aspects of society, basketball continues to advance and progress with the aid of technology. Besides the math-driven reasoning, another potential reason 3-pointers are being shot at a historic clip is because players spend more time practicing those shots. And that practicing is easier than ever with the invention of something like The Shooting Gun.⁴⁶ A shooting gun is essentially

⁴³ "Four Factors | Basketball-Reference.com." Basketball-Reference.com. Accessed January 11, 2015.

⁴⁴ Glossary of acronyms: FG = Field Goal, 3P = 3 – Pointer, FGA = Field Goal Attempt, FT= Free Throw, FTA = Free Throw Attempt, TOV = Turnover, ORB = Offensive Rebound, DRB = Defensive Rebound

⁴⁵ Pete Thamel. "Meteorologist Becomes a Go-To Guy." The New York Times. March 23, 2011. Accessed January 09, 2015.

⁴⁶ "Shoot-A-Way." Shoot A Way. Accessed February 12, 2015.

someone's own rebounder; it has a large net around it that collects the rebounds and funnels them through a machine that shoots the basketballs back out to the player to shoot. The basketball used for these practice shots could be a 94fifty basketball;⁴⁷ a regulation basketball with sensors inside that measure your jump shot and ball handling and then can send them back to whichever technological device you have that can download their 94fifty app. To measure the extent of how hard one is working, an athlete can use catapult technology. Catapult Technology is the next frontier of sports analytics: involving biometric testing, which also monitors fatigue and overtraining. "Fatigue and load are the biggest things we're looking at right now," he says. "I think you can honestly say that teams lose 10 to 15 games a year because players aren't even remotely close to physical and mental freshness."⁴⁸ "Tracking rest, activity outside of basketball, health with a heart-rate monitor and genetic testing is next for the basketball analytics."⁴⁹ This imbalance of information will soon become a CBA boiling point issue, where there is a disconnect between management and its players. In the quest to make basketball as statistically sound and rational as possible, searching for the perfect combination of math and skill, data and technology, under the vein of winning basketball games, it is the players stuck in the middle. Shane Battier, a 14-year NBA veteran and two-time NBA champion, considers himself a basketball lab rat. Besides being given

⁴⁷ "Smart Sensor Basketball :: 94Fifty® Basketball." 94Fifty Basketball. Accessed February 12, 2015.

⁴⁸ LeBron James is a great recent example. Took some time off and went to Miami to see doctors and warm weather and has come back looking like his old self Pablo Torre and Tom Haberstroh. "New Biometric Tests Invade The NBA." ESPN. October 10, 2014. Accessed March 09, 2015.

⁴⁹ "Interview with Zach Lowe." Interview by author. December 9, 2014.

pages of scouting reports and statistical tendencies, Battier admitted analytics sapped him of his creativity, “I became very conscious of what was good and what was bad. I lost all of my creativity. I made one non-paint, two-point jumper in 2012.”⁵⁰

“But let’s not exaggerate: This isn’t *Moneyball*, with people at each other’s throats and folks threatening to quit their jobs. It’s not even close to that, actually, and that’s in part because the SportVU data do something most smart NBA people have been doing for a long time: combine video (the “eye test”) with advanced statistics. Understanding sports has never been about one or the other; it’s about both, and the cameras represent the most advanced actualization of that marriage. The coaches in Toronto helped the analytics team build the ghost system, and the analytics team sends the coaching staff regular e-mails with advanced numbers on upcoming opponents — e-mails the coaches read.”⁵¹

The assemblage of teams has changed with big data and technology with so much new information available. Scouting reports are done more efficiently and in-depth than ever before. 3-pointers are being taken at a historic rate. “We’re still just in the developmental phase,” Rucker says of translating stats for coaches. “And things are much better than they were four years ago.”⁵² The situation is fluid; the game of basketball continues to evolve from its antiquated notions to the Technocracy Era in search for optimization by way of quantifications and calculations.

⁵⁰ Dollinger, Matt. “Fifty NBA Notes, Quotes and Anecdotes from Sloan Conference.” SI.com. March 1, 2015. Accessed March 05, 2015.

⁵¹ Zach Lowe. “Lights, Cameras, Revolution.” Grantland. March 19, 2013. Accessed January 05, 2015.

⁵² Zach Lowe. “Lights, Cameras, Revolution.” Grantland. March 19, 2013. Accessed January 05, 2015.

Chapter Three: Game-Play and Coaching Strategies

Analytics are changing how teams are coached and strategies employed throughout basketball. Math is the driving force behind this game-play shift. While changing the game aesthetically, math is an overarching theme that drives our everyday lives and basketball is no different. Math and the statistical analysis behind it has helped make Nate Silver, Ken Pomeroy, John Hollinger, Tom Haberstroh, and countless others well known. Silver has essentially said that people are dumb, the numbers do not lie, and if you follow these numbers then success will ensue. To put it in behavioral economics terms, people are dumb and make poor decisions. Whether because people are loving and caring, nice, or just stupid, people are not often rational in a monetary sense. Numbers, in all aspects of society, can help predict success in businesses, the stock market, and various other real-world applications. In basketball terms, this emphasis on numbers means that from a statistical standpoint, a contested 3-point attempt is a better shot than an open long 2-pointer unless it is an elite long-2 maker shooting the shot. For a long-2 to be considered even a decent shot, the shooter has to be a specimen at that skill. Considering how good one needs to be to make that shot worthwhile, it is no wonder why the game is changing and players are spending more time beyond the arc. A “stretch-4”⁵³ that can defend is incredibly valuable. This gives teams a player that can guard both wings and some power forwards, while stretching the defense

⁵³ A Stretch 4 is a wing player who can defend some power forwards and can shoot the basketball from beyond the arc
Zach Harper. "Stretch-4s in the NBA: The Balance between Stretching and Defense." CBSSports.com. October 15, 2013. Accessed March 10, 2015.

all the way out to behind the 3-point line. This is the rationalization of the game of basketball. Increasingly calculated and quantified, the game continues to evolve: the importance of 3-point shooting and rim protection are greater than ever. The analytics and new data it creates continue to drive this change both aesthetically – on the court, and behind closed doors. The social structure and organization of basketball has changed; it is bigger than the game itself and the manifestation seeps onto the court with its gameplay and style.

The new data that is the greatest cause for this influx of information is SportsVU. SportsVU provides teams with relevant data, statistics, and analytics that has changed what teams value, how they should value it, and essentially, how teams should and do play. “The coaches, even the most receptive ones, seem to view analytics and SportVU mostly as a tool to confirm what they already think and know. Some examples: Dwane Casey, Toronto’s head coach: “It’s a good backup for what your eyes see.” Casey added, “It may also shed light on something else,” a sentiment both then assistant coaches Micah Nori and Tom Sterner echoed at points. “But you can’t make all your decisions based on it, and it can’t measure heart, and chemistry, and personality.” Sterner, “It helps reinforce your gut. Most of the time, your gut is pretty much right.” “More than anything, it’s a tool to help confirm what your eyes see,” said Nori.”⁵⁴

Gregg Popovich, arguably the best coach of all-time, said, “I think most of the things we find out from analytics pretty much are logical. Things you already have a pretty good feel for. Sometimes they prove what you were thinking ahead of time. Now and then, there might be something you need to look at because there’s something that might

⁵⁴ Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

be happening that you didn't notice. So there's a use for it. But we don't walk in every day and say, 'Give me the analytics.' It's just one of the tools."⁵⁵

Brad Stevens, former Butler University basketball coach who led the school to its first ever National Championship appearance (doing so in back-to-back years) and now coach of the Boston Celtics, is considered a pioneer of the advanced statistics movement for coaches. He is considered one of the most progressive coaches in all of basketball, at the forefront and cutting edge of advanced statistics and analytics, however Stevens believes in balance. He says analytics and advanced statistics are absolutely important, but the only statistics that matter are the ones that the players understand, know, and fully grasp. Stevens also believes culture is more important than any of the numbers. "That (Lenny Dykstra's toughness that cannot be measured in the stat sheet) may speak to some of the things you can measure,"⁵⁶ Stevens said, "but there's not much you can measure there other than, this guy has got some mental fortitude to get a hit when it matters."⁵⁷ Putting the data and information now available to use is most paramount. The analytical information, for the competent and well-run franchises, becomes assimilated into teams' preparation. The much-discussed Houston Rockets like to shoot three's, so their D-League team is very three-point heavy. In baseball, the Oakland Athletics, pioneers

⁵⁵ Matt Dollinger. "Fifty NBA Notes, Quotes and Anecdotes from Sloan Conference." SI.com. March 1, 2015. Accessed March 05, 2015.

⁵⁶ Discussing his favorite part from Michael Lewis' Moneyball, which Stevens believes reveals part of his character

⁵⁷ Quote from Statistical Analysis Just Part of Brad Stevens' Game, Baxter Holmes. "Statistical Analysis Just Part of Brad Stevens's Game - The Boston Globe." BostonGlobe.com. March 1, 2014. Accessed January 18, 2015.

of the “Moneyball Era,” train their minor leaguers to master the art of the walk to boast on-base percentages.

History: The 3-Point Shot

The area where advanced statistics has most affected the actual game-play and where fans would see a most noticeable difference comes from the 3-point line, where a shot from a certain distance is now worth 50% more than other shots from closer range. The math formulated and devised through these statistics is very much pro-3-pointers. “The coaches aren’t even close to being onboard with such a 3-happy philosophy yet. “To have guys who shoot 3’s that can’t break that 35 percent break-even point, you have to really evaluate that,” Sterner says. “You can shoot as many 3’s as you’d like,” Casey says, “but if you don’t make them, that philosophy goes out the window. There’s always going to be disagreements. Analytics might give you a number, but you can’t live by that number.”⁵⁸ 3-point attempts continue to be on the rise; teams are shooting 3’s both in terms of percentage and attempts, at a historic clip and this is an additional example of the rationalization of the sport and the effect math has had on the game.

The NBA introduced the 3-point line in 1979. Larry Bird is long considered one of the best shooters of all-time, and with good reason. However, a further look at the statistics reveals an example of just how much the game has and seemingly will continue to change. A cliff notes version of the 3-point timeline shows that in 1980 only two players attempted more than 300 3’s. In 1981, the league high was just 169. Nobody bit in 1982, either, with just four attempting more than 100. The

⁵⁸ Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

long awaited “breakthrough” came in 1986, which featured the first 3-point contest at All-Star Weekend, when Larry Bird guaranteed a victory beforehand and backed it up by taking the crown.⁵⁹ This was the beginning of 3-point specialists developing. Furthermore, Bird only attempted more than 200 3-pointers twice in his career, with a career high 237 in 1987-88. Meanwhile, fast forward to the 2013-14 season, five players made more than 200 3-point attempts. Stephen Curry led the league in both makes and attempts, at 261 makes in his 615 attempts. In the 3-point lines inaugural year, teams attempted, on average, 2.8 3P/game. That number climbed to 9.9 in 1993-94, but was not having its desired effect. So, the NBA moved the line to 22 feet around the entire arc. For three years, teams saw a then-record number of attempts, and after the 1996-97 season the league decided to move the arc back to the 23 feet 9-inch mark, and keep it at 22 feet in the corners. Within 10 years, teams were firing up more 3-pointers per game than ever before. 2013-14 was a historic year for shooting, as the league averaged 21.5 3-pointers per game. The discrepancy between the Corner 3 (22 feet 2 inches) and the 3-pointer from everywhere else (23 feet 9 inches) is distinguishable. Teams have begun to capitalize and employ strategies to maximize opportunities from a shot that could be the same distance elsewhere on the court, but when taken from the corners, becomes worth 50% more.

The Lab Rats

Now teams such as the Houston Rockets employ what Zach Lowe referred to as a “math-based offense.” They shoot a league-leading amount of 3-pointers,

⁵⁹ Bill Simmons. *The Book of Basketball: The NBA According to the Sports Guy*. New York: Ballantine/ESPN Books, 2009.

attempt to get to the basket, and then everywhere else on the court is a territory where they do not want to take shots. Teams look to fast break, and once in the half-court, their offensive intentions and goals are clear: the most statistically efficient shots in basketball. And their defensive strategy is the inverse: to limit the number of open 3-pointers, corner 3's, and paint shots while attempting to force as many off the dribble shots and midrange jump-shots as possible. Analyzing the relative value of different shots has led to an increase in 3-pointers. So much so, in fact, that the Houston Rockets NBA Developmental League team, the Rio Grande Valley Vipers, have started experimenting with taking only 3-point shots and shots inside the paint. As a team, they have consistently averaged over 40 3-pointers per game! To put that in perspective, the most any NBA team has averaged in a single season was the 2002-03 Boston Celtics at 26.3 per game! ESPN stat guru Kevin Pelton described the Vipers play as "the most extreme professional basketball in America."⁶⁰ The players on the Vipers seem to understand what is occurring. As ex-Vipers star, and current Houston Rocket, Troy Daniels says, "We're lab rats. All we do is shoots 3's, and that's what I do." But Daniels also does not think that model is a sustainable one, citing the fact that "We're not robots. We're tired at the end of the day."⁶¹

But the problem with human experiments is that they intrude on real lives. What might be a data quest by the Sacramento Kings is a player's only hope at a lifelong dream. Diminished to numbers on a spreadsheet the Bighorns players might be disposable but inside the locker room they are men on the brink unsure what

⁶⁰ Jason Schwartz. "The Amazing Pace." Grantland. February 24, 2014. Accessed February 20, 2015.

⁶¹ Jason Schwartz. "The Amazing Pace." Grantland. February 24, 2014. Accessed February 20, 2015.

being a basketball lab rat means for their futures.⁶² “You can sit there and complain that you are part of an experiment and that this is your D-League year but it’s also no different than what you have to do if you get called up to the NBA and learn a team’s system right away,” Stockton says. As the season has gone on some players have even liked the way their own abilities have developed. Jordan Hamilton, who played four seasons with the Denver Nuggets and Houston Rockets, believes the emphasis on passing and rebounding has allowed him to show off skills he was never able to display in college or his years in the NBA.⁶³

The average fan may call the Houston Rockets boring: When Daryl Morey, the mad scientist of analytics, landed (James) Harden in the trade of the decade, he not only got the superstar he coveted, he also acquired the perfect instrument for his basketball laboratory. Morey told Grantland that Harden “is a good fit here, but James would be a good fit with all 30 teams.” Be that as it may, the pair has become perhaps the most stylistically harmonious player-GM arrangement in the NBA over the last two months. By design or by happy accident, Harden plays a brand of basketball that beautifully conforms to his GM’s innovative visions. By now, everyone knows that the Rockets’ offensive philosophy is built around 3’s and paint shots; they avoid the midrange.⁶⁴ Ex-Chicago Bulls and Los Angeles Lakers Coach and current New York Knicks General Manager Phil Jackson concedes that the three-point shot has changed the game and strategy. But Jackson remains ambivalent

⁶² Jason Schwartz. "The Amazing Pace." Grantland. February 24, 2014. Accessed February 20, 2015.

⁶³ Jason Schwartz. "The Amazing Pace." Grantland. February 24, 2014. Accessed February 20, 2015.

⁶⁴ Kirk Goldsberry. "The Future of Basketball Is Here, and It Looks a Lot Like James Harden." Grantland. January 07, 2015. Accessed February 7, 2015.

about its overall effect on the game. "I don't know if it's helped or not," he said. "I can't be that definitive. It has made it a little bit of a hocus-pocus game."⁶⁵

My Way or The Highway

Not all teams have taken analytics fully in stride. With Jackson, one of the best coaches of all-time, declaring he is unsure whether or not they have helped. The Knicks, under Jackson as their new General Manager, employ a Triangle offense, popularized by his championship Bulls and Lakers teams. The system is comprehensive; relying on spacing, continuous ball and player movement, and fluidity. The team looks to watch and observe the complexities of the offense, the off-ball movement and backdoor cuts. The Triangle features three guys on one side of the court at any given time. The offense features a big man in the pinch post, a player on the wing, and another in the corner of the court. The other two are on the opposite side of the court, positioned to either get back on defense or are ready for the triangle action should the big switch sides of the court. It is based on complex motion, requiring people to be responsible for their own movements in accordance with what their teammates are doing. Consisting of three guys on one side of the court at all times, the offense frequently becomes very stagnant, with everything stopping as the players pass the ball into the high post and attempts various cuts, dribble handoffs, and other off-ball movements. With the set-up employed the team is able to both crash the offensive rebounds while also sending a couple guys back on defense.⁶⁶ Said Knicks Point Guard Jose Calderon, "It's about getting the proper

⁶⁵ "Interview with Phil Jackson." Interview by author. November 12, 2014.

⁶⁶ Scott Cacciola. "Three Sides To This Story." October 27, 2014. Accessed January 22, 2015.

spacing and moving the ball and reading the defense.” Basketball is a game that relies on synchronicity amongst teammates; and that can take more practice than usual for the triangle offense to succeed and look smooth and fluid. “All 5 players, based on their strengths and weaknesses, can impact the game - which is different and unique compared to running a set play where you look to maximize one or two players strengths.”⁶⁷

Showing a relative lack of regard for how the game has changed and newer, statistically driven trends and movements is the fact that Jackson still employs the Triangle Offense in 2015. With the triangle, as just discussed, spacing can be jumbled. The weak-side big man comes over to the middle of the floor to receive a pass, making the space very confined for the other four offensive players to move around. The offense is just different; it is read and react and more of a pound it inside offense than commonly seen today.⁶⁸ There is a groupthink fluidity to a perfectly executed triangle offense, with the offensive players moving in a highly complex tandem. As Jackson said when I had the opportunity to talk to him when he came to Vassar,

“The Triangle is not conducive to corner 3’s. I’m not opposed to them but it just does not work out with the strong side action. Whereas most other teams offenses start at the top of the key and involve a big guy coming up to the high post, we run an offense predicated on three guys to one side of the court with the ball on that side at all times.”⁶⁹

⁶⁷ Scott Cacciola. "Three Sides To This Story." October 27, 2014. Accessed January 22, 2015.

⁶⁸ "Interview with Zach Lowe." Interview by author. December 9, 2014.

⁶⁹ "Interview with Phil Jackson." Interview by author. November 12, 2014.

This style of offense frequently leads to what is referred to as long 2's,⁷⁰ which are a basketball statistician's nightmare. I asked Jackson about the corner 3 because, as discussed earlier, they are one of the best shots in all of basketball. However, the new discussion centering on why teams shoot such a higher percentage from the corners is based on a newfound principle and concept that those corner shots are comparatively more open. Players are not attempting isolation corner '3's', rather just catch-and-shoot 3's' from the corner, which boosts the corners percentages. According to Grantland's Kirk Goldsberry, 96 percent of corner-threes come off assists.⁷¹ This is relevant and important, because in quantifying basketball, corner 3's have become the second most efficient shot besides shots right around the rim. And in determining how to attain those type of shots to maximize optimization, it is important to note if they are shots that are assisted (relying on the help and creation of a teammate), or created on their own.

Defense?

In basketball, half of the game is spent on offense and half on defense. So far, I have talked mostly about offense and the impact new advancements and improvements have had in terms of maximizing efficiency and optimization. That is because, the "analytical community" has spent more time on the offensive side as

⁷⁰ A long-2, is a 2-point jump shot attempted within the 3-point line but still far away from the basket. They are oft-criticized because of their proximity to the 3-point line, where a short distance away means the shot would increase in value by 50%.

Kirk Goldsberry. "The Sons of Pop and the Zen Master: It's Time to Properly Measure the Value of NBA Coaches." Grantland. March 06, 2015. Accessed March 10, 2015.

⁷¹ Matt Dollinger. "Fifty NBA Notes, Quotes and Anecdotes from Sloan Conference." SI.com. March 1, 2015. Accessed March 05, 2015.

defense still lags behind in terms of advanced statistics and how to measure and quantify them. The measurements used to gauge individual defense still cater to box score stats. "We talk a lot about how player tracking is poised to revolutionize basketball analytics. But up until now, what we really mean is offensive basketball analytics. Offense is sexy and fun, and it's generally easier to model, measure, and quantify."⁷² Defense involves more moving parts and the end result is harder to quantify than simply a make or a miss and who was guarding the player attempting the shot. While offensively, everyone knows who the top performers are. On the defensive end, who is considered an elite defender is still up for debate.

"Anecdotally, (Chris) Paul is considered one of the best defenders in the NBA. But we don't have any charts or advanced metrics to prove that conventional wisdom. In fact, while the statistics we use to judge offensive play have never been more thorough and complex, defensive analytics are still overly reliant on age-old tallies like steals and blocks."⁷³ "Defensive analytics are dragging behind drastically. This was one of the biggest themes from the 2015 SSAC conference. Only (about) 10 percent of metrics apply to that side of the ball, yet it's 50 percent of the game."⁷⁴

Defensive Player of the Year voting has changed tremendously. The voting used to be measured solely off box-score statistics like blocked shots, and steals. Today, with the wealth of information available, and still ways to go in terms of measuring and evaluating defensive performance, the media tends to vote and analyze smarter and based off more facts and advanced statistics that better measure players worth – both offensively and defensively. For example, a blocked

⁷² Kirk Goldsberry. "Department of Defense." Grantland. February 24, 2015. Accessed March 1, 2015.

⁷³ Kirk Goldsberry. "Department of Defense." Grantland. February 24, 2015. Accessed March 1, 2015.

⁷⁴ Matt Dollinger. "Fifty NBA Notes, Quotes and Anecdotes from Sloan Conference." SI.com. March 1, 2015. Accessed March 05, 2015.

shot is just as it sounds; when a defensive player blocks a shot that an offensive player shoots in an attempt to score. Centers, or anybody with the ability to provide rim protection, are vital to success in the NBA. Because a block does not directly influence the score, it impedes the opposition from getting a shot on net but does not tangibly affect the score, therefore the exact value and effect of blocked shots are still unknown. This used to comprise essentially half of the relevant information and statistics on the Defensive Player of the Year (DPOY) voting: blocks for big men and steals for guards.

“The antiquated nature of defensive stats affects everything from sports bar spats to free-agent contract negotiations. As basketball races headlong into its own version of the big data era, this has to change. Unfortunately, with the exception of a few outside groups, a vast majority of progress in this area is occurring behind the locked doors of practice facilities because of league rules. And while some teams may be cracking the codes of defensive analytics, they sure as hell aren’t sharing their findings with the public.”⁷⁵

Enhancing Game-Play

While defense is still undervalued in both the mainstream media and in terms of fans’ evaluation of players, it is offense that ultimately sells tickets and gets the highlights on Sports Center. And the NBA knows just that; adjusting rules accordingly. Rules are a constant work in progress to enhance game-flow and make the game as entertaining as possible. Rule changes are driven by fans to make and keep fans interested – especially in terms of scoring.⁷⁶ “Free-flowing offense is now the norm, with players able to go unencumbered almost anywhere on the court. As

⁷⁵ Kirk Goldsberry. "Department of Defense." Grantland. February 24, 2015. Accessed March 1, 2015.

⁷⁶ David Aldridge. "Rules Changes Have Affected Defensive Philosophies." NBA.com: April 23, 2009. Accessed February 1, 2015.

such, the game's most dominant individual players and those that are particularly skilled at drawing contact have even more of a chance to get to the foul line."⁷⁷ The objective of these rule changes was to increase scoring, improve game flow and to allow the NBA to showcase their star players' individual talent.

"First came increased penalties for flagrant fouls (1990) and fighting (1993), the implementation of the "five points" rule that called for automatic suspensions of players who amassed a certain number of flagrant fouls (1993). Hand checking was eliminated in 1994. Using the forearm to defend players facing the basket went away in 1997. In 1999, the league eliminated contact by a defender with his hands and forearms both in the backcourt and frontcourt, except on offensive players who caught the ball below the free throw line extended. Defenses were also prohibited from "re-routing" players off the ball. This freed up perimeter players who used screens to get open. Nor were defenders able any more to grab or impede offensive players setting screens. In 2001, the defensive three-second rule eliminated defenders camping out in the lane away from their offensive man to help."⁷⁸

Again, the creation of these rules was to make the game more fun to watch and to increase gameplay, enhancing the experience for the fans and increasing viewership and interest in attempt to maximize business profits and related-decisions.

The New Stats

Some of this efficiency and optimization information is starting to be consumed by the public. John Hollinger, creator of the Hollinger PER (Player Efficiency Rating) has brought advanced stats into the limelight for NBA fans.⁷⁹ The PER is a rating of a player's per-minute productivity. It is per-minute and pace-

⁷⁷ David Aldridge. "Rules Changes Have Affected Defensive Philosophies." NBA.com.: April 23, 2009. Accessed February 1, 2015.

⁷⁸ David Aldridge. "Rules Changes Have Affected Defensive Philosophies." NBA.com.: April 23, 2009. Accessed February 1, 2015.

⁷⁹ Hollinger has since been hired as the Vice President of Basketball Operations by the Memphis Grizzlies

adjusted, enabling the comparison between player's on different teams and in different roles and minute allotments.⁸⁰ How to calculate PER is not secretive, it is just very difficult to have the know-how, and wherewithal to input the formula and keep it accurately running on real-time all the time. Ken Pomeroy has done something similar for college basketball teams and fans. He has revolutionized these advanced statistics for college basketball teams. His website, kenpom.com, is a must-have for all college programs throughout the country. For any given team or player in any given season dating back to 2002, kenpom.com features adjusted offensive and defensive efficiency, tempo, the same four factors Oliver created that I discussed last chapter, and much more. Oftentimes, both Pomeroy and Hollinger's formulas and statistics, confirm much of what we as fans already see and know. But sometimes, new trends or data emerge that surprise us and allow adjustments to maximize output.

"Advanced analytics have emerged as a valuable preparation tool. (Brad) Stevens uses Pomeroy's numbers to seek trends in losses and to identify teams' strength and weaknesses. It is all part of trying to crack the code of the opposition."⁸¹ University of Miami Head Coach Jim Larranaga frequently uses and references advanced statistics, particularly kenpom.com: "The Miami players hear about advanced statistics more than they see the numbers themselves."⁸² Larranaga stresses the important numbers to his players, the one's he deems valuable. Similar

⁸⁰ John Hollinger. "Hollinger: What Is PER? UPDATED." ESPN.com. August 8, 2011. Accessed February 5, 2015.

⁸¹ Pete Thamel. "Meteorologist Becomes a Go-To Guy." The New York Times. March 23, 2011. Accessed January 09, 2015.

⁸² Nicole Auerbach. "Jim Larranaga's Use of Analytics Gives Miami Secret Weapon." USA Today. March 1, 2013. Accessed February 1, 2015.

to Steven's approach, all he cares about are the numbers his players need to know, and that they do know those numbers. "(In our scouting report,) Their coaches tell them (the players) the important ones. This team is 50th in tempo, that team is 300th. This one is in the top 10 in offensive rebounding, that one turns the ball over on just 14% of possessions."⁸³ Tempo is a buzzword for Pomeroy's statistics, frequently referred to as "tempo-free stats." "Pomeroy's statistics are often referred to as tempo stats because they take into account the pace of a game. So, instead of using traditional numbers like points per game to gauge an offense or a defense, his statistics are predicated on offensive and defensive efficiency, which are essentially points per possession."⁸⁴ The beauty of Pomeroy's work lies in the fact that you do not need to be proficient in mathematics to figure out his work and what it means for your team and the ensuing scouting preparation. "'I'm not a math geek," said the George Mason assistant coach Chris Caputo, who does his team's scouting reports. "But it gives me a quick statistical synopsis of who they (the team) are before we watch tape and personnel. What do they do well? What are their strengths and weaknesses? Where do their points come from? It's a snapshot of relevant statistics."⁸⁵

These statistics, new websites, more advanced scouting reports, have all contributed to the growth and inherent change within the game of basketball. The spatial aspect of basketball, the relative value of spacing, has soared. There is an

⁸³ Nicole Auerbach. "Jim Larranaga's Use of Analytics Gives Miami Secret Weapon." USA Today. March 1, 2013. Accessed February 1, 2015.

⁸⁴ Pete Thamel. "Meteorologist Becomes a Go-To Guy." The New York Times. March 23, 2011. Accessed January 09, 2015.

⁸⁵ Pete Thamel. "Meteorologist Becomes a Go-To Guy." The New York Times. March 23, 2011. Accessed January 09, 2015.

increase in importance on having “floor-spacers,” guys who can cause the defense to over-rotate or over-help, freeing up other shooters or driving lanes for their playmakers. The trickle-down effect is starting to be seen and become readily apparent: 3-point shooting has increasingly gotten better, and seen more attention in terms of value and highlight reels, thus kids are working on that aspect more and becoming more proficient. As current NBA broadcaster, ex-Golden State Warriors Head Coach, and one-time All Star Mark Jackson said, “It (the 3-point shot) can be a tremendous weapon, especially if you have power forwards (stretch 4’s) who have an ability to step out and shoot from three-point range. To me, that only helps the game.” Although there is already an abundance of advanced statistics on the offensive end, hoops junkies and nerds are getting creative in measuring other stats. Two such statistics starting to circulate are called “Boogie Boards” and “Kobe Assists.” A “Boogie Board” is rebounding your own miss and scoring, while a “Kobe Assist” is a shot that you miss and a teammate offensive rebounds for an immediate basket. These examples, statistics derived very recently, show how we are just starting to crack what we know about the game of basketball and how we can go about measuring various plays and aspects of the game as teams continue their quest for optimization. In terms of affecting game-play and strategy, stats like this show, demonstrate and illustrate more clearly and explicitly the value of star players. Strategy changes when a star enters the team picture. These newer stats illuminate some of the ways in which strategy can be altered with the end goal in mind of maximizing optimization and efficiency.

Chapter Four: Journalism - Media Reporting and Coverage

Coverage of basketball has and will continue to change and evolve. Covering the NBA when The Finals were tape delayed⁸⁶ is different than covering the NBA when LeBron James' diet becomes a trending Twitter topic.⁸⁷ Technology and the Internet, going hand in hand, have obviously played the biggest roles in how the journalism and coverage of basketball is different. Without the Internet, journalism, media reporting, and coverage would all be entirely different entities.

The entire structure of teams' basketball coverage has changed. Today's teams employ beat writers, but rather than solely having a beat writer for their coverage the team now has many different news outlets and reporters covering and writing about their team. A beat writers job requires working with the same people and same sources on a daily basis and writing on deadlines. The job requires solid relationships with the players or else the beat writer cannot adequately do their job. These writers rely on their relationships and ability to communicate directly with the team and its players on a daily basis to do their job and produce quality work. Today there are other news outlets plus the national media, whom do not necessarily have to see eye-to-eye with everyone on a particular team as their job is not required and dependent on such. This means that national media article and websites are theoretically able to take a more objective point-of-view and come across as more neutral, or even cold, as it is indifferent as to whether or not the

⁸⁶ In the late 70's and up until 1981 the NBA Finals were on tape delay, and some of the playoffs were on tape delay up until 1986! Insane.

⁸⁷ Dave McMenamin. "LeBron James Dishes on Weight loss." ESPN. September 26, 2014. Accessed February 12, 2015.

subject (player) approves of their article and work. To sum up the social structure, the old days had journalists and beat writers, today there are journalists, beat writers, websites, blogs, and stat gurus to go along with countless other media positions anchoring sports' coverage, meaning there is more ways to receive information, more sources to turn to in search of news, and more opinions to be read and hot takes created.

Changing of the Guard

The growth of journalism can be seen as a microcosm for basketball in general. The game has exploded in terms of popularity, viewers, and every other measurable statistic. Similarly, the amount of journalists that cover sports has increased exponentially. While there is that aforementioned new attitude of reporters towards the teams they are covering and teams that national news outlets are covering for a certain article, there is also an overabundance of articles and news stories in general. With so much being out there all the time, the majority of athletes subconsciously look at the media in a negative light. Now, I am not saying that athletes having antagonistic relationships between them and the media is new, rather, it is almost presumed that the athlete will just serve the reporters lip-service during interviews for fear of the media becoming the enemy as athletes now have a better understanding of the media, its role, and the power the media has.

To go along with the difference in structure and makeup of news reporting and coverage, the difference in what was reported and what actually happened was astounding.

“As far as beat writers were concerned, in those days, a lot of the beat writers would actually travel with the team. It made the connection

way more intimate. Which, at the same time, meant that you did not always write what you saw. You protected those guys. They became your friends. You were traveling on the same plane as them, staying at the same hotel. You did not want to say something that would irritate them. So, if you saw someone doing something negative or getting drunk, you just would opt to not write about it because you were with them (the guys on the team) much more.”⁸⁸ Rosen continued, “The media today is looking for something sensational; which they did not do in the old days and is what I would say is the biggest difference in their coverage and reporting.”⁸⁹

Chipmunks

Similar to the sports’ attempt to maximize outputs, the Chipmunks helped maximize readers’ understanding of professional athletes and how they operated on a daily basis. The Chipmunks arose in an attempt to deliver the actual truth to the public, in a sensationalizing manner. The Chipmunks were what has essentially become modern-day blogs. Blogs have bettered writing because more content is available causing those employed to work better and harder and the Chipmunks did the same, just in a previous time period. The Chipmunks had “beatnik tendencies in dress and manner” and “hustle, in the form of endless questioning.” The *News* also detected a blog-like admiration network: a “constant concern with, and profound admiration for, the literary talents of himself and his fellow chipmunks.”⁹⁰ The Chipmunks existed to expose athletes with a fun way about them and a unique writing style. “The Chipmunks” were sports writers who did not buy into the puff stories that were generally written. They took a more cynical approach and

⁸⁸ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

⁸⁹ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

⁹⁰ News, Sporting. "Late Innings." Google Books. 1966. Accessed February 4, 2015.

viewpoint.⁹¹ Report what you see. No sugar coating or protecting the athletes. The first tenet of Chipmunk sports writing is that you hype what's interesting, not what's hyped. The second tenet of Chipmunkery: impudence. "One thing about all of them that's important," says the writer Pete Hamill, "is there was no sentimentality. By which I mean, no faking sympathy that they didn't feel."⁹² This was Shecter's Chipmunkery:⁹³ An all-out assault on the old-time heroes.⁹⁴ The sportswriter of 1942 had gotten terrific access to athletes but swallowed the salacious stories. The sportswriter of 2012 has poor access, but makes up for it (sometimes, in theory) by writing the salacious stories. "There was this shining moment of the Chipmunks," says Robert Lipsyte, "in which they had total access and they pretty much wrote what they saw."⁹⁵

Intimacy, Immediacy, and Access

Along with the immediacy that inherently comes from the instant media generation, the intimacy between players and media would, from afar, appear to be at an all-time high with the rise of the Information Age. However, I would say, athletes have less intimacy and less introspection because they are not able to formulate as close relationships with their reporters as there are so many different reporters looking for different stories. Not travelling together creates different

⁹¹ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

⁹² Bryan Curtis. "No Chattering in the Press Box." Grantland. May 03, 2012. Accessed February 11, 2015.

⁹³ The late Leonard Shecter, an original Chipmunk

⁹⁴ Bryan Curtis. "No Chattering in the Press Box." Grantland. May 03, 2012. Accessed February 11, 2015.

⁹⁵ Bryan Curtis. "No Chattering in the Press Box." Grantland. May 03, 2012. Accessed February 11, 2015.

relationships. Athletes and reporters may have less intimacy, while simultaneously being able to forge stronger bonds for public consumption. By being unable to get as close, the public is the winner. In 2015, a writer will say how they really feel. Both parties know that they need each other, and if ties are cut off or access denied, that becomes a negative news story and draws a lot of unnecessary attention and ire. Athletes are also weary of speaking off the record with the media because they do not trust them and do not know them as well.⁹⁶

However, this also leads to one of the biggest issues journalists and traditional media face: access. Zach Lowe recently wrote an in-depth article about the state of the Milwaukee Bucks.⁹⁷ That article had nothing too extreme or fascinating in it, however, what separates Lowe from other writers is his ability to be granted access. That specific article included many direct quotes and thoughts from one of the team's new owners, Marc Lasry, and their General Manager, John Hammond, but almost all of his work features something similar. "Any one can write what I wrote. I did not write or unearth anything groundbreaking in my (Bucks) article. More so, it's the fact that I am able to get that access that unfortunately, in today's era, is not readily available to and for everyone. I also have a relationship with those guys so I know they will be honest and forthright with me, which is important."⁹⁸ Access allows writers to perfect their articles with the

⁹⁶ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

⁹⁷ Zach Lowe. "Milwaukee's Makeover: How the Bucks Decided to Buckle Down and Play for the Future." Grantland. December 09, 2014. Accessed December 09, 2014.

⁹⁸ "Interview with Zach Lowe." Interview by author. December 9, 2014.

needed quotes and maximize potential insight and analysis. Not only was access easier in prior era's, it was more unique and a different type of access.

For example, take this excerpt from my Charley Rosen interview: "You could sit at a bar and drink the night away with the coach. Red Holzman was famous for doing just that. He would tell the team to do whatever they want but the bar at the hotel is my territory and you guys are not allowed there. And he'd shoot the shit with his cronies and the media and drink beers and smoke cigars until he decided to call it a night."⁹⁹

Relationships and Power

Journalists have a different relationship in covering basketball than the old days. "The local press was all over me to take Cousy. I wasn't interested in making the press happy – I had a ball club to build."¹⁰⁰ The Boston Celtics ended up with future Hall of Famer, Bob Cousy, because the Chicago franchise, which drafted Cousy, folded. Three players were made available in a dispersal draft to help the three worst teams. The Celtics were one of the three worst. Coach and General Manager, Red Auerbach, made it known that Cousy would be his last selection of the three if he had a choice. As fate would have it, Red pulled Cousy's name, and Cousy was a Celtic. The rest is history. Making the press happy is something Auerbach simply did not care about. The media and journalists have power, arguably more power than ever, which is commonly understood, however some current athletes and those in the sports industry understand better than others. The coaches and players also understand how quickly the media can turn on them. One bad decision,

⁹⁹ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

¹⁰⁰ Red Auerbach and John Feinstein. *Let Me Tell You a Story: A Lifetime in the Game*.

one marketing miscue, and suddenly a likeable athlete can be turned into the villain.¹⁰¹

Smarter Fans: The Decentralization of Information

The Internet has made information decentralized. The cause and effect of decentralizing information has made for a smarter fan. No longer are fans stuck only listening to their beat writer and newspaper; they have the ability to read whomever they want. They are not held down by the local beat writer who is beholden to those relationships and is not able to go off topic. Fans can choose which writers to follow for specific topics; sabermetrics and advanced statistics from this place, depth chart analysis from this website, etc. Decentralized information, as well as having more information available empowers me as a fan to not take any one person too seriously and as gospel. Fans can optimize knowledge about any sport or topic because of this increasing coverage with access to gaining any information publicly available. For example, Ken Pomeroy has revolutionized college hoops with his data on advanced stats. He and Dean Oliver are the “Grandfathers” of advanced stats in college hoops and the NBA. For any college basketball related statistic, I first turn to Pomeroy and his website. For any NBA analysis, I turn to Zach Lowe. I choose to turn to these two, because with Pomeroy, it is the proper blend of advanced statistics being provided to me in layman’s terms. Pomeroy’s work is less opinion and polemical, rather more informative and sometimes groundbreaking. Regarding Lowe, I just believe he is the best in the

¹⁰¹ Henry Abbott. "LeBron James' Decision: The Transcript." ESPN. July 8, 2010. Accessed January 10, 2015.

business at what he does: simplifying a complex NBA world incorporating video segments, advanced metrics, sound analysis and a high basketball IQ.

The Race For First

Additionally, everything is so instant. The sports happenings occur instantaneously. The immediacy of the moment has changed. The definition of immediate has changed. Between reporters, it has become a race to see who is first in reporting a story or breaking news.¹⁰² The immediacy of the story combined with everyone on social media has created a frenetic air about it. Who gets the scoop, who is first to say this, who is first to do this, who is first to break the news.¹⁰³ Today you can do things instantaneously. A game recap, report, or article can be typed up and emailed within an incredibly short period of time after the game. Theoretically, an article can be out there for the world to see before the athlete(s) has even had time to leave the post-game locker room. Regarding what has changed, the Internet is the biggest change. Back in those days (pre-internet, 1970's and 80's), it was either a newspaper or a magazine. And a one-day old newspaper had no value. Magazines were around back then but they had such a long lede time between what you wrote and when it got printed that there was no sense of immediacy whatsoever. Everything was much more delayed. In fact, guys were flattered to have a feature story done on them.¹⁰⁴

¹⁰² Kevin Draper. "Basketball's Biggest Reporter Is Waging War on ESPN—And He'll Do Anything to Win." December 16, 2014. Accessed January 7, 2015.

¹⁰³ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

¹⁰⁴ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

The ever-changing immediacy and intimacy has sapped private lives. With everything done so quickly, and everyone having a camera and taking pictures or videos, coupled with reporters not being as close to athletes and therefore unafraid to report what they see, anything an athlete does can become public. Everything is reported; nothing gets held back.¹⁰⁵ The Internet and online information is as immediate as it gets; and once it is there, it becomes permanent and can be accessed forever. There is more competition amongst reporters and writers to not only break news, but to be the best in an attempt to generate as many clicks as possible. And sites know that people and the media consume negativity and controversy, both of which sell; stirring up the tabloids and revving up the interest. It is difficult to do anything these days without someone having a camera or making a video and then it goes viral, impacting the privacy of professional athletes. Their lives simply are not nearly as private as they used to be. They have to be very, very careful. The relationship between the media and athletes is just not as personal or as intimate. And another relatively underreported or talked about aspect is the fact that popular Internet articles get seen by millions of readers as opposed to thousands of eyeballs of yesteryear with the magazines and newspapers.¹⁰⁶ Yes, social media, something that will be discussed ad nauseam next chapter has enabled fans to appear closer to athletes than ever before. But that simply is not reality. Access and coverage have changed, which skew and alter perception from reality. Especially

¹⁰⁵ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

¹⁰⁶ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

when considering that athletes are often providing the access themselves through social media.

Media Realities

The reality is that the media trying to relate to and understand the athlete's it covers takes time and that is very difficult to do. Besides the daily grind and issues that arise with being an athlete, racial demographics play a role as well. In 2013, 76.3% of the NBA was comprised of black players. At risk of sounding vague and general, a good majority of the media is white. This creates differences and potential problems. Besides racial demographics, the media cannot always relate or understand where an athlete is coming from. Professional athletes do not just roll out of bed and get paid significant sums of money to play a game for a living. The reality is that they face major scrutiny and are criticized on their performance and job that they do every single day of their season.

After the 1969 title, Bill Russell was hyped. He was crying tears of joy. In what ended up being the last of those Celtics teams' titles, Russell asked every outsider (friends, employees, media, owners) to leave the locker room for a few minutes. "We are each other's friends." The room cleared out and they spent precious time celebrating with other another. Who knows what was said in those moments. As Isaiah Thomas says, we wouldn't understand. And us, fans and media from the outside, we wouldn't understand, he's right.¹⁰⁷ I do believe race plays a role in the coverage of sports, in particular, basketball. However, the point I want to

¹⁰⁷ Bill Simmons. *The Book of Basketball: The NBA According to the Sports Guy*. 55

re-emphasize is that the media lives in a whole different world and sphere of life than the athletes from which they cover.

I believe today's sports writers and analysts are smarter than ever. They are more prepared, up to date, and willing to include and utilize the relevant, meaningful statistics that the analytics and big data era have provided. Los Angeles Lakers Head Coach Byron Scott received considerable backlash when he proclaimed something the general public and media thought was way off based in terms of importance of winning basketball games. He said, "I don't believe it wins championships," when discussing 3-pointers.¹⁰⁸ We've already discussed the value and importance of that shot, but years ago the media certainly would not have criticized Scott for those comments. In fact, the media used to criticize teams for being too jump shot heavy and reliant on 3-pointers.¹⁰⁹ Perception regarding the 3-point shot has changed. Teams are less scrutinized for firing the ball from deep, with a more common understanding of percentages. Defensive Player of the Year voting that I discussed in Chapter 3 is another example of the media becoming smarter, more knowledgeable, and in-tune with the relevant and meaningful statistics that are around for consumption.

It is still hard to fathom that just over 30 years ago the NBA Finals were on tape delay. The NBA needed cable, and needed it badly. The NBA has transitioned to the Internet Era arguably better than any other American sports league. It has instituted NBA League Pass, where for a certain fee fans can access all games, aside

¹⁰⁸ James Herbert. "Byron Scott on 3-pointers: 'I Don't Believe It Wins Championships'" CBSSports.com. October 17, 2014. Accessed January 3, 2015

¹⁰⁹ Howard Ulman. "Has Boston's Magic Gone Bad? After Playoffs, Celtics' Mystique May Be Dead." May 8, 1990. Accessed December 10, 2014.

from blackout restrictions, from their television or digitally (computer, phone, tablet), or both. Fans also have the option to pay a lesser fee and choose five teams and receive all of their games. The NBA has also incorporated advanced statistics into their box scores while simultaneously providing SportsVU statistics on its website. With the new television deal that was just completed, and an impending new CBA, the next wave of information provided by the NBA to sports fans should continue to provide even more information and statistics not found anywhere else in the league's long-term and relatively drawn out goal of online distribution. In general, the league's coverage has increased and become increasingly complex and strategic, especially in terms of digital coverage. Today, sports writers and analysts work to be smarter, more prepared, and up to date when it comes to relevant and meaningful statistics when talking to players and coaches knowing full well that any blunder will become trending on social media.

Chapter Five: Fans

While relationships between journalists and athletes have become increasingly less personal, the same cannot be said for the relationship between fans and athletes. The experience of being a fan is continually changing, and that is no different in the “technology era.” Investigating change in fan hood and fandom is admittedly subjective, but there are poignant examples of change and differences that did not exist and were not around in previous eras. Fans today have a chance to directly interact with athletes through new platforms thanks to instant media. The most common: Twitter, Instagram, YouTube, Vine and Facebook, have given fans more potential access to players’ personal lives than ever before. No, beat writer’s no longer travel with the team, nor do they form more personal relationships, share hotels or do their best to cover for their players’ potential off-court antics and behavior. However, for fans, this unprecedented access is entirely different, distinct, and authentic. It is a glimpse into the lives of these athletes directly from themselves, without the ability to hide or engage in third-party involvement.¹¹⁰

Instant media has changed the fan-player interactions forever. It has also changed the way fans receive their information. In terms of fan-player interactions, fans look at instant media as a chance to get closer to the players they idolize than ever previously imagined. From the fans point-of-view, this is mostly a positive. Interacting with the players is usually all fun and games. Sometimes, however, it can be a negative and get out of hand. For example, Paul George and J.R. Smith have

¹¹⁰ Websites and companies like Fanology have developed to have fans handle social media and media related endeavors.

"Home – Landing Page." Fanology Digital Content Studio. Accessed January 23, 2015.

both seen their reputations take a hit through Twitter and Instagram, respectively.¹¹¹

“While it is cool and certainly unique for fans to be able to directly interact with players, I cover the NBA for a living and there are not many players I feel I have been able to get to know better solely because of their social media persona. With the rare examples being Tony Allen and Kendall Marshall (positively) and (Paul) George and J.R. (Smith).”¹¹²

But from the players point-of-view, there is great long-term opportunity to turn these interactions into positives. The causal effect of social media has been that players’ behaviors have changed. Not only can the athletes use social media to relate to fans and engage in regular conversation and dialogue, or meet up with fans,¹¹³ they also can use it as an opportunity to expand their brand. Athletes opt to give the public a glimpse into their lives to seem more relatable and properly understood, essentially attempting to humanize themselves.

Going Viral

Another aspect that social media has influenced, and changed fans’ relationship to the game is through blogging and additional websites. SBNation has created a platform for a vibrant online fan community to write and post their thoughts, and have gained traction in terms of readership by doing so. This has provided fans a chance to be analysts in new ways. One of the ways to analyze such

¹¹¹ Complex Magazine. "J.R. Smith's Greatest Social Media Moments - J.R. Wonders, "You Trying To Get The Pipe?"" Complex. May 7, 2013. Accessed February 16, 2015. ESPN.com News Services. "Paul George Apologizes For tweets." ESPN. September 11, 2014. Accessed February 16, 2015.

¹¹² "Interview with Zach Lowe." Interview by author. December 9, 2014.

¹¹³ See Ochocinco, Chad.

Amy Nelson. "Fan, Friends, Family Connected with Ochocinco." ESPN.com. January 31, 2010. Accessed February 16, 2015.

performances is through a new social media platform, called Vine. Vine consists of short video clips, at most 6 seconds in length and every night get posted all throughout social media. Have a highlight-reel dunk, a ridiculous play, or be on the other end – getting posterized or ignored by a teammate, and it will be all over Vine. “Vines like these have redefined how people watch sports in the age of social media. Limited to six seconds, they are long enough to show a full play, yet short enough to consume anywhere.”¹¹⁴ “Vine revolutionized the way you can do instant replay,” Perez said.¹¹⁵ While instant replay has been around for a while, Vine gives anybody and everybody the ability to post the short clip of the play to social media instantaneously. A fan is better off searching the internet or social media for the Vine of a top play or replay, and that way the fan can watch it as many times as they desire.

Social media has not just changed fans’ relationship to the game, but players’ relationship to the same game they play as well. Players know if they want to be selected to the games highest honor, it’s All-Star Game, they will need the fans’ support. The Dunk Contest and 3-point contest are fan driven, and created to entertain their ardent supporters. Regarding social media and Vine, it isn’t just fans who follow the NBA this way. The first thing many players do after their games is check their phones. There, they say, they catch up on that night’s action by watching Vines. “It speeds up the highlight process,” said Orlando Magic forward Kyle

¹¹⁴ Ben Cohen. "Vine: The Best Way to Watch the NBA." WSJ. January 28, 2015. Accessed February 11, 2015.

¹¹⁵ Ben Cohen. "Vine: The Best Way to Watch the NBA." WSJ. January 28, 2015. Accessed February 11, 2015.

O'Quinn. "You don't have to go back and watch 'SportsCenter' Top 10."¹¹⁶ One might even say that players have a fear of "going viral." It goes unsaid, but watch any NBA game, and on a fast-break you may very well see a player go for a low-percentage play like a steal just to avoid being in the position where they may get dunked on and ending up all over the Internet.

Branding

Just like everything else previously discussed, branding continues to change. Magic Johnson was one of the first athletes to use the media to his advantage. Johnson created a brand and image that portrayed a star athlete as always smiling, humorous, and super likable;¹¹⁷ something that led to sponsorships and commercials both during and post-career.

"Today's modern athletes have become more mindful of using the media to promote themselves. Players know they can sell themselves for better contracts and off-court endeavors. Most of them now understand the monetary opportunity in becoming a spokesperson for a company or being asked to partake in commercials."¹¹⁸

Personalities and potential opportunity can arise from both on-court play and demeanor, and off-court personality mainly through the manner in which the players handle the media. Contrary to Magic Johnson, Larry Bird was stone cold with the media throughout the duration of his career. Classically short and disengaged with the media, Bostonians did not take a full appreciation and liking to Bird until he finally showed emotion. At first, the first two seasons playing at The

¹¹⁶ Ben Cohen. "Vine: The Best Way to Watch the NBA." WSJ. January 28, 2015. Accessed February 11, 2015.

¹¹⁷ Ira Berkow. "Sports of The Times; Magic Johnson's Legacy." November 8, 1991. Accessed February 8, 2015.

¹¹⁸ "Interview With Charley Rosen." Telephone interview by author. December 24, 2014.

Boston Garden, there was a barely perceptible distance between Bird and Boston fans, a wall erected from his end that we (fans and media) couldn't break through. That's much tougher to in 2015 than it was in 1980. Bird was assumed to be dumb and that he couldn't express himself, nor did he care about fans and that he just wanted to be left alone. That changed when Bird showed emotion in Game 7 of the 1981 Eastern Conference Finals against Philadelphia.¹¹⁹ From that point on, Bird became loved and admired from fans all over the world, and especially in Boston. Commercials followed soon thereafter. Present players have learned from past players about handling the media and maximizing potential opportunities if that is their end-goal.¹²⁰ In other words, I believe players realize they are paid as entertainers and to put on a show. And with that territory, comes a stage-managed aspect to their persona. They are competing at the highest level, on national television, with millions watching and the athletes are fully aware of that.

Its Gotta Be The Shoes

Furthermore, players capitalized on these opportunities by turning them into shoe deals. "More than any other sport, basketball lives and dies by its footwear."¹²¹ Athletes capitalized on this increased attention and likeness by having commercials, and in turn used those commercials to promote their own products and apparel. The NBA, the only professional sports league where its athlete's faces are fully visible and constantly on display, has been able to promote the shoes its top players

¹¹⁹ Bill Simmons. *The Book of Basketball: The NBA According to the Sports Guy*. New York: Ballantine/ESPN Books, 2009.

¹²⁰ Stefan Bondy. "Spurs All-Star Duncan All about Fundamentals, Not Spotlight." NY Daily News. February 13, 2015. Accessed February 14, 2015

¹²¹ Matt Reevy. "10 NBA Players Making a Fortune Off Shoe Endorsements." The Cheat Sheet. March 02, 2014. Accessed February 11, 2015.

wear and promote its stars better than any other American sports league. As a result, the shoe industry has exploded. With lines like, “It’s gotta be the shoes” developing.¹²²

“Since the NBA is such a star-driven league — it is the only major U.S. sport with players that features its athletes unobstructed by helmets or other protective gear — it only follows that the big shoe companies would give large sums of money to the big stars. The NBA: where big shoe deals are made. The dates show that the basketball shoe (and the basketball shoe endorsement) predates the modern NBA’s founding. The Converse All-Star, first created as a soccer shoe, took on new life as the Chuck Taylor signature basketball sneaker in 1932.”¹²³

The NBA was founded in 1949.

Today, LeBron James makes \$42 million annually in shoes and endorsement deals.¹²⁴ The market has exploded. Fans are literally killing each other over shoes on their release day.¹²⁵ Michael Jordan has rewritten the shoe game and market. He still makes \$80 million annually.¹²⁶ Endorsements and business opportunities have changed players’ relationships to both fans and the media. As a result, and knowing the money that’s at stake, players have become extremely image-conscious. In the 1990’s, long considered the “toughest decade of hoops,” Michael Jordan kept his cutthroat, near detrimental, mindset and mantra away from the media. He wanted that to slide under the radar, so as to not hurt his brand. In the 2000’s and beyond,

¹²² *Retro Michael Jordan and Spike Lee Commercial*. Performed by Michael Jordan and Spike Lee. Accessed March 5, 2015.

¹²³ Matt Reevy. "10 NBA Players Making a Fortune Off Shoe Endorsements." *The Cheat Sheet*. March 02, 2014. Accessed February 11, 2015.

¹²⁴ Kurt Badenhausen. "LeBron James' Endorsements Breakdown: By The Numbers." *Forbes*. January 22, 2014. Accessed January 6, 2015.

¹²⁵ Dan Sewell. "Police: Teen Shot Dead by Shopper Wanted New Nike Air Jordan Shoes." *The Salt Lake Tribune*. December 23, 2014. Accessed March 05, 2015.

¹²⁶ Kurt Badenhausen. "How Michael Jordan Still Earns \$80 Million A Year." *Forbes*. February 14, 2013. Accessed February 02, 2015.

the NBA has become more loose and carefree. Most of the players are friends, coming from the AAU ranks and having competed against each other their entire lives. When a player allows his in-game competitive nature to show in off-the-court endeavors, such as Russell Westbrook and how he handles the media, extreme backlash occurs. The NBA's economic maturation has driven the rise of a "persona" that players try to fit. Watch a playoff-game press conference, and the majority of the stars are making fashion statements with their clothes, wearing glasses without lenses, presenting themselves as goofy people. Branding, shoe deals, marketing, and image all play a role in the way fans consume the game of basketball. This is a newer avenue players have chosen to differentiate themselves in any way, shape, or form. Whether it is Dwyane Wade and his clothing fashion, Russell Westbrook and his, or Rajon Rondo and his uniqueness, these athletes like to use the coverage and platform to make themselves stand out. It is a way to expand their brand and likeness. Basketball is a business, and the NBA tries to capitalize on these fans by monetizing them in any way possible.

Fans receive their information differently in 2015 than earlier years. With this newer media, fans are constantly connected and up-to-date. Gone are the days of finding out "breaking news" in the morning newspaper. In are the days of receiving news via Twitter instantly, even having some of the top sources on SMS alert. With this increase in information and the speed at which fans are able to receive this information, a platform to discuss fans perceptions of players on a consistent basis has emerged. This plethora of information has enabled fans to be smarter than ever. Most fans have some sort of beginning knowledge on advanced

statistics, especially in terms of what is and is not a high percentage shot. Rudy Gay is the classic, heavily discussed, and oft-maligned case.¹²⁷ There are more websites and information available with advanced statistics permeating, infiltrating, and becoming a mainstay in their articles. In addition to these websites, Twitter has provided a platform for stat-geeks and hoops junkies to unite and voice their opinions. Basketball Twitter has arisen; which is a place where hoops junkies can express their thoughts, and opinions, oftentimes progressive and unique, while simultaneously interacting with one another.¹²⁸ Discussion understandably gets intense; fans are passionate. In general, fans overvalue offense when valuing and discussing players. Defense is harder to evaluate. As discussed in Chapter Three, and more specifically, defensive impact on opponent shooting efficiency is hard to attribute to individual players throughout the duration of an NBA game.

The combination of the rule changes mentioned in Chapter Three (hand-checking, freedom of movement, defensive 3-seconds, flagrant fouls), "Basketball Twitter," and advanced statistics coupled with technology has changed and affected how the game of basketball is narrated. When discussing the game's best players, it is easy to just reference and use offensive statistics. I already touched on how defense is harder to measure, and it is true: much of fan's derived value of players comes from offensive statistics, both in the box score and the advanced statistics. All in all, I would say advanced statistics, rule changes, and a more avid and

¹²⁷ Tom Ziller. "Rudy Gay's Lament: How Advanced Stats Arguments Are Being Framed All Wrong." SBNation.com. September 30, 2013. Accessed February 17, 2015.

¹²⁸ Seth Partnow. "Demystification of DIY - Defining Basketball Analytics Down." Nylon Calculus. February 22, 2015. Accessed March 11, 2015.

intelligent general fan base has helped the game of basketball and made it better. The game, as a whole, has become a more enjoyable viewing experience.

The Ideal Case Study: Fear The Beard, The James Harden Edition

Furthermore, the intersection of basketball narration and aesthetics leads us to the perfect case study: Harden, Daryl Morey, and those aforementioned Houston Rockets. Harden and the Rockets have a unique style; by choosing to frequently pass up or not even look for potential mid-range jump-shots, they are electing to pass up potential points and scoring opportunities in search of something better. However, they do this knowing full well that the shots they are passing up are the most inefficient shots in basketball, and thus continuing their quest for better shots. But, just because a shot is inefficient does not mean it cannot help your team at times. The Rockets are constantly walking this fine line. Not looking to score from certain parts of the court can lead to some uneasy aesthetics. No one likes to watch a basketball game, especially an NBA game, where players pass up open shots. It disrupts game-flow, something the NBA has worked extremely hard to enhance.¹²⁹

“The other Harden critique is one of aesthetics. There’s a lot of grumbling about the Rockets out there, with many dismissing Rocketball as ugly and/or gimmicky. Morey and Harden have designed approaches to maximize success within the framework of the league rules. The NBA has legislated this brave new hoops world into existence — promoting the worth of the 3-point shot and free throws over other forms of scoring.”¹³⁰

For basketball fans, this type of game-play can be difficult to swallow. It pushes

¹²⁹ David Aldridge. "Rules Changes Have Affected Defensive Philosophies." NBA.com. April 23, 2009. Accessed February 1, 2015.

¹³⁰ Kirk Goldsberry. "The Future of Basketball Is Here, and It Looks a Lot Like James Harden." Grantland. January 07, 2015. Accessed February 7, 2015.

back what fans think they know, understand and are comfortable with. Fans do not want to pay to watch a free-throw contest.

“For those of us who grew up watching Bird, Magic, and Jordan, there’s an increasing dissonance between what we perceive to be dominant basketball and what actually *is* dominant basketball. Sometimes the two are aligned, but they seem to be increasingly divergent — and perhaps the most tragic analytical realization is that the league’s rapidly growing 3-point economy has inherently downgraded some of the sport’s most aesthetically beautiful skill sets. You can’t be Bernard King or Alex English, bobbing and weaving into space on the elbow or along the baseline, anymore. Hell, it’s hard to even be LaMarcus Aldridge or Al Jefferson. The Chris Boshes and Serge Ibakas of the world, once forever camped out in the post, now stray beyond the arc. That unassuming curved line has forever changed the NBA. For every graying (Kevin) Garnett, (Tim) Duncan, or Kobe (Bryant), lugging their 2-point jumpers toward the exit, there’s an upstart Harden or (Kevin) Love hanging out behind the 3-point line. Houston thrives on the perceptual dissonance that separates traditionally great basketball from contemporarily smart basketball. While the rest of the league gradually meanders from the old way to the new way, the Rockets seem happy to exploit margins to extremes that no other team does — yet.”¹³¹

For fans, this provides sort of a catch-22: fans want to see a fun and entertaining game that is aesthetically pleasing and utilizes all aspects of the court and game but also want to see their favorite team win. More times than not, they are mutually inclusive, but sometimes they are exclusive. There is an equilibrium, and the Rockets strive to find that balance more so than any team in the league. It is this increasing reliance on quantification and calculation that has rationalized the game and attempted to optimize performance and efficiency on the court.

Fans are smarter in 2015 than they have ever been before. While that may sound subjective, with all the new platforms and resources available, it is difficult

¹³¹ Kirk Goldsberry. "The Future of Basketball Is Here, and It Looks a Lot Like James Harden." Grantland. January 07, 2015. Accessed February 7, 2015.

for it not to be true – especially with the decentralization of information. Besides increasing resources like social media, SB Nation, and others, technology has enhanced fans’ ability to understand and watch sports. From High-Definition televisions, to access to any newspaper in the country, to a better general understanding of what it takes to succeed and win in the NBA. Fans understand tanking and the inevitable necessity of struggling, or “bottoming out,” before attempting to get back to the top of the league. There is a positive feedback loop that fans understand, with recent examples being both the Philadelphia 76ers and Boston Celtics. Fans understand their General Manager’s vision, which makes it easy for them to understand and relate and keep interest. Fandom now consists of not wanting the Knicks or any other tanking team make a deal that puts them in position to get back in the playoff hunt just to be the 8th seed and have a first-round exit. Information being decentralized has affected our expectations as fans, and we are perfectly fine with that. Being more knowledgeable as a society applies to every sphere of life. We know more and have more access in any industry or sphere we desire. We are no longer beholden to such a small subset of voices; hence why we trust politicians even less than we did 20 years ago.

Basketball is a beautiful game. While I do consider myself part of the “advanced stats community” and “Basketball Twitter,” that has not taken away enjoyment from the simplest of actions that occur on a basketball court. Big data and technology can rationalize many aspects of basketball; math is an overarching theme and concept that hovers over all that humans do. However, seeing someone make an extra pass or set a bone-crushing screen, something that does not

necessarily appear in either a traditional box score or even an advanced box score, still excites me.

In 2015, fans think they know best. But, in reality, they do not. We (fans) do not even have access to all the potential and relevant information. While teams like Phoenix have a reputation of being a first-adopter in terms of training staff, and Dallas with in-arena connectivity (Heart-Rate Monitors, Fatigue), both potentially impacting free-agent destinations, there are countless other teams that are progressive that either is not publicized about or unknown to the media altogether.¹³² Fans enjoy imagining what they would do or choose in nearly all situations regarding players' lives. But, similar to Isaiah Thomas saying "The Secret" to basketball involves the disease of more¹³³ and that it is not actually about basketball,¹³⁴ the secret to the successful fan-player relationship is just that: imagination. Imagining scenarios, situations, and fantasies are what drive fan hood and interest in sports, and instant media has made imagining fans in the players' shoes easier than ever. Fans now have a better understanding of long-term goals in the quest to maximize output: fans cheer for teams to watch and witness championships, greatness, and history.

¹³² I can infer this off of Zach Lowe's "Lights, Cameras, Revolution" piece and my interview with him.

Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

"Interview with Zach Lowe." Interview by author. December 9, 2014.

¹³³ Bill Simmons. *The Book of Basketball: The NBA According to the Sports Guy*. New York: Ballantine/ESPN Books, 2009. 38

¹³⁴ "But it's hard not to be selfish. The art of winning is complicated by statistics, which for us becomes money. Well, you gotta fight that, find a way around that. And I think we have." – Book of Basketball, 38

Chapter Six: The Conclusion

Advanced statistics are great. I love them. They illuminate the game(s) we love. They make us savvier and smarter by attempting to quantify something that previously was not as explicitly quantified. They are not, however, the only thing to consider when analyzing a sport. "Analytics are a tool, just like a jump shot or strength training."¹³⁵ In the context of basketball specifically, there are some very interesting things to consider outside of the realm of advanced statistics.¹³⁶

While more information is becoming increasingly available, technology and big data have really only begun to scratch the surface throughout the entire landscape of basketball. This leads to more questions than answers for where the game is headed, however one thing is crystal clear: technology and big data have and will continue to have a meaningful impact on the sport of basketball, and is here to stay and increase in future years. The game will likely continue to be more and more rationalized, meaning as the numbers indicate, we should see 3-pointers taken at an even higher clip in years to come. Teams may try and get more unconventional in any way possible, if their calculations say it could help them get more wins. By unconventional, I mean anything from playing the way Grinnell does (described in Chapter One) to fouling more at the end of games even while winning, to playing press defense more often and consistently.

¹³⁵ Dollinger, Matt. "Fifty NBA Notes, Quotes and Anecdotes from Sloan Conference." SI.com. March 1, 2015. Accessed March 05, 2015.

¹³⁶ Kevin Ferrigan. "Limits of Advanced Statistics and Accounting for Intangibles." CBS Local Sports. October 15, 2014. Accessed February 10, 2015.

Basketball is no different than any other multi-billion dollar industry: it is ever changing. It is the 10% that we don't yet know, and really don't even know what we don't know yet, that will further the change throughout the game. I believe the next big movement to be on player health and monitors for injury, fatigue, and sleep.¹³⁷ With the investment teams make in players, it only makes sense to try and measure or keep tabs on anything that could increase or affect performance. While it is fun to think of athletes, especially basketball players, as superhuman, through it all, these are humans performing a game for a living. Basketball, and those playing the game, are more than just numbers or computational test-studies. With the rising economics of sports, especially basketball, the higher stakes game it has become, means teams are viewing each player more and more like an asset and with real value in attempt to maximize output from that player. With that, comes gathering and generating more information on health and injuries. With new information and technology, who knows what could arise. Maybe the Bulls' information and testing that will one-day be available, would have shown Derrick Rose to be a poor bet to stay healthy and thus opted not to draft him. Or maybe it can show teams when they are considering signing a Free Agent, that it appears his body is starting to betray him. From the players' perspective, it will be very difficult to get them to sign off on some sort of testing like this. But there would be benefits, such as potentially lengthening their careers as they would have the most advanced prehab and information possible.

¹³⁷ "Interview with Zach Lowe." Interview by author. December 9, 2014.

In describing two all-time great NFL QB's, the NBA's version of John Stockton and Chris Paul, "Of course, the similarities in demeanor between Rodgers and Montana wouldn't matter if the two weren't also similar on the field."¹³⁸ This is paramount and a mantra of all statistics. Intangibles matter, but are not measurable. Nothing is as mathematically important as production while playing. Pushback has indeed emerged. "Old school versus new school," has become the coined phrase. The "old school" mentality and comments begin with "What about leadership? How do you quantify that?"¹³⁹ They say not everything can be calculated.

"Critics of sabermetrics (baseball's term for advanced statistics) often focus on the inability of quantitative approaches to determine the value of real or imagined parts of the game like leadership, chemistry, team dynamics and the like. These aspects of the game are often overstated and generally hard to measure, but that does not mean they are not real."¹⁴⁰

The dichotomy between these two schools of thought certainly exists. While obviously, calling those insistent on intangibles "old school" and those interested solely in the advanced statistics "new school," creates a ridiculous simplification. There can be a middle ground, or a space where those objectively looking at just the numbers do realize that it is a team game and players' emotions and ability to inspire and lead others does in fact play a role. Just like how life is not always black

¹³⁸ Chris Brown. "Creating the New Joe Cool." Grantland. January 07, 2015. Accessed February 11, 2015

¹³⁹ Kevin Ferrigan. "Limits of Advanced Statistics and Accounting for Intangibles." CBS Local Sports. October 15, 2014. Accessed February 10, 2015.

¹⁴⁰ Lincoln Mitchell. "Can Baseball's Intangibles Be Measured." The Huffington Post. March 7, 2014. Accessed February 21, 2015.

and white, neither are advanced statistics, their supporters and those who do not “believe” in them.

“Quantifying these so-called intangibles will not be easy, but it is the next major challenge facing sabermetrics. Measuring individual leadership or ability to be a quality teammates and team chemistry are separate but related problems. In both cases, the problem lies in measuring something that is largely a subjective perception. In the current environment, leadership skills and team chemistry are both, for the most part, only as real and significant as teammates and managers think they are. Additionally, both are heavily informed by tautological thinking. Teams that win are thought, inevitably, to have good chemistry.”¹⁴¹

Additionally, pushback regarding technology and big data have to do with its larger-scale and macro effects on the game. The prevailing thought in some circles still remains that teams can survive just fine without this technology and new data and information. Their thought process revolves around monetary value. Some owners simply are not willing to spend big money when they think the net difference is negligible, that it is the players who win anyways. That having the best players, and the most stars is what wins basketball games and ultimately championships. Remember, all this new information is used in an attempt with one goal in mind: to win more games, and ultimately, a championship.

Analytics can absolutely help, especially when it comes to finding niche talent that can be undervalued, impactful, and help make a difference.¹⁴² It is very easy to sit here and say teams should spend countless dollars on analytics, but we don’t really know exactly what the reward is. People still try and nickel and dime the

¹⁴¹ Lincoln Mitchell. "Can Baseball's Intangibles Be Measured." The Huffington Post. March 7, 2014. Accessed February 21, 2015.

¹⁴² "Interview with Zach Lowe." Interview by author. December 9, 2014.

position. Everyone wants to spend money on medical, some more than others, but everyone will spend what it takes for injury prevention and attention. For analytics, it's fair to say, do we really get a bang for their buck if at the end of the day the teams with the best players still win.¹⁴³ The analytics team agrees that most of the new knowledge will be along the margins — that coaches league wide get most of the big, systematic things right — but that the analytics will nonetheless offer more in the way of new discoveries that might contradict what we think we know.¹⁴⁴ The NBA is a star-driven league where multiple stars are required to win a championship.¹⁴⁵ Acquiring superstars is something no statistic can alter. The best players win.

Basketball is becoming increasingly rationalized with every little unit becoming measurable. Information is constantly changing and new data emerging, which is similar to how resources and potential power have and will continue to shift with the information era. Coaches are power hungry. “There’s no concrete

¹⁴³ "Interview with Zach Lowe." Interview by author. December 9, 2014.

¹⁴⁴ Zach Lowe. "Lights, Cameras, Revolution." Grantland. March 19, 2013. Accessed January 05, 2015.

¹⁴⁵ In descending order of past winners with at least two stars: The 2003, 2005, 2007, and 2014 San Antonio Spurs have had Big Tim Duncan, Tony Parker and Manu Ginobili. The 2012 and 2013 Miami Heat have had LeBron James, Dwyane Wade, and Chris Bosh. The 2009 and 2010 Los Angeles Lakers had Kobe Bryant, Pau Gasol, and Andrew Bynum. The 2008 Boston Celtics had Kevin Garnett, Ray Allen, and Paul Pierce. The 2006 Miami Heat had Shaquille O'Neal and Dwyane Wade. The 2000, 2001, and 2002 Lakers had O'Neal and Bryant. The 1999 Spurs had Duncan and David Robinson. The 1991, 1992, 1993 1996, 1997, and 1998 Chicago Bulls had Michael Jordan and Scottie Pippen. The 1995 Houston Rockets had Hakeem Olajuwon and Clyde Drexler. The 1989 and 1990 Detroit Pistons, the “Bad Boys,” had Isiah Thomas, Joe Dumars, and Bill Laimbeer. The 1980's were dominated by the Lakers and Celtics, featuring Kareem Abdul-Jabbar, Magic Johnson, James Worthy, Larry Bird, Kevin McHale, and Robert Parrish. And the 1983 Philadelphia 76ers had Julius Erving and Moses Malone.

evidence that they (coaches) make a genuine, consistent difference except for a small handful of gifted leaders (Pat Riley, Gregg Popovich, Phil Jackson, Chuck Daly, Larry Brown, Jerry Sloan) and forward thinkers (Mike D'Antoni, Don Nelson, Jack Ramsay). Plenty of coaches understand The Secret; only a few can pass it along to players; even fewer can keep The Secret thriving with any type of roster. All of this information and data gives players and their agents more power; they know more about the stats teams care about and are willing to pay, and with this increase in information and newer statistical categories, agents have more opportunities to spin stats in their players favor.

With the games increased rationalization, small evolutions will continue to emerge. Rule changes like the hand-check will evolve, and a potential conversation will develop about whether to extend the corner of the 3-point line to the same distance all the way around the arc.¹⁴⁶ It would not shock me if discussion emerged at some point over time regarding a 4-point shot. Changes in the NBA are embedded in larger scale societal issues and examples. One can see the game of basketball just like the stock market. Trying to make changes and find undervalued assets and market inefficiencies before other teams or companies. With this in mind, it is understandable that there is no team-by-team collaboration on advanced statistics, technology, and analytics. Some of the best information will be kept private by teams' internal analytics staff and department. Obviously, the best way to

¹⁴⁶ Newer discourse on the corner 3 involves whether teams shoot better from the corners, in addition to it being closer, because it is a shot that is taken only when open. No one is creating shots for themselves in the corner of the court by the 3-point line.

"Interview with Zach Lowe." Interview by author. December 9, 2014.

advance knowledge is by having everyone working together and critiquing each other but that's just not happening and is the nature of any competitive business. Goldman Sachs and Morgan Stanley are not sharing their secrets and algorithms, why would the NBA be any different?¹⁴⁷

Jump on advanced statistics while you can, because they are only going to continue to get more sophisticated, more relevant, and better at measuring various skills throughout the game of basketball.

"The NBA is experiencing a boom in popularity, and millions of fans are obsessed with learning about the game and studying everything there is to know about their favorite players. Unfortunately, even if you examine all of the stats, it's hard to appreciate greatness on both ends of the floor (defense being less measurable than offense); hopefully new research will start to change that."¹⁴⁸

Research to help calculate and quantify how to help teams win games. In an attempt to maximize efficiency and optimization, basketball is a game that continues to change and evolve.

"The way to improve the way you perform is to improve the way you train."¹⁴⁹

¹⁴⁷ "Interview with Zach Lowe." Interview by author. December 9, 2014.

¹⁴⁸ Kirk Goldsberry. "Department of Defense." Grantland. February 24, 2015. Accessed March 1, 2015.

¹⁴⁹ James Surowiecki. "Better All The Time." *The New Yorker*, November 10, 2014. Accessed December 26, 2014.

Closing Thoughts:

My goal was to write a thesis as something I can fondly look back upon as an undergraduate student. It has helped me learn how to think, plan, and execute. Technology and basketball in search to maximize efficiency and optimization can be seen as a microcosm for many other aspects of society. Technology is reshaping our every day lives and changing our relationships to sports and entertainment while simultaneously changing how those two work in relation to one another. Optimization and efficiency are also something I want to strive to maximize as a future coach. The significance and scope is the why of my project. I am passionate about it. Sports are a window into the rest of the world, and in particular, my world.

I spent a lot of time researching, reading, and learning about big data and the technologies and their intricacies throughout basketball and the quantification and rationalization of the game with the end goal of bolstering my basketball knowledge and understanding as an aspiring coach. My intentions were to turn an assignment of this magnitude into something that I could make relatable and simplify. I wanted to write a thesis through long-form journalistic styling by way of various chapters. The goal was to look at each chapter as its own proverbial article.

I believe big data, technology, analytics, or any other buzzword or cute catchy-phrase to describe the new information that has and will continue to come about, has helped and furthered the game of basketball. By furthered, I mean coming to grips with the fact that basketball is not much different than the rest of society: it is in constant search for maximum efficiency and optimization. This changes how the game is constructed and played, and I actually think it has become

more enjoyable. “Not sure what I find more odd, people who think a magical supreme being is guiding their lives, or those unaware that math actually does.”¹⁵⁰ Math is the driving force behind all this, and will continue to make basketball more efficient, and the newer technologies will continue to make it more enjoyable.

Who knows what changes will happen to the game next, and that is part of what makes the game so fun. The unknown factor. The “it” factor. Every time I tune in to watch LeBron James play, I know there is a chance I see history. That unknown is part of what drives my interest in the game as a fan, and part of what drives my interest in the particulars of the game as an aspiring coach and basketball junkie.

Getting better is a never-ending process; improving the way we look at and analyze information is no different. Analytics has enhanced our lives. My philosophy as an aspiring coach will be similar. I will have to be open to change, and never stop learning. I will want to engage all the potential data, information and technology into my program and team as possible. As a coach, I will encourage 3-point shots while simultaneously discouraging long 2-point jump shots. Why? Because simply, the math dictates that even at less odds of making the 3-pointer, the expected point value for that 3-point shot is significantly higher than a long 2-point jump shot. I want to be a successful coach who emerges from the instant media era and is risk-friendly. Not afraid to take risks and be unconventional with strategy, especially late game fouling strategies. I want to maximize resources and be creative. University of Nebraska Head Coach Tim Miles always tweets at halftime

¹⁵⁰ Haralabos Voulgaris. *Twitter*. January 10, 2015. Tweet

either about the half that was just completed or what the team needs to do in the second half for all of his followers to read.

I don't believe my thesis necessarily answered any one question. I don't believe that I sought out to do that, nor is any one work on this topic, or these topics, the be-all end-all. These topics are constantly evolving and changing. The topic is so new. There is so much information that we don't know yet, so much that we don't have access to, and so much that we do not even know that we don't know. In fact, I would be better off in terms of providing more relevant information if I wrote about what we don't know than what I produced and wrote. It is what it is. This project was life changing for me. To work on a topic like this, that I enjoyed, and to spend the amount of time I did is invaluable. I set out to achieve a goal, and that is exactly what I did.

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