

REMAPPING AND VISUALIZING BASEBALL LABOR:
A DIGITAL HUMANITIES PROJECT

by

Katherine Elizabeth Walden

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of the requirements for the Doctor of Philosophy
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Thesis Supervisors: Associate Professor Thomas P. Oates
Assistant Professor Lindsay K. Mattock

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“I thank Christ Jesus our Lord, who has given me strength, that he considered me trustworthy, appointing me to His service...The grace of our Lord was poured out on me abundantly, along with the faith and love that are in Christ Jesus...Now to the King eternal, immortal, invisible, the only God, be honor and glory for ever and ever. Amen.” (1 Timothy 1:12-17)

“For all the great things baseball is, there are some things it is absolutely not. And that is what this story is about.”

Dirk Hayhurst

The Bullpen Gospels: Major League Dreams of a Minor League Veteran

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A passion for all things baseball probably started one hot St. Louis summer when the city held its breath during every Mark McGwire at-bat. But it grew roots and flourished during the hours, innings, and years spent splitting my time between Vanderbilt University's Blair School of Music and Hawkins Field. Only the warmest regards for the Musicology and Ethnomusicology faculty (Jim Lovensheimer, Melanie Lowe, Joy Calico, James Maiello, and Doug Shadle) who challenged my thinking and writing, modeled compelling teaching and research, and gave me a foundation for the critical interdisciplinary inquiry that's been a central part of my growth as a scholar and teacher. This dissertation, and the larger arc of my research agenda, started with idea of studying music tourism and professional baseball. I owe a debt of gratitude to Senior Lecturer Robbie Fry for providing top-notch mentoring and professional development support and directing the thesis project that launched my fascination with Minor League Baseball. That fascination took root in the hours spent at Vanderbilt baseball games and Minor League games across the southeastern U.S. I'm profoundly grateful to the players, coaches, fans (Mike, Dave, and the Section K gang), and front-office staff who made it possible for me to gain a deep appreciation for the game as played outside the Major League limelight. Go Dores, and #VandyBoys for life.

A Bachelor of Music degree candidate was probably not the most logical fit for an American Studies-Sport Studies PhD program, and I remember vividly the bench I fell onto after receiving a fully-funded offer from the University of Iowa's program. I've been privileged to walk through graduate school with a community of mentors and colleagues (Susan Birrell, Tina Parratt, Travis Vogan, Laura Rigal, Laura Kastens, Lauren Rabinovitz, Diane Williams, Diann Rosza, James Oudenhaven, Cathryn Lucas, Matt Hodler, Eileen Narcotta-Welp, Dain TePoel,

Chris Henderson, Taylor Henry, and others) who share an interest in critical approaches to sport and U.S. culture more broadly. I'm honored to be part of the program's legacy of critical feminist scholarship and grateful to be part of an intellectual community that is equal parts generative and empowering.

I knew I wanted interdisciplinarity to be part of my graduate training, and the range of courses I took in the American Studies, Sport Studies, GWSS, Communication Studies, History, and Journalism/Mass Communication Departments confirmed that hunch. Huzzah for true interdisciplinarity, even if the semester of three critical theory seminars made my brain hurt. Special thanks to Susan Stanfield and Gigi Durham whose examples of collaborative, student-first approaches to the graduate seminar were transformative experiences.

I also knew growing as a teacher of college students was going to be part of my graduate training. Three wonderfully generative years spent teaching the Department of Rhetoric's general education curriculum fostered an interest in critical digital pedagogy and digital scholarship more broadly. I guess I'm saying my professional trajectory is largely your fault, and y'all should wear it like a badge of honor. I continue (often on a daily basis) to be profoundly grateful I started my graduate teaching career in a community of colleagues and mentors (Megan Knight, David Gooblar, Matt Gilchrist, Perry Howell, Katherine Ostdiek, Anna Williams, Kate Nesbitt, and so many others) wholly dedicated to effective, radical pedagogy. Thank you for grounding me in the literature, training me to examine my practices, and giving me the tools to experiment and iterate with students. Plus y'all let me design my own course and teach Sport Rhetoric for two years, which was pretty great.

A desire for formal digital coursework to support the digital assignments I was giving students led me to the School of Library and Information Science, which was then home to the

Graduate Certificate in Public Digital Humanities. One semester of DH Theory and Practice later, and I was hooked. Finding my way to the SLIS hallway on the Main Library's third floor remains one of my graduate career's most fortuitous moments of serendipity. Again, everything that's happened since is your fault, in the best possible way.

The DH Certificate grew into a full-fledged second MA in Library and Information Science, because conventional wisdom absolutely recommends adding a second professional degree program while taking comprehensive exams and starting a dissertation. I've had a few key moments in my academic and professional life when I realize I'm enjoying something I'm also good at, and I've learned to pay attention to those moments. My time in the SLIS program was one of those moments. Who knew you could think critically about information, learn technical skills, and be part of a generally awesome librarian community. The fierce cadre of library school + digital humanist colleagues and mentors (Katie Hassman, Janalyn Moss, Stephanie Blalock, Amy Chen, Colleen Theisen, Judith Pascoe, David McCartney, Kären Mason, Janet Weaver, Sarah Bond, Rebekah Walker, Annie Tunnicliff, Amanda Jenkins, Mary Wise, Brady Krien, Aiden Bettine, Kara Logsdon, Katie Buehner, Julian Vamanu, Duncan Stewart, and SO MANY OTHERS) have been instrumental in honing my DH chops, modeling meaningful collaboration, and equipping me to pursue an academic professional future that I couldn't have imagined at the start of grad school.

My path through grad school took a few internship and fellowship turns. Being a Library Research Intern at the National Baseball Hall of Fame and Museum in Cooperstown meant having the baseball summer of a lifetime in the name of research and professional development. Sincere thanks to the Frank and Peggy Steele Internship Program for Youth Leadership Development (and the always awesome reference librarian Cassidy Lent) for the opportunity to

spend a summer immersed in baseball primary source materials, surrounded by people who love baseball as much as I do (#SteeleCurtain).

A reference question I fielded during the Cooperstown internship turned into a fellowship at the Library of Congress the following summer. Bringing my academic world full circle, I spent ten weeks in the Music Division of our national library, working to build the definitive list of baseball-related print music. *[Yes, I spent an entire summer on a baseball music scavenger hunt at the Library of Congress.]* I owe a debt of gratitude to Susan Clermont, Robin Rausch, the Library's Junior Fellowship program (Kaleena Black and her team), as well as the incredible colleagues and mentors I worked with over that summer. I didn't fully realize it at the time, but that fellowship was a crash course in meaningful collaboration, effective project management, thorough metadata, and data wrangling. Messy data isn't so scary after you've stared down a spreadsheet of 2,000 thematic print music records.

An international job search ended just sixty five miles from the University of Iowa at Grinnell. To paraphrase Leslie Knope quoting Teddy Roosevelt, I've found my team, and we get to work hard at work worth doing. I'm grateful for colleagues (Liz Rodrigues, Sarah Purcell, Carolyn Lewis, Mo Pelzel, Erik Simpson, our Vivero Digital Scholarship Fellows, and many others) who've supported me professionally and personally while finishing the dissertation and working full time. May we all continue to be feminist killjoys.

All dissertations are hard, but ones that advocate for a more expanded definition of what counts as scholarship present additional challenges. A huge thanks to the awesome folks on my committee (Tom Oates, Lindsay Mattock, Jennifer Sterling, Deborah Whaley, and Darrel Wanzer-Serrano) for hanging in there, fielding questions, and navigating bureaucracy.

- Tom and Lindsay, thanks for being willing to take on the unexpected and supporting me and the project every step of the way. The scope, definition, and interdisciplinarity of the project are a credit to your effective co-directing.
- Jen—thank you for being a sounding board and helping position this project at the intersection of digital studies and sport studies.
- Deborah—thank you for being a tireless advocate for alternative forms of scholarship, digital approaches, and graduate students within the department and on campus.
- Darrel—thank you for helping me find my academic voice and creating a space where I could explore what it might look like to bring together my digital and disciplinary interests. Echoes of your feedback on my writing are now part of my own internal editorial voice.
- Laura Kastens, the phantom member of all American Studies committees—thank you for graciously handling schedule wrangling, dual degree paperwork, and all the other adventures in academic bureaucracy.

Turns out the challenges that come with dissertations that advocate for expanded definitions of scholarship involve collaborators beyond the core committee. More moving parts = more people. From Heidi Arbisi-Kelm and Erin Kaufman in the Graduate College to Paul Soderdahl, Wendy Robertson, and Daniel Johnson in the Libraries, digital dissertation projects truly do take a village. I'm grateful to be part of an all-star lineup at the University of Iowa that's ahead of the game in supporting graduate students who want to take on new types of dissertation projects. The Digital Studio for Scholarship and Publishing made it possible for me to access the data used in the project, and Nikki White and Rob Shephard have been significant collaborators on the data analysis and visualization portions of the project from its earliest stages.

National data suggests we need to have a meaningful conversation about graduate education's mental and emotional toll. My experience is no exception, so I'm grateful for the chosen family, steadfast friends, and spiritual community that have been anchors and lifelines, always challenging me to "live by faith in the Son of God, who loved me and gave Himself for me" (Galatians 2:20). Thanks for letting me pull up a chair at your tables, hang out with your families, and cry on your shoulders as we serve Christ together.

ABSTRACT

Recent baseball scholarship has drawn attention to U.S. professional baseball's complex twentieth century labor dynamics and expanding global presence. From debates around desegregation to discussions about the sport's increasingly multicultural identity and global presence, the cultural politics of U.S. professional baseball is connected to the problem of baseball labor. However, most scholars address these topics by focusing on Major League Baseball (MLB), ignoring other teams and leagues—Minor League Baseball (MiLB)—that develop players for Major League teams. Considering Minor League Baseball is critical to understanding the professional game in the United States, since players who populate Major League rosters constitute a fraction of U.S. professional baseball's entire labor force.

As a digital humanities dissertation on baseball labor and globalization, this project uses digital humanities approaches and tools to analyze and visualize a quantitative dataset, exploring how Minor League Baseball relates to and complicates MLB-dominated narratives around globalization and diversity in U.S. professional baseball labor. This project addresses how MiLB demographics and global dimensions shifted over time, as well as how the timeline and movement of foreign-born players through the Minor Leagues differs from their U.S.-born counterparts. This project emphasizes the centrality and necessity of including MiLB data in studies of baseball's labor and ideological significance or cultural meaning, making that argument by drawing on data analysis, visualization, and mapping to address how MiLB labor complicates or supplements existing understandings of the relationship between U.S. professional baseball's global reach and "national pastime" claims.

PUBLIC ABSTRACT

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INTRODUCTION

Introduction

Using a variety of data sources and analysis methods, this dissertation makes a content-based argument about professional baseball labor, framed against a larger backdrop of globalization, power, and representation. Scholars have addressed the problem of professional baseball labor through a variety of scholarly approaches. Literature that speaks to various facets of U.S. professional baseball labor—specifically globalization and desegregation—are key discourses that inform this dissertation. The literature review highlights how existing scholarship on U.S. professional baseball labor regularly overlooks Minor League Baseball (MiLB) as relevant or significant for baseball labor practices. In contrast, my dissertation proceeds from the core belief that Minor League Baseball is a dynamic, crucial site for baseball research and can speak to probative research questions on U.S. professional baseball's labor history, cultural politics, and ideological significance—questions that have previously been addressed by studying Major League Baseball's (MLB) teams and players.

Minor League players constitute nearly ninety percent of the overall U.S. professional labor force. Addressing the cultural significance and politics of U.S. professional baseball requires looking at multiple dimensions of the industry—not just Major League Baseball. By foregrounding or centering Minor League Baseball, this dissertation makes three overarching arguments. First, that considering Minor League Baseball is necessary to fully grasp the nuanced complexities of professional baseball as played in the United States. Second, that treating Minor League Baseball as a principal object of study reveals complex cultural and labor histories that are markedly different from the stories told and arguments made about Major League Baseball. Third, that centering Minor League Baseball structures and laborers brings to the forefront a

body of evidence that provides new insights into U.S. professional baseball's relationship with labor, globalization, and cultural representation.

Even in literature that does mention Minor League Baseball, traditional archival sources yield narratives that focus on specific players, organizations, countries, or regions. Lost in many of these analyses is the core relationships between U.S. professional baseball's labor practices and the sport's global reach.¹ Some texts adopt an encyclopedic approach that fails to consider the full scope or implications of baseball's truly global presence and history alongside U.S. professional baseball's long history of "national pastime" claims.² Other works address specific countries or regions outside the United States.³ Focusing on specific players, places, or periods demonstrates the nuanced complexity in baseball's cultural politics and illustrates how baseball has developed outside the United States and outside the umbrella of U.S. professional baseball.

However, such studies fail to offer the sense of global scale and transnational perspective needed to fully understand how U.S. professional baseball's labor practices have become increasingly global and transnational. An alternate framework and methodology are needed to address the scale of Minor League labor, the impact of changing labor structures and conditions on the larger ecosystem of U.S. professional baseball, and the ways in which globalization has shaped U.S. professional baseball. Such an investigation requires looking at U.S. professional baseball across time and space. This dissertation presents a framework that brings together a

¹ Roberto González Echevarría, *The Pride of Havana: A History of Cuban Baseball* (New York: Oxford University Press, 2001); Rob Ruck, *Raceball: How the Major Leagues Colonized the Black and Latin Game* (Boston, MA: Beacon, 2012).

² Josh Chetwynd, *Baseball in Europe: A Country by Country History* (Jefferson, NC: McFarland, 2008); George Gmelch, *Baseball without Borders: The International Pastime* (Lincoln, NE: University of Nebraska Press, 2006).

³ Robert Obojski, *The Rise of Japanese Baseball Power* (Radnor, PA: Chilton Book Co., 1975); Joseph A. Reaves, *Taking in a Game a History of Baseball in Asia* (Lincoln, NE: University of Nebraska Press, 2004).

large-scale investigation of Minor League Baseball's labor history, the impact of globalization on Minor League labor, and the cultural politics of Minor League Baseball. This dissertation also works to explain the processes keep Minor League labor hidden from mainstream view.

Highlighting the fundamental link between U.S. professional baseball's labor practices and contested ideological terrain, labor historian Daniel Gilbert argues that "In addition to being about labor, baseball—like every sport—is fundamentally about territory. Baseball games involve a number of spatial struggles."⁴ For Gilbert, specific labor practices within U.S. professional baseball are the grounds on which debates around globalization and desegregation are negotiated. "As players in Major League Baseball (MLB) won new power in their industry through collective bargaining, team owners responded by creating more flexible modes of control over the recruitment and development of future generations of athletes...significantly expand[ing] their teams' geographic reach, in search of top players and new fans."⁵ The post-World War II regulation and control of baseball labor have shaped and continue to shape the sport's increasingly global scope and influence, and the cultural politics of U.S. professional baseball, from debates around desegregation to discussions about the sport's increasingly multicultural identity, can be seen as facets or consequences of the sport's labor practices.

Clearly, the problem of baseball labor raises questions and issues relevant to the cultural study of baseball. However, most scholars—including Gilbert—explore these topics by focusing almost exclusively on Major League Baseball. As U.S. professional baseball's labor structures were renegotiated through the second half of the twentieth century, a legal distinction was made between the highest level of U.S. professional baseball—Major League Baseball—and other

⁴ Daniel A. Gilbert, *Expanding the Strike Zone: Baseball in the Age of Free Agency* (Amherst, MA: University of Massachusetts Press, 2013), 3.

⁵ Ibid., 5.

teams that operate as a player development system for Major League teams—Minor League Baseball. Outside the national limelight Major League teams demand, Minor League Baseball has gone from small-town teams populated largely by U.S.-born players to a highly-structured player development system with global reach.⁶ Foregrounding Minor League Baseball is critical to understanding the full scope and history of professional game in the United States. Doing so also points out the various ways in which Minor League labor has remained largely unexamined and hidden from public view.

The University of Central Florida's Institute for Diversity and Ethics in Sport has produced annual reports on diversity in Major League Baseball going back to 2004, and Society of American Baseball Research (SABR) records have tracked Major League demographics going back to 1947. However, no research has substantively addressed the intersection of the history of Minor League Baseball's labor history and the impact of that history on the sport's human laborers.⁷ In the time I have been working on this dissertation, the *Mother Jones* image in Figure 1 is the only published visualization of MiLB data I have located (see also Table 1 and Figure 1). The limited public visualizations of data related to Minor League Baseball players is indicative of a larger theme of marginalized Minor League history and labor. While multiple large-scale

⁶ Arthur T. Johnson, *Minor League Baseball and Local Economic Development* (Urbana, IL: University of Illinois Press, 1995); Rebecca S. Kraus, *Minor League Baseball: Community Building through Hometown Sports* (New York: Haworth Press, 2003); Jon C. Stott, *Minor Leagues, Major Boom: Local Professional Baseball Revitalized* (Jefferson, NC: McFarland & Co., 2004); Neil J. Sullivan, *The Minors: The Struggles and the Triumph of Baseball's Poor Relation from 1876 to the Present* (New York: St. Martin's Press, 1990).

⁷ Richard Lapchick, et al, "The 2017 Racial and Gender Report Card: Major League Baseball," *Institute for Diversity and Ethics in Sport*, <https://web.archive.org/web/20190228180228/https://www.tidesport.org/copy-of-nfl>; Mark Armour and Daniel R. Levitt, "Baseball Demographics, 1947-2012," *Society for American Baseball Research*, <https://web.archive.org/web/20190228180259/https://sabr.org/bioproj/topic/baseball-demographics-1947-2012>.

data analysis and visualization projects have taken up globalization and career trajectory for Major League Baseball players, few projects have substantively considered or incorporated Minor League Baseball.

This dissertation takes up a data-driven critical analysis of the ways macro- and micro-level trends in Minor League Baseball relate to and complicate MLB-dominated narratives around globalization and desegregation in U.S. professional baseball labor. This dissertation presents arguments that address the following questions:

- How have MiLB demographics and global dimensions shifted over time?
- How do foreign-born players' experience and trajectory in the Minor Leagues differ from their U.S.-born counterparts?
- How does an investigation of the MiLB data contradict or complicate existing MLB-dominant narratives and histories?

By taking up these questions in the dissertation, I argue for the centrality and necessity of including Minor League Baseball when studying the sport's labor practices labor and ideological significance through addressing how Minor League labor complicates or supplements existing understandings of the relationship between U.S. professional baseball's global reach and "national pastime" claims.

Section 1: Minor League Labor History

The crux of this dissertation focuses on the post-WWII developments in U.S. professional baseball labor. However, understanding the unique—and often illogical—processes through which Minor League Baseball has developed is necessary to understand its legal standing and position within the larger landscape of U.S. professional baseball. Although desegregation and

globalization would not gain significant momentum until in U.S. professional baseball until after World War II, the structures of power that continue to disenfranchise Minor League players have their roots in U.S. professional baseball's early history. Grounding more recent debates and developments in this early history highlights the intractable structures of power that have impacted professional baseball players writ-large and continue to have a direct impact on the labor conditions of Minor League players.

Specifically, this section of the dissertation presents a labor history of Minor League Baseball through synthesizing qualitative and contextual information from a variety of legal documents, including Collective Bargaining Agreements, Official Rules, court cases, and Congressional record. By connecting those documents with data about teams and players, this section of the dissertation addresses the following research questions:

- How Minor League Baseball came to exist and develop within the larger structure of U.S. professional baseball
- The relevance or significant of Minor League Baseball within the larger structure of U.S. professional baseball, both in terms of numbers of teams and players
- What key developments or events in U.S. professional baseball history have shaped Minor League Baseball labor structures and conditions—and how
- How efforts at labor activism and organizing within U.S. professional baseball have impacted and overlooked Minor League baseball
- How a focus on post-WWII labor activism within Major League Baseball has overlooked Minor League players
- How shifting awareness of Minor League labor in recent years has impacted actual labor conditions

As mentioned previously, scholarship that does address Minor League Baseball often foregrounds a particular team, city, or league, rather than looking at large structures and broad trends. A notable exception is Daniel Gilbert's *Expanding the Strike Zone: Baseball in the Age of Free Agency*, which looks at the larger scope of U.S. professional baseball to argue that "significant transformations in the structure of both work and territory in the baseball world" combined with "players in Major League Baseball [who] won new power in their industry through collective bargaining" resulted in "more flexible modes of control over the recruitment and development of future generations of athletes."⁸ This dissertation takes up that framework to address the nuanced ways in which Minor League players have been impacted by larger structures of power in U.S. professional baseball, arguing the erasure of Minor League labor overlooks a significant portion—in fact the majority—of U.S. professional baseball labor.

Section 2: Minor League Labor and Globalization

This section of the dissertation uses spatial analysis and spatial data visualization to illuminate the ways macro- and micro-level trends in Minor League Baseball relate to and complicate MLB-dominated narratives around globalization in U.S. professional baseball labor. Using records from Baseball Reference's website (run by Sport Reference, LLC), this section examines how individual players have moved through the Minor League system from the 1960s though the present. While the University of Central Florida's Institute for Diversity and Ethics in Sport has produced annual reports on diversity in Major League Baseball (MLB) going back to 2004 (see Table 1), and Society of American Baseball Research (SABR) records have tracked MLB demographics going back to 1947 (see Figure 1), no research has substantively

⁸ Gilbert, 5.

interrogated how foreign-born players move through Minor League Baseball's professional development system.⁹

Important emerging research frames U.S. professional baseball's global or transnational reach as an aspect of the sport's corporate structures and labor practices, as well as cultural politics. For example, Robert Elias' *The Empire Strikes Out: How Baseball Sold U.S. Foreign Policy and Promoted the American Way Abroad* looks at the longer history of U.S. professional baseball's global presence, going back to late-nineteenth century world tours, and traces the intersection of U.S. foreign policy and the cultural politics of U.S. professional baseball's global presence.¹⁰ Another significant work informing this dissertation is Daniel Gilbert's *Expanding the Strike Zone: Baseball in the Age of Free Agency*, which links the post-World War II development of free agency in U.S. professional baseball with the sport's increasingly global reach.¹¹ Of particular relevance, both texts frame desegregation and globalization in U.S. professional baseball as aspects of the sport's labor practices. However, studies that take up this framework rarely consider Minor League Baseball at-length. Centering Minor League Baseball in this global framework emphasizes the connection between U.S. professional baseball as a global business and the actual movement of human laborers across national boundaries.

While Rob Ruck's *Raceball: How Major League Baseball Colonized the Black and Latin Game* focuses on Major League Baseball's relationship to other professional baseball organizations (i.e. professional leagues in Latin American countries and Negro League

⁹ Mark Armour and Daniel R. Levitt, "Baseball Demographics, 1947-2012," *Society for American Baseball Research*, n.d., <https://web.archive.org/web/20190228180259/https://sabr.org/bioproj/topic/baseball-demographics-1947-2012>.

¹⁰ Robert Elias, *The Empire Strikes Out: How Baseball Sold U.S. Foreign Policy and Promoted the American Way Abroad* (New York: The New Press, 2010).

¹¹ Gilbert.

organizations in the U.S.), Adrian Burgos' *Playing America's Game: Baseball, Latinos, and the Color Line* focuses on the experiences of Latin American or Latino-identified players in U.S. professional baseball.¹² Along with a range of histories on desegregation and the Negro League, these texts focus almost entirely on Major League Baseball in their framing of U.S. professional baseball labor. Minor League Baseball—if mentioned at all—is touched on only briefly, and few texts seriously consider Minor League Baseball's importance and relevance.

What is lost in many of these analyses is the core intersection of U.S. professional baseball's labor practices and the sport's global reach.¹³ Focusing on specific players, regions, or periods demonstrates the nuanced complexity in baseball's cultural politics and illustrates how baseball has developed outside the United States (and outside the umbrella of U.S. professional baseball). But, such studies fail to offer a sense of transnational perspective and scale, particularly as U.S. professional baseball's labor practices become increasingly global or transnational. This dissertation seeks to consider the implications of U.S. professional baseball's truly global presence and the sport's long history of “national pastime” claims.

Existing American Studies scholarship offers approaches that examine how U.S. history is fundamentally linked with the nation's position in a larger global community.¹⁴ Informed by those American Studies frameworks, this dissertation argues that Minor League Baseball is a dynamic, transnational site that can challenge static notions of a “national” pastime. Informed by

¹² Adrian Burgos, *Playing America's Game: Baseball, Latinos, and the Color Line* (Berkeley, CA: University of California Press, 2007); Ruck, *Raceball: How the Major Leagues Colonized the Black and Latin Game*.

¹³ González Echevarría; Ruck, *The Tropic of Baseball: Baseball in the Dominican Republic*; Obojski; Reaves; Chetwynd; Gmelch

¹⁴ Amy Kaplan, *The Anarchy of Empire in the Making of U.S. Culture* (Cambridge, MA: Harvard University Press, 2005); Ann Laura Stoler, *Along the Archival Grain: Thinking through Colonial Ontologies* (Princeton, NJ: Princeton University Press, 2009); Amy Kaplan and Donald E. Pease, eds., *Cultures of U.S. Imperialism* (Durham, NC: Duke University Press, 1994), 34.

the work of Kaplan, Pease, and others, this dissertation proceeds from the core belief that the colonial power structures and ideologies at work in U.S. history have been similarly present in U.S. professional baseball history. Through analyzing and visualizing player birthplaces, team locations, and player movement over time, this section of the dissertation makes the following arguments. First, that Minor League Baseball is a dynamic, central site where globalization in U.S. professional baseball labor has manifested. Second, that Minor League structures have developed in ways that facilitate giving U.S. professional baseball a distinctly global presence in its player development and recruitment efforts. Third, that despite the drastic demographic shifts that have taken place in the Minor Leagues since 1960, Major League demographics have not also changed to reflect that underlying transformation in the composition of Minor League teams and players.

Section 3: Minor League Labor and Cultural Representation

The first two major interventions of this dissertation focused on making visible the labor structures, practices, and history have shaped Minor League Baseball, using alternate data sources, methodologies, and modes of inquiry. This section of the dissertation addresses another aspect of baseball labor—promotion, marketing, and branding systems. By considering the alternate cultural domains made available and visible by digital technologies, this section of the dissertation analyzes the meanings those digital production spaces communicate about U.S. professional baseball’s social, cultural, and political significance.

While fantasy baseball and baseball-related video games are manifestations of that trend, social media platforms have also emerged as critical sites where the labor of cultural production takes place. This section of the dissertation examines cultural production and representation in

the digital content created by and for communities affiliated with U.S. professional baseball. The arguments presented elsewhere in the dissertation focus on the development and globalization of Minor League Baseball. The third section builds on that foundation to look at the branded content professional teams produce about themselves, and how Minor League players are challenging those dominant messages by using those same production mechanisms to present alternate perspectives on the Minor League experience.

Data as Rhetoric, Argument, and “Fact”

Data and the Digital Humanities

This dissertation proceeds from the core belief that computational tools, data analysis, and data visualization are methods that are useful for qualitative interdisciplinary research questions. A rich body of scholarship that argues digital technologies can inform, shape, and offer meaningful contributions to humanities scholarship. As Schnapp and Presner argue in their “Digital Humanities Manifesto 2.0,” digital tools and resources can address core humanities methodological commitments like “attention to complexity, medium specificity, historical context, analytical depth, critique and interpretation.”¹⁵ In a moment when the sheer volume of available primary sources (textual or non-textual) overwhelms the capacity of traditional humanities methods, digital methods provide ways to engage with these sources, and animate that information in meaningful ways that would not be possible or easily accessible through traditional models for engaging sources.

¹⁵ Jeffrey Schanpp et al., "Digital Humanities Manifesto 2.0," *Multitudes* 59, no. 2 (2015). <https://doi.org/10.3917/mult.059.0181>.

Lisa Gitelman, Bethany Nowviskie, Safiya Noble, and others have argued that the deluge of data forms and sources that are often unquestioned aspects of a digital world are themselves dynamic, fruitful objects of study and sites of inquiry.¹⁶ Even before the recent scholarly turn toward critical digital studies, library and information science offers a robust body of literature that argues the process of structuring, curating, and organizing data—even before analysis and visualization stages—is itself a form of intellectual labor that requires critical reflection on the provenance, context, and meaning of a particular data form. As Bowker and Star, and later Lampland and Star, have demonstrated in edited collections, how scholarship in any field—including digital scholarship—takes up the task of organizing its source material for analysis and interpretation represents a significant scholarly labor and contribution.¹⁷

Baseball and Data

The core dataset for this project includes both biographical and transactional information about the players who have played U.S. professional baseball, covering the 1960 through 2017 professional seasons. As indicated by substantive fan interest in fantasy baseball and advanced statistical analysis of baseball metrics, the numbers associated with baseball have been and continue to be objects of fascination and significant meaning. The *New York Times'* Alan Schwarz wrote in 2006, “Like no other corner of American popular culture, baseball communicates in numbers.”¹⁸ As early as the 1860s, baseball’s promotional figures and cultural

¹⁶ Lisa Gitelman, ed., *"Raw Data" Is an Oxymoron*, Infrastructures (Cambridge, MA: MIT Press, 2013); Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York: New York University Press, 2018).

¹⁷ Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 2008); Martha Lampland and Susan Leigh Star, eds., *Standards and Their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life* (Ithaca, NY: Cornell University Press, 2009).

¹⁸ Alan Schwarz, “Baseball Is a Game of Numbers, but Whose Numbers Are They?” *New York Times* (16 May 2006).

leaders—figures like Henry Chadwick and Albert Spaulding—worked extensively to give numbers associated with baseball heightened significance and meaning.

That trend continued through the twentieth century. As Mitchell Nathanson writes, the increasing professionalization within Major League Baseball combined with the sport's growing cultural significance to create a climate in which baseball numbers and data continue to be sites of contestation and ideological significance.¹⁹ Today's baseball numbers have moved far beyond the frameworks and rhetorics used in the sport's early days. New forms of coaching and team management exist alongside new media and marketing strategies. However, these structures continue to reinforce the heightened meaning and significance assigned to baseball numbers.

The early days of organized professional baseball in the U.S. involved debates around how performance metrics and competitive statistics would be defined and calculated. But, the sport's growth as a national phenomenon in the early twentieth century made baseball numbers and data objects of national conversation. From box scores printed in newspapers to performance awards for players, numbers governed most aspects of baseball's cultural significance, including the vote counts used to determine which players would be elected to the National Baseball Hall of Fame. Even before advanced analytics and data science approaches became ubiquitous across the professional baseball landscape, players, teams, coaches, and scouts used a variety of means to record, analyze, and visualize baseball data. From scouting reports that quantified various aspects of a player's performance to color-coded hitting charts generated by hand, the primary

<https://web.archive.org/web/20190228180407/https://www.nytimes.com/2006/05/16/sports/baseball/16license.html>.

¹⁹ Mitchell Nathanson, *A People's History of Baseball* (Urbana, IL: University of Illinois Press, 2012).

source archive documenting U.S. professional baseball history is rife with data, recorded and preserved in a variety of material forms.²⁰

Baseball fans' enthusiasm for this information led to a distinct subculture and community around baseball data and analytics emerging in the 1980s and 1990s. Publications like *Baseball Analyst* and Bill James' *Statistical Abstract* emerged in the 1990s as a way for interested baseball fans to gather, curate, analyze, and interpret the baseball data teams and organizations had been recording for over a century. Bill James' work creating and publishing the *Bill James Baseball Abstract* and the institutionalization of early fantasy baseball leagues provided visibility for the growing baseball-data aficionado community. Extensive baseball data collection has long been a part of the sport's history, but data-driven decision making was largely absent from baseball's formal labor practices until the 1990s and early 2000s. As Michael Lewis, Keith Law, and other baseball writers have documented, that shift within the fan community eventually garnered the attention of a new generation of professional baseball executives.²¹ Michael Lewis' *Moneyball* provides an in-depth case study of how data-driven decision making and advanced statistical analysis challenged existing philosophies for evaluating and managing baseball labor, which

²⁰ Tony Gwynn Hitting Charts, 1982-1987. BA MSS 96. Created by Whitey Herzog. National Baseball Hall of Fame and Museum, <https://collection.baseballhall.org/PASTIME/tony-gwynn-hitting-charts-1982-1987-0>; Alvin McGrew Scouting Report, 1968. BA MSS 156. Created by Lorenzo Davis. National Baseball Hall of Fame and Museum. <https://collection.baseballhall.org/PASTIME/alvin-mcgrew-scouting-report-1968-may-27>; Pittsburg Diamonds Versus Sonoma Stompers Scorecard, 2016. BA MSS 209. National Baseball Hall of Fame and Museum, <https://collection.baseballhall.org/PASTIME/pittsburg-diamonds-versus-sonoma-stompers-scorecard-2016-july-22-0>; Down On the Farm Minor League Statistical Booklets. BA MSS 300. Created by Willie Runquist. National Baseball Hall of Fame and Museum. <https://collection.baseballhall.org/PASTIME/willie-runquist-minor-league-statistical-booklets>.

²¹ Keith Law, *Smart Baseball: The Story Behind the Old Stats That Are Ruining the Game, the New Ones That Are Running It, and the Right Way to Think About Baseball* (New York: Harper Collins, 2017).

relied on a scout's player experience, personal experience, and subjective judgement to ascertain a player's value.

Baseball data has always been fraught with meaning. As Mitchell Nathanson argues, the backlash to using data and statistics in labor management offers a compelling example of U.S. professional baseball's tendency to rely on tradition in the face of innovation.²² Restricting professional baseball's decision-making practices as accessible only to an "insider community" resisted the larger democratization of fan engagement and participation taking place via the fantasy baseball and sabermetrics fan movements. As data-driven decision making and advanced analytics have become largely ubiquitous within professional baseball organizations, fan interest in baseball data has continued unabated. With internet technology becoming increasingly accessible in the 1990s, the grassroots fan communities of the 1980s evolved into web-based networks.

One of those online communities, the Iowa Farm Report, was managed by Sean Forman, a baseball fan and Iowa native who was at the time a graduate student in mathematics at the University of Iowa.²³ Building on his work with the Iowa Farm Report, Forman launched the Baseball Reference website in 2000, and it quickly became the baseball fan community's go-to data resource. The innovative digital solution provided in Baseball Reference grew into Sports Reference, LLC, "A group of sites providing both basic and sabermetric statistics and resources for sports fans everywhere. Our aim is to be the easiest-to-use, fastest, most complete sources for

²² Nathanson, 205.

²³ Tom Snee, "Baseball statistics website Baseball-Reference.com born at UI," *Iowa Now* (29 March 2017).
<https://web.archive.org/web/20190228180807/https://now.uiowa.edu/2017/03/baseball-statistics-website-baseball-referencecom-born-ui>.

sports statistics anywhere.”²⁴ While a number of other baseball data resources and repositories have emerged since Baseball Reference’s launch, the site remains the leading publicly-available source of baseball data.

Increased public interest in baseball data and fantasy baseball prompted another moment of decision for Major League Baseball’s executive organization. To go along with increased adoption of data-driven decision making and advanced analytics, Major League Baseball founded MLB Advanced Media (MLBAM) in 2000. Owned by the Major League owners, MLBAM started with providing a standardized web presence for Major and Minor League teams and has grown into what *Forbes* described in 2014 as “The Biggest Media Company You’ve Never Heard Of.” MLBAM is responsible for nearly twenty-thousand hours of live sports video streaming and a robust data analytics infrastructure.²⁵

As part of that foray into digital marketing and potential revenue streams, MLBAM negotiated a five-year “interactive rights” deal with the MLBPA in 2005, a deal that gave players’ right to profit off their own digital representation or recreation, as well as ownership and control over professional players’ digital identities, to Major League Baseball’s executive organization. The fantasy sports market continued to grow, while MLBAM ran its own for-profit fantasy leagues and granted multi-million-dollar licenses to major sports media organizations like CBS and ESPN. Those licenses allowed partner fantasy baseball operations to display player likenesses and team logos alongside player names and statistical information.

²⁴ “Sports Reference: Sports Stats, Fast, Easy, and Up-to-Date,” *Sports Reference* (2000-2018). <https://web.archive.org/web/20190224075755/https://www.sports-reference.com/>.

²⁵ Maury Brown, “The Biggest Media Company You’ve Never Heard Of,” *Forbes* (7 July 2014). <https://web.archive.org/web/20190228180930/http://www.forbes.com/>.

The 2005 interactive rights agreement brought to a head growing tensions between MLBAM and smaller fantasy baseball operations. Those smaller operations argued First Amendment protections and information in the public record allowed them to utilize non-commercial forms of player data in for-profit fantasy sport ventures. In short, the informal policy followed by most smaller fantasy sports operators was that players' likenesses and team logos were off limits, but the names of players and their statistical records should be fair game. MLBAM disagreed and used the 2005 agreement to argue that any fantasy baseball operation using player information and data was required to have a licensing agreement with MLBAM.

St. Louis-based CBC Distribution and Marketing Inc. ran a mid-sized fantasy baseball operation and, in 2006, challenged MLBAM's attempts to monopolize the fantasy baseball market. According to CBC's legal team, unlicensed fantasy leagues that were not using player likenesses or team logos were "disseminating information to the public about baseball players no different than what a newspaper does."²⁶ MLBAM's specific objection in the case was rooted in the idea of a fantasy baseball league operation as "a business venture distinct from conventional journalism," but the underlying question of who 'owns' baseball data was central in *C.B.C. Distribution and Marketing, Inc. v. Major League Baseball Advanced Media, L.P.*²⁷ The U.S. District Court for the Eastern District of Missouri, the Eighth Circuit Court of Appeals, and

²⁶ Rudy Telscher quoted in: Alan Schwarz, "Baseball Is a Game of Numbers, but Whose Numbers Are They?" *New York Times* (16 May 2006).

<https://web.archive.org/web/20190228180407/https://www.nytimes.com/2006/05/16/sports/baseball/16license.html>.

²⁷ Ibid.

the U.S. Supreme Court all upheld the initial verdict—that “‘the names and playing records of major-league baseball players...[are] not copyrightable.’”²⁸

The legal framework for publicly-available baseball data remained largely unchallenged after the 2006 CBC lawsuit. But, how baseball data is made available for public consumption via digital platforms raises questions about the audience for and purpose of baseball data, and more broadly baseball data’s contemporary cultural significance. On one hand, the growth and capacity of MLBAM emphasizes the degree to which data analytics as a form of labor management has become an integral part of the U.S. professional baseball landscape. The noticeable growth in data-driven sport journalism and sport data analysis projects also indicate the baseball fan community’s continued interest in data-related projects.

Data and Cultural Representation

The ubiquity of sport data provider services like Baseball Reference and the legal protections that allow them to share sport data operate on the assumption that the data itself is a static object, and the ways in which it is organized and presented are merely questions of user experience and interface design. As Sean Forman stated in a 2016 interview, “‘For me it’s really about the puzzle of figuring out what is the most useful way of presenting this information. Coming up with small touches that make things a lot easier for the user.’”²⁹ In this framework, the decisions and cognitive processes that go into gathering, structuring, and presenting data are

²⁸ *C.B.C. Distribution and Marketing, Inc., Plaintiff/Counter Defendant, Vs. Major League Baseball Advanced Media, L.P., Defendant/Counter Claimant, and Major League Baseball Players' Association, Intervenor/Counter Claimant.*

²⁹ Dan Levy, “Meet the Mt. Airy Guy Behind Baseball Reference, Pro Sports Stats Empire,” *BillyPenn* (11 October 2016). <https://web.archive.org/web/20190228181050/https://billypenn.com/2016/10/11/meet-the-mt-airy-guy-behind-baseball-reference-pro-sports-stats-empire/>.

framed as technical questions and solutions, rather than issues of power, meaning, and representation.

This dissertation makes use of the abundance of baseball-related data generated by sport data providers. Indeed, the arguments this dissertation makes about Minor League Baseball labor would not be visible or discernable without the available underlying data that animates the project. However, as outlined in the preceding section, baseball data (and sport data more broadly) has most often been framed as a relatively neutral measure or record of achievement and performance. This dissertation complicates those frameworks by presenting baseball data as inflected by ideology and produced by human actors.

As Johanna Drucker and others have argued, the process of identifying and declaring discrete information entities constitutes an act of information capture and interpretation.³⁰ Lisa Gitelman's "*Raw Data*" *Is An Oxymoron* edited collection makes a similar point from a variety of disciplinary valences; the notion of data as neutral erases the decisions and intellectual processes used in data collection, organization, and representation.³¹ As Bowker and Starr point out, "not all classifications take formal shape or are standardized in commercial and bureaucratic products," but even for ones that do—like baseball data calculations and measures—Bowker and Starr argue giving increased attention to the structures of power and ideology embedded in

³⁰ Johanna Drucker, "Graphical Approaches to the Digital Humanities," in *A New Companion to Digital Humanities*, ed. Susan Schreibman, Raymond George Siemens, and John Unsworth (Hoboken, NJ: Wiley-Blackwell, 2015).; B. Aragona, "New Data Science: The Sociological Point of View," in *Data Science and Social Research: Epistemology, Methods, Technology and Applications*, ed. N. Carlo Lauro, et al., Studies in Classification, Data Analysis, and Knowledge Organization (New York: Springer, 2017).

³¹ Gitelman.

classification systems can make visible the structures of order and organization that shape information.³²

As Drucker and other feminist critical geographers have argued, accepting visualization and mapping as forms of argumentation (or arguments themselves) fails to recognize or acknowledge “the context of such issues as maps as a medium of power, ontological power of maps and digital representations of place, authorship of maps, what gets to be represented and what is silenced, and what kind of information is conveyed and which is excluded.”³³ Seeing “digital place-making as an outcome of contestation and social power” involves transparency and reflexivity about the scope and limits of digital methodologies.³⁴

As outlined elsewhere in this introduction, the mapping and spatial analysis portions of this dissertation rely on a bespoke dataset. The arguments presented in this dissertation emphasize the capacity of this data for opening up new areas of inquiry. However, this dataset concretizes players as discrete entries in the dataset, and links them with temporally- and spatially-bounded entities. In doing so, the dataset fails to make visible or incorporate more fluid, porous methods of identity formation that work across nation-state boundaries and other classifying structures. The underlying dataset also highlights the colonial structures of power that shape national borders, regional affiliations, and spatial classification systems. The mapping and spatial analysis deployed in this dissertation is predicated on the understanding that geographic labels and reflect a long history of colonial power, deployed in multiple spheres to enforce

³² Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 1999), 1-3.

³³ Marianna Pavlovskaya, "Digital Place-Making: Insights from Critical Cartography and GIS," in *The Digital Arts and Humanities*, ed. Charles Travis and Alexander von Lunen (Switzerland: Springer International Publishing, 2016), 3.

³⁴ Ibid.

material and intellectual authority in ways that foreclose alternate frameworks for defining, understanding, and describing place.

Analyzing globalization by focusing on players' birth places relies on a fixed geographic affiliation that may not represent a player's actual sense of cultural, racial, or ethnic affiliation. As Johanna Drucker argues, "such graphical tools are a kind of intellectual Trojan horse, a vehicle through which assumptions about what constitutes information swarm with potent force."³⁵ For Drucker, visualizations or aggregate representations of data must be seen as a type of knowledge representation and presented in ways that emphasize "the situated, partial, and constitutive character of knowledge production, the recognition that knowledge is constructed, taken, not simply given as a natural representation of pre-existing fact."³⁶ This dissertation endeavors to undertake spatial analysis and visualization ways that reflect Drucker's "new approach" that acknowledges the "interpretive nature of knowledge" and "is conceived to embody qualitative expressions."³⁷

By presenting a history and geography of U.S. professional baseball labor, this project's underlying dataset can seem to offer a totality of representation, the complete narrative about a particular dimension of U.S. professional baseball. Such a perception is an inaccurate interpretation of the arguments made in this dissertation and their scope. Specifically, the dataset used in this project focuses exclusively on players and teams affiliated with Major League Baseball, from the 1960 through 2016 seasons. The pre-WWII history of baseball is not visible in this analysis. Also absent is the wealth of professional and semi-professional teams not affiliated with Major League Baseball—a group that includes teams located within and outside

³⁵ Drucker.

³⁶ Ibid.

³⁷ Ibid.

the U.S. The rich history of amateur, collegiate, and youth baseball are not included in this dataset.

Defining a dataset's scope does not undercut the validity or significance of arguments made using that data. However, specificity about what is being represented in a data-driven analysis is necessary to avoid further erasure of already-marginalized sporting communities. As insightful scholarship has demonstrated, decentering predominantly male, commodified forms of organized sport offers significant contributions and insights to sport history and sport studies.³⁸ More broadly, the scholarship of Lauren Klein, Catherine D'Ignazio, and others models an approach to data analysis and visualization informed by critical cultural studies.³⁹ These frameworks emphasize the need to engage data in ways that rethink binaries, embrace pluralism, examine power and aspire to empowerment, consider context, legitimize embodiment and affect, and make labor visible.⁴⁰

Methods

This dissertation proceeds from the understanding that digital tools and approaches, with their capacity to curate and visualize new primary source archives and highlight new critical

³⁸ Martha H. Verbrugge, *Active Bodies: A History of Women's Physical Education in Twentieth-Century America* (Oxford: Oxford University Press, 2012); Mary Louise Adams, *Artistic Impressions: Figure Skating, Masculinity, and the Limits of Sport* (Toronto: University of Toronto Press, 2011); Susan K. Cahn, *Coming on Strong: Gender and Sexuality in Women's Sport* (Urbana, IL: University of Illinois Press, 2015); Pamela Grundy, *Learning to Win Sports, Education, and Social Change in Twentieth-Century North Carolina* (Chapel Hill, NC: University of North Carolina Press, 2014); Jaime Schultz, *Qualifying Times: Points of Change in U.S. Women's Sport* (Urbana, IL: University of Illinois Press, 2014); *Women's Sports: What Everyone Needs to Know* (Oxford: Oxford University Press, 2018).

³⁹ Catherine D'Ignazio and Lauren F. Klein, "Feminist Data Visualization," in *IEEE* (Baltimore, MD: 2016); *Data Feminism*, Open Knowledge Futures Group (Cambridge, MA: MIT Press, 2019).; Johanna Drucker, "Information Visualization and/as Enunciation," *Journal of Documentation* 73, no. 5 (2017). <https://doi.org/10.1108/JD-01-2017-0004>.

⁴⁰ Drucker, "Information Visualization and/as Enunciation."; D'Ignazio and Klein, "Feminist Data Visualization."; D'Ignazio and Klein, *Data Feminism*.

intersections, are vital for humanities scholarship. As data visualization and computer science scholar Enrico Bertini argues, our understanding of the potential of data analysis and visualization has shifted, as digital technologies and data visualization resources have made it possible to analyze and visualize data in more complex, interactive ways.⁴¹ In Bertini's framework, data analysis can function in three main ways—to inspire, explain, or analyze. Building on Bertini's foundation, this dissertation operates within the framework that data visualization as a form of analysis can itself serve as a form of argumentation, in which “the main goal...is to extract information out of data with the purpose of answering questions and advancing understanding.”⁴² While explanatory visualizations can also be illustrative or serve an evidentiary purpose, those visualizations largely work to confirm what has already been argued elsewhere, or in another medium. In contrast, analytical visualizations work “to understand the data in the first place.”⁴³

Using a variety of data sources and analysis and visualization methods, this dissertation makes a content-based argument about U.S. professional baseball labor’s intersection with globalization, power, and representation. Scholars have addressed the problem of professional baseball labor through a variety of scholarly approaches. Literature that speaks to various facets of U.S. professional baseball labor—specifically globalization and integration—are key discourses that inform this dissertation. The literature review highlights how existing scholarship on U.S. professional baseball labor regularly overlooks Minor League Baseball as relevant or

⁴¹ Enrico Bertini, "From Data Visualization to Interactive Data Analysis," *Medium*, 28 November 2018, <https://web.archive.org/web/20181227214921/https://medium.com/@FILWD/from-data-visualization-to-interactive-data-analysis-e24ae3751bf3>.

⁴² Ibid.

⁴³ Ibid.

significant for baseball labor practices. In contrast, my dissertation proceeds from the core belief that Minor League Baseball is a dynamic, crucial site for baseball research and can speak to probative research questions on U.S. professional baseball's labor history, cultural politics, and ideological significance—questions that have previously been addressed by studying MLB teams and players.

By using digital tools and approaches to make that argument, this dissertation also demonstrates the relevance of digital methods and data analysis for interdisciplinary humanities scholarship. As part of a larger conversation taking place within digital scholarship and digital humanities, this dissertation works to make visible the technological and human structures necessary to undertake large-scale digital scholarship projects. Rather than relegating the labor of organizing, describing, and transcribing to the acknowledgements section, this dissertation builds on a robust body of literature in library and information science to argue those aspects of any scholarly project—in this case a digital project—are themselves a form of intellectual labor and scholarly contribution. Through framing data curation, analysis, and visualization as scholarly activities, this dissertation takes up a truly interdisciplinary DH approach by using an engagement with a quantitative dataset to enrich how scholars understand and perceive connections between labor, power, and ideology in U.S. professional baseball.

Data Sources and Structures

As mentioned previously, the underlying data for this project is gathered from Baseball Reference's online website. However, that data in its standard public-facing form does not facilitate the type of analysis and inquiry undertaken in this project. While the full details of the data wrangling and curation process are addressed in Appendix A's technical whitepaper

document, this section of the introduction briefly outlines the rationale and key decisions for the data that is the foundation of this project.

As shown in Figures 2-7, information about player birthplaces and dates does not exist publicly in tabular form. This structure prevents an aggregate analysis of player biographical information, since the data about player birthplaces is not connected with the data about their playing careers and transactions. Additionally, the playing transaction information included on a specific player's page does not include relevant descriptive information about teams that player played for. Details like classification level and team location are also needed to facilitate in-depth analysis of aggregate data trends (see Figures 2-5). Other site pages include roster information about a specific professional team in a specific season and do connect player birthplaces with the record of a specific team's roster (see Figures 6-7). However, the team-level data is isolated on season-specific pages, making it difficult to analyze change over time across teams and seasons. Additionally, the team-level data does not include additional relevant information like the team location and classification level, preventing or inhibiting an analysis of large-scale aggregate trends and change over time. While the data that supports this project is publicly available, it is not publicly available or accessible in a way that allows the type of large-scale analysis undertaken in this project.

Initially, data collection was done manually, copying and pasting online data into Excel and reformatting to enable cross-table links resembling a database structure (see Figures 8-9). Additionally, initial efforts were made by the University of Iowa's Digital Studio for Scholarship and Publishing toward developing a web crawling script that would automate the one data scraping, given the potential for error and the amount of time and labor necessary to manually collect the online data. However, a closer inspection of Sports Reference LLC's terms and

conditions (see Appendix B) raised a number of questions about the legality of manually gathering the data or using an automated scraping method to compile the data. At this point, no further attempt was made to automate data gathering or gather the data manually until Baseball Reference, Sports Reference LLC, and Hidden Game Sports (third party data licensor and host) had been contacted to clarify the terms of use and gain permission to use the data for this project.

Given the fragmented and unconnected way much of the data used in this project lives online, collecting or gathering it manually would have been a time and labor intensive process, delaying the overall progress of the project. Given the time and labor necessary to gather the data manually, the Digital Studio (and I) were interested in procuring a bespoke dataset customized to include the data points related to this project's research questions.

Original efforts to gather the data manually focused on the aspects of facets of the data needed to respond to the project's research questions, specifically player places and dates of birth, teams played for, team classifications and affiliations, and team locations. Initial efforts to gather this data manually utilized data structure outlined in Figures 8 and 9. However, once the decision was made to move away from manual or automated data collection toward a bespoke licensed dataset, this original structure was abandoned, given the limited feasibility of significantly restructuring the licensed dataset. After reaching a licensing agreement with Hidden Game (documented in Appendix C), the licensed dataset was delivered via email as a zipped folder with CSV three CSV files—Playing, Locations, and Affiliations. The data included in those three CSV files included the elements and structure illustrated in Appendix D.

In the original data formation, there were multiple data redundancies, first with player biographical information being duplicated in the “Playing” table to correlate with multiple transaction records for specific players. Additionally, the “Locations” table includes location

information for Major and Minor League Teams, but other relevant locations—specifically player birthplaces—are located elsewhere in the table data structure. A crucial needed piece of information—a unique identifiers for teams—is not included in the original dataset, and the affiliation level information is included in “Playing” table. See Figure 10 for a relational schema (RS) for the original data.

While redundancies in the player biographical information had been removed, information about teams, affiliations, classifications, and team locations was not logically organized within the data-table structure. While the licensed data as originally delivered included the data points needed for the research questions undertaken in this project, the data did not exist in a structure or organized form that allowed or made possible the type of inquiry central to this project. While the primary motivation for many of these manipulations or restructurings was an attempt to wrangle or mash the data into a structure that could be imported into a database, or at least allow for coherent cross-table connections, it is important to remember that manipulations of data or reconfiguring of data structure is predicated on or necessitates a position of authority over the data and what it represents. Determining what fields or data points are and are not significant is not a neutral or impersonal act—decisions about structuring data reflect a broader notion of knowledge and power in relation to what data (especially complex quantitative data) represents and communicates.⁴⁴ In these data manipulations, the goal of these manipulations was to preserve the fields that were statistically significant and central or useful for the central

⁴⁴ Johanna Drucker, "Diagrammatic Form and Performative Materiality," *The Journal of Electronic Publishing* 19, no. 2 (2016). <https://doi.org/10.3998/3336451.0019.208>; "Database Narrative in Book and Online," *The Journal of Electronic Publishing* 18, no. 1 (2015). <https://doi.org/10.3998/3336451.0018.113>; "Graphical Approaches to the Digital Humanities."; "Non-Representational Approaches to Modeling Interpretation in a Graphical Environment," *Digital Scholarship in the Humanities* 33, no. 2 (2018). <https://doi.org/10.1093/llc/fqx034>.

research questions driving the larger project. Figure 11 presents the final relational schema, and Appendix A walks through the various transformations of the data structure.

While the dataset described previously is the foundation for the overall dissertation project, additional datasets have been gathered from other sources to supplement the foundational dataset. The first content section of the dissertation focuses on animating and making visible labor structures around U.S. professional baseball labor, with a focus on Minor League Baseball and the structures and forces that govern its conditions of labor. In addition to information about the numbers of players and teams, and the change over time in those numbers, this section of the dissertation also addresses representation in the labor structures and organizations that impact or shape professional baseball conditions of labor.

While the history of the Major League Baseball Players Association (MLBPA) has been written elsewhere and is discussed more fully in the first content section, another focus of the argument in this the composition of the Player Relations Committee (PRC) that negotiates collective bargaining agreements and other labor negotiation terms and agreements. While this body has been discussed in scholarly literature and some degree of mainstream press coverage, little research has focused on the composition of this committee in relation to the larger pool of U.S. professional baseball players.

Portions of the data analysis and visualization in this first section look at the members of the PRC. This data was gathered from the primary source Collective Bargaining Agreement documents, and the additional information about place of birth and playing career was gathered manually from Baseball Reference. Represented in tabular form, the PRC data includes the terms and fields defined in Appendix D. An expanded discussion of the technical components of the project, including more in-depth documentation of data structures, platform choices, deposit

procedures, and preservation agreements is addressed in the technical whitepaper that accompanies the project.

Conclusion

This dissertation uses digital sources and methods to enrich how scholars understand and perceive connections between labor, power, and ideology in U.S. professional baseball. Through engaging a quantitative dataset alongside critical qualitative theoretical and methodological frameworks, this project also argues for Minor League Baseball's cultural. Using a methodological framework informed by critical digital humanities and library and information science, project centralizes Minor League Baseball within the broader landscape of U.S. professional baseball to make a three-fold argument.

First, that Minor League Baseball's labor history has been governed by power structures in which management's interests prevail over the Minor League players rights. That trend has continued, even as Major League players achieve greater autonomy and agency via unionization and collective bargaining. A sub-thread of that first argument argues the MLBPA's work on behalf of Major League players has largely overlooked or failed to advocate effectively for Minor League players.

By examining the relationship of labor and globalization within U.S. professional baseball since the 1960 season, the second argument centers Minor League Baseball as a dynamic site of globalized labor. A close examination of the U.S. professional baseball labor force in relation to globalization challenges characterizations of U.S. professional baseball as the "national pastime." A romanticized view of baseball as any sort of national unifier overlooks the inequitable labor structures at work in the Minor League system and the degree to which globalized labor is a central, essential component of the Minor League system.

The third argument looks at the labor represented by digital forms of cultural production, specifically in relation to social media. In the twenty-first century digital media landscape, social media constitutes a key strategy used by individual teams and the U.S. professional baseball apparatus to construct specific, strategic messages about the institution's cultural significance. Some sport media scholars have described social media as a mechanism that increases fan proximity to the "real world" experience of professional athletes. One sub-thread of this larger argument contends management's use of social media in fact obscures or minimizes attention to the lived experiences of Minor League players. Another sub-thread of this argument argues recent Minor League player initiatives have used those same social media platforms to communicate alternate messages about Minor League laborers' experiences. Alongside earlier arguments presented in the dissertation, this third argument emphasizes the degree to which the dominant cultural meanings associated with Minor League Baseball and U.S. professional baseball writ-large most often tend to overlook the material realities, historical conditions, and structures of power that shape the conditions experienced by a vast majority of the sport's labor force.

Tables

Table 1. Richard Lapchick and Diego Salas, “The 2015 Racial and Gender Report Card: Major League Baseball,” Institute for Diversity and Ethics in Sport, University of Central Florida, April 15, 2015.

| 2015 | 2005 |
|----------------------------|-----------------------------|
| White 58.8% (441) | White 60.0% (709) |
| African-American 8.3% (62) | African-American 9.0% (101) |
| Latino 29.3% (220) | Latino 29.0% (339) |
| Asian 1.2% (9) | Asian 3.0% (30) |
| Other 2.4% (18) | Other 0.0% (4) |
| International 41.2% (750) | International 30.0% (358) |

Figures

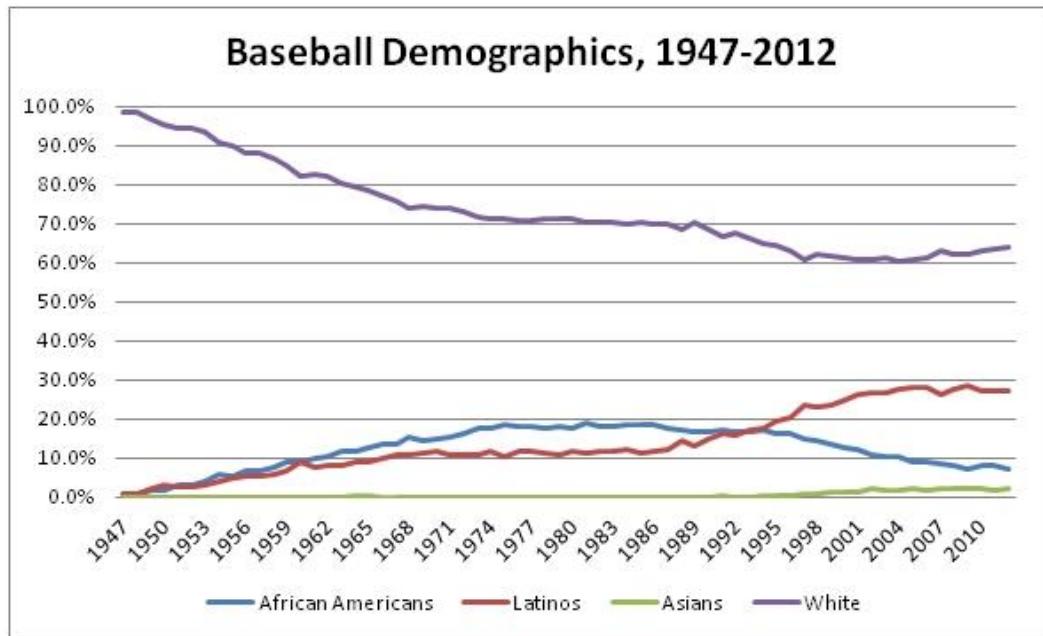


Figure 1. Mark Armour and Daniel R. Levitt, “Baseball Demographics, 1947-2012,” Society for American Baseball Research,
<https://web.archive.org/web/20190228180259/https://sabr.org/bioproj/topic/baseball-demographics-1947-2012>.



Clayton Kershaw

Position: Pitcher

Bats: Left • **Throws:** Left

6-4, 228lb (193cm, 103kg)

Team: [Los Angeles Dodgers](#) (majors)

Born: [March 19, 1988](#) (Age: 29-025d) in Dallas, [TX](#)

Draft: Drafted by the [Los Angeles Dodgers](#) in the [1st round](#) (7th) of the 2006 MLB June Amateur Draft from [Highland Park HS \(University Park, TX\)](#).

High School: [Highland Park HS \(University Park, TX\)](#)

Debut: [May 25, 2008](#) (Age 20-067d, 16,930th in MLB history)
vs. [STL](#) 6.0 IP, 5 H, 7 SO, 1 BB, 2 ER

Rookie Status: Exceeded rookie limits during 2008 season

2017 Contract Status: Signed thru 2020, 7 yrs/\$215M (14-20)

Service Time (01/2017): 8.105 • **Free Agent:** 2021

Agents: Excel Sports Management

Full Name: Clayton Edward Kershaw

Nicknames: [The Claw](#), [Kid K](#) or [The Minotaur](#)

Twitter: [@ClaytonKersh22](#)

Figure 2. Screenshot from <https://web.archive.org/web/20190228182617/https://www.baseball-reference.com/players/k/kershcl01.shtml>.

Teams Played For

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[Glossary](#)

| Year | Age | Tm | Lg | Lev | Aff | Stint | From | To |
|----------------------|-----|---|-----------------------------------|-----|-----|-------|----------------------------|----------------------------|
| 2006 | 18 | GCL Dodgers | Gulf Coast League | Rk | LAD | | 2006-06-30 | 2006-08-19 |
| 2007 | 19 | Great Lakes Loons | Midwest League | A | LAD | | 2007-04-05 | 2007-08-04 |
| 2007 | 19 | Jacksonville Suns | Southern League | AA | LAD | | 2007-08-09 | 2007-08-31 |
| 2008 | 20 | Jacksonville Suns | Southern League | AA | LAD | | 2008-04-04 | 2008-07-17 |
| 2008 | 20 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2008-05-25 | 2008-09-28 |
| 2009 | 21 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2009-04-09 | 2009-10-03 |
| 2010 | 22 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2010-04-07 | 2010-09-24 |
| 2011 | 23 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2011-03-31 | 2011-09-25 |
| 2012 | 24 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2012-04-05 | 2012-10-03 |
| 2013 | 25 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2013-04-01 | 2013-09-27 |
| 2014 | 26 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2014-03-22 | 2014-09-24 |
| 2014 | 26 | Rancho Cucamonga Quakes | California League | A+ | LAD | | 2014-04-25 | 2014-04-25 |
| 2014 | 26 | Chattanooga Lookouts | Southern League | AA | LAD | | 2014-04-30 | 2014-04-30 |
| 2015 | 27 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2015-04-06 | 2015-10-04 |
| 2016 | 28 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2016-04-04 | 2016-10-01 |
| 2016 | 28 | Rancho Cucamonga Quakes | California League | A+ | LAD | | 2016-09-03 | 2016-09-03 |
| 2017 | 29 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2017-04-03 | 2017-04-08 |

Figure 3. Screenshot from <https://web.archive.org/web/20190228182617/https://www.baseball-reference.com/players/k/kershcl01.shtml>.



Enter P

Players

Teams

Seasons

Leaders

MLB Scores



Salvador Perez

Positions: Catcher and First Baseman

Bats: Right • **Throws:** Right

6-3, 240lb (190cm, 108kg)

Team: [Kansas City Royals](#) (majors)

Born: [May 10, 1990](#) (Age: 26-321d) in Valencia, VE

Debut: [August 10, 2011](#) (Age 21-092d, 17,641st in MLB history)
[vs. TBR](#) 3 AB, 1 H, 0 HR, 1 RBI, 0 SB

Rookie Status: Exceeded rookie limits during 2011 season

2017 Contract Status: Not Updated, 5 yrs/\$52.5M (17-21)

Agents: Beverly Hills Sports Council • **Previously:** Morgan Advisors

Full Name: Salvador Johan (Diaz) Perez

Twitter: [@SalvadorPerez15](#)

Figure 4. Screenshot from <https://web.archive.org/web/20190228183051/https://www.baseball-reference.com/players/p/perezsa02.shtml>.

Teams Played For

Share & more ▾ Glossary

| Year | Age | Tm | Lg | Lev | Aff | Stint | From | To |
|------|-----|---|--|-----|-----|-------|------------|------------|
| 2007 | 17 | AZL Royals | Arizona League | Rk | KCR | | 2007-06-22 | 2007-08-26 |
| 2008 | 18 | Burlington Royals | Appalachian League | Rk | KCR | | 2008-06-17 | 2008-08-18 |
| 2008 | 18 | Idaho Falls Chukars | Pioneer League | Rk | KCR | | 2008-08-22 | 2008-09-05 |
| 2009 | 19 | Burlington Bees | Midwest League | A | KCR | | 2009-04-09 | 2009-06-15 |
| 2009 | 19 | Idaho Falls Chukars | Pioneer League | Rk | KCR | | 2009-06-23 | 2009-09-11 |
| 2010 | 20 | Wilmington Blue Rocks | Carolina League | A+ | KCR | | 2010-04-08 | 2010-09-06 |
| 2010 | 20 | Surprise Rafters | Arizona Fall League | Fal | | | 2010-10-13 | 2010-11-18 |
| 2011 | 21 | Northwest Arkansas Naturals | Texas League | AA | KCR | | 2011-04-07 | 2011-07-26 |
| 2011 | 21 | Omaha Storm Chasers | Pacific Coast League | AAA | KCR | | 2011-07-27 | 2011-08-08 |
| 2011 | 21 | Kansas City Royals | American League | MLB | KCR | 1 | 2011-08-10 | 2011-09-28 |
| 2012 | 22 | Omaha Storm Chasers | Pacific Coast League | AAA | KCR | | 2012-06-07 | 2012-06-20 |
| 2012 | 22 | Kansas City Royals | American League | MLB | KCR | 1 | 2012-06-22 | 2012-10-02 |
| 2012 | 22 | Tiburones de La Guaira | Venezuelan Winter League | FgW | | | 2012-11-13 | 2012-12-27 |
| 2013 | 23 | Kansas City Royals | American League | MLB | KCR | 1 | 2013-04-01 | 2013-09-29 |
| 2013 | 23 | Tiburones de La Guaira | Venezuelan Winter League | FgW | | | 2013-11-16 | 2013-12-28 |
| 2014 | 24 | Kansas City Royals | American League | MLB | KCR | 1 | 2014-03-31 | 2014-09-28 |
| 2015 | 25 | Kansas City Royals | American League | MLB | KCR | 1 | 2015-04-06 | 2015-10-04 |
| 2016 | 26 | Kansas City Royals | American League | MLB | KCR | 1 | 2016-04-03 | 2016-10-02 |

Figure 5. Screenshot from <https://web.archive.org/web/20190228183051/https://www.baseball-reference.com/players/p/perezsa02.shtml>.



Players

Teams

Seasons

Le

2014 Johnson City Cardinals

[« 2013 Season](#)

[2015 Season »](#)

Classification: Rookie

League: [Appalachian League](#) (West Division)

Record: 37-31

Pythagorean W-L: 33-35, 325 Runs, 340 Runs Allowed

Affiliation: [St. Louis Cardinals](#) (NL)

Manager: [Johnny Rodriguez](#)

Location: [Johnson City, TN](#)

Attendance: 40,351 (estim. 1,187/game)

Figure 6. Screenshot from https://web.archive.org/web/20190228183242/https://www.baseball-reference.com/bullpen/Johnson_City_Cardinals.

Team Roster **Bold** indicates they played in the majors [Share & more ▾](#) [Glossary](#)

| Name | Age | B | T | Ht | Wt | DoB | Birthplace | Stint | From | To |
|--------------------------------------|-----|---|---|--------|-----|--------------|--------------------------------------|-------|------------|------------|
| Jeff Barkley | 23 | R | R | 6' 5" | 210 | Jul 7, 1990 | Charlotte, NC, US | | 2014-07-11 | 2014-08-29 |
| Landon Beck | 21 | R | R | 6' 3" | 215 | Dec 9, 1992 | Hartwell, GA, US | | 2014-06-19 | 2014-08-24 |
| Ismael Brito | 21 | L | L | 5' 11" | 170 | Mar 23, 1993 | Tucupita, Delta Amacuro, VE | | 2014-06-22 | 2014-08-28 |
| Juan Caballero | 21 | R | R | 6' 4" | 175 | Aug 20, 1992 | Carolina, PR | | 2014-07-05 | 2014-08-27 |
| Kevin Carlow | 23 | L | R | 6' 2" | 190 | Aug 21, 1990 | Mystic, CT, US | | 2014-06-20 | 2014-08-29 |
| Jordan DeLorenzo | 21 | L | L | 6' 1" | 205 | Sep 8, 1992 | Winter Park, FL, US | | 2014-06-24 | 2014-07-27 |
| Blake Drake | 20 | R | R | 6' 1" | 175 | Jul 11, 1993 | Ramona, CA, US | | 2014-06-19 | 2014-08-28 |
| Adam Ehrlich | 21 | L | R | 6' 1" | 200 | Dec 13, 1992 | North Hollywood, CA, US | | 2014-08-13 | 2014-08-28 |
| Jhonatan Escudero | 20 | R | R | 6' 1" | 165 | Jul 7, 1993 | Cartagena, Bolivar, CO | | 2014-06-19 | 2014-08-28 |
| Steven Farinaro | 18 | R | R | 6' 0" | 170 | Aug 18, 1995 | Hayward, CA, US | | 2014-06-20 | 2014-08-29 |
| Bladimir Franco | 20 | R | R | 6' 0" | 170 | Oct 29, 1993 | San Cristobal, San Cristobal, DO | | 2014-06-19 | 2014-08-13 |
| Anderson Gerdel | 21 | R | R | 6' 4" | 204 | Mar 22, 1993 | Charallave, Miranda, VE | | 2014-06-21 | 2014-08-28 |
| Jose Godoy | 19 | L | R | 5' 11" | 180 | Oct 13, 1994 | Maracaibo, Zulia, VE | | 2014-06-19 | 2014-08-29 |
| Jose Gomez | 22 | R | R | 5' 11" | 185 | Jan 30, 1992 | Maracaibo, Zulia, VE | | 2014-06-21 | 2014-08-05 |
| Casey Grayson | 22 | L | L | 6' 1" | 215 | Aug 24, 1991 | Cypress, TX, US | | 2014-06-19 | 2014-08-29 |
| Sasha Kuebel | 21 | R | L | 6' 1" | 200 | Jul 28, 1992 | St. Louis, MO, US | | 2014-07-17 | 2014-08-27 |
| Devante Lacy | 20 | R | R | 5' 9" | 180 | Apr 20, 1994 | Grand Prairie, TX, US | | 2014-06-19 | 2014-08-29 |
| Cole Lankford | 21 | L | R | 6' 0" | 185 | Sep 3, 1992 | College Station, TX, US | | 2014-06-19 | 2014-08-29 |
| Dailyn Martinez | 21 | R | R | 6' 2" | 170 | Apr 19, 1993 | Santiago, Santiago, DO | | 2014-06-22 | 2014-08-25 |
| Julio Mateo | 18 | R | R | 6' 3" | 180 | Sep 29, 1995 | Los Llanos, DO | | 2014-07-28 | 2014-08-27 |
| Ian McKinney | 19 | L | L | 5' 11" | 185 | Nov 18, 1994 | Orlando, FL, US | | 2014-06-21 | 2014-07-22 |
| Rafael Medina | 22 | R | R | 6' 2" | 170 | Oct 24, 1991 | Santo Domingo, Distrito Nacional, DO | | 2014-06-19 | 2014-06-19 |
| Oscar Mercado | 19 | R | R | 6' 2" | 175 | Dec 16, 1994 | Tampa, FL, US | | 2014-06-19 | 2014-08-29 |
| Christian Muscarello | 22 | R | R | 5' 9" | 175 | Jun 16, 1992 | Tucson, AZ, US | | 2014-07-29 | 2014-08-29 |
| Charlie Neil | 24 | S | R | 6' 5" | 195 | Feb 1, 1990 | Dallas, TX, US | | 2014-06-19 | 2014-08-29 |
| Matt Pearce | 20 | R | R | 6' 3" | 205 | Feb 24, 1994 | Bonita Springs, FL, US | | 2014-06-23 | 2014-08-26 |
| Juan Perez | 18 | R | R | 6' 2" | 195 | Jul 22, 1995 | San Felipe, Yaracuy, VE | | 2014-06-19 | 2014-08-28 |
| Anthony Ray | 19 | L | R | 6' 1" | 165 | Mar 3, 1995 | Chicago, IL, US | | 2014-06-19 | 2014-08-23 |

Figure 7. Screenshot from <https://web.archive.org/web/20190228183242/>https://www.baseball-reference.com/bullpen/Johnson_City_Cardinals.

| Player.ID | First Name | Last Name | DoB | PoB | City | State | Country |
|-------------------|------------|--------------|------------|------------------|------------|-------|---------|
| Jared.Mortensen | Jared | Mortensen | 1988-06-01 | Abbotsford.CA | Abbotsford | | CA |
| Owen.Schraufnagel | Owen | Schraufnagel | 04/12/05 | Abbotsford.WI.US | Abbotsford | WI | US |
| Terry.Francona | Terry | Francona | 04/10/79 | Aberdeen.SD.US | Aberdeen | SD | US |
| Christian.Cox | Christian | Cox | 1992-04-22 | Aberdeen.SD.US | Aberdeen | SD | US |

| Location ID | City | State/Province | Country | Geocoded Location |
|---------------|--------|----------------|---------|-------------------|
| Eureka.IL.USA | Eureka | IL | US | 40.7214, 89.2729 |

| Team | Season | Player.ID | Age | Start Date | End Date |
|----------------------|--------|------------------|-----|------------|----------|
| Aberdeen IronBirds | 2016 | Collin.Woody | 21 | 06/24/16 | 09/05/16 |
| Aberdeen IronBirds | 2011 | Mike.Wright | 21 | 07/06/11 | 08/08/11 |
| Aberdeen IronBirds | 2013 | Austin.Wynns | 22 | 06/19/13 | 09/02/13 |
| Aberdeen IronBirds | 2013 | Jimmy.Yacobonis | 21 | 06/17/13 | 09/02/13 |
| Aberdeen IronBirds | 2013 | Mike.Yastrzemski | 22 | 06/25/13 | 09/04/13 |
| Aberdeen IronBirds | 2016 | JeongHyeon.Yoon | 23 | 06/21/16 | 07/24/16 |
| Albuquerque Isotopes | 2015 | Cristhian.Adames | 23 | 04/09/15 | 08/29/15 |

Figure 8. Table created by author (Fall 2016).

| Team ID | Location ID | City | State | Country | Geocoded |
|----------------------|--------------------|-------------|----------------|--------------------------|------------------------|
| Altoona Curve | Altoona.PA.USA | Altoona | Pennsylvania | United States of America | 40.518681, -78.394736 |
| A.DelNorte | Monclova.MX | Monclova | | Mexico | 26.905722, -101.424266 |
| Auburn Doubledays | Auburn.NY.USA | Auburn | New York | United States of America | 42.93202, -76.567203 |
| Augusta GreenJackets | Augusta.GA.USA | Augusta | Georgia | United States of America | 33.470971, -81.974843 |
| Aberdeen IronBirds | Aberdeen.MD.USA | Aberdeen | Maryland | United States of America | 39.509556, -76.16412 |
| Albuquerque Isotopes | Albuquerque.NM.USA | Albuquerque | New Mexico | United States of America | 34.570817, -105.993007 |
| Akron RubberDucks | Akron.OH.USA | Akron | Ohio | United States of America | 41.083064, -81.518485 |
| Asheville Tourists | Asheville.NC.USA | Asheville | North Carolina | United States of America | 35.60095, -82.554016 |
| Arkansas Travelers | LittleRock.AR.USA | Little Rock | Arkansas | United States of America | 34.746481, -92.289595 |
| ARI | Phoenix.AZ | Phoenix | Arizona | United States of America | 33.446768, -112.075672 |
| ATL | Atlanta.GA | Atlanta | Georgia | United States of America | 33.749099, -84.390185 |
| AZL Angels | Tempe.AZ.USA | Tempe | Arizona | United States of America | 33.414631, -111.909376 |
| AZL Athletics | Tempe.AZ.USA | Tempe | Arizona | United States of America | 33.414631, -111.909376 |

| Team ID | MLB | Level | Level ID |
|----------------------|-----|-------|-----------|
| Aberdeen IronBirds | BAL | A- | NYPenn.lg |
| Akron RubberDucks | CLE | AA | East.lg |
| Albuquerque Isotopes | COL | AAA | PCL |
| Altoona Curve | PIT | AA | East.lg |
| Arkansas Travelers | SEA | AA | Texas.lg |
| Asheville Tourists | COL | A | SAL |

Figure 9. Table created by author (Fall 2016).

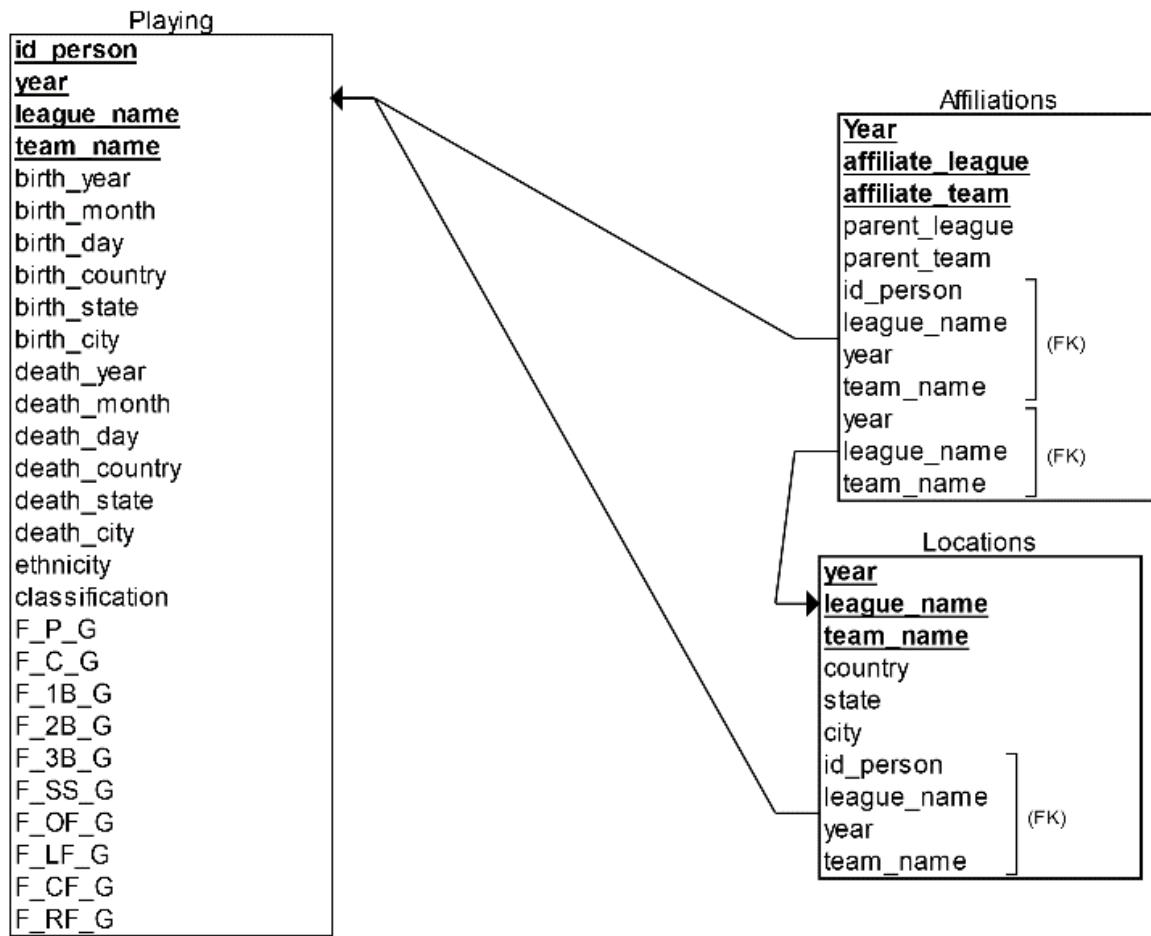


Figure 10. Relational schema for original dataset (created by author).

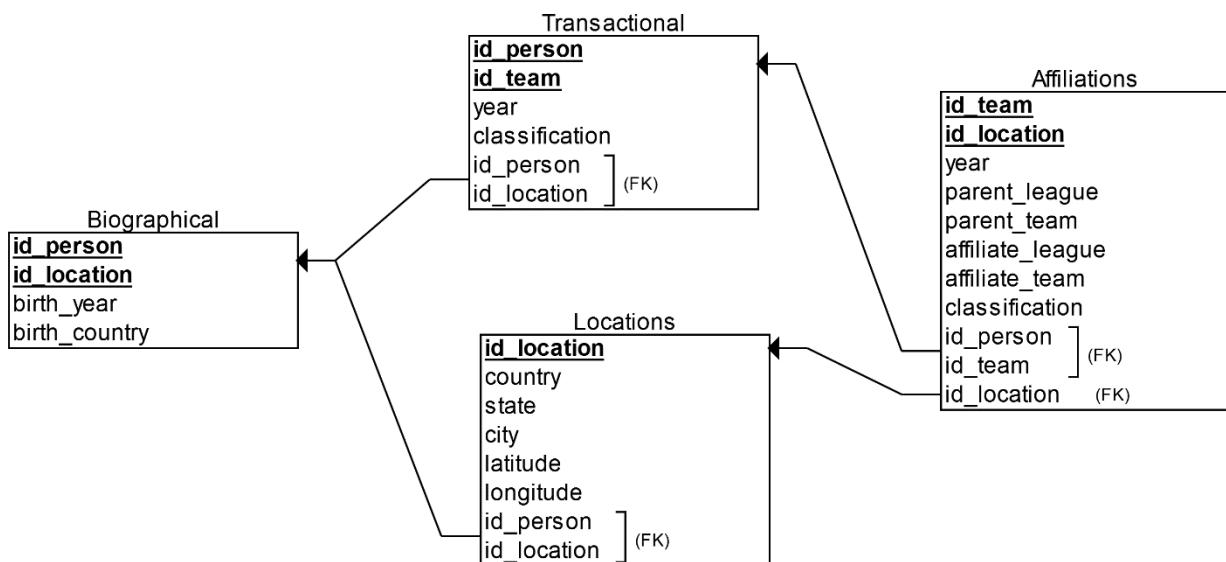


Figure 11. Relational schema for final dataset (created by author).

ROAD TO THE SHOW: A LABOR HISTORY OF MINOR LEAGUE BASEBALL

Introduction

This section of the dissertation begins by presenting a labor history of Minor League Baseball, focusing on how the labor structures and conditions governing the Minor Leagues have developed and evolved over time. At surface level, this history can seem like a dizzying array of acronyms, leagues, and associations. The rationale for presenting this history is two-fold. First, understanding the contemporary state of the Minor Leagues requires some knowledge of the historical forces and developments that have led to the current structure. Second, Minor League Baseball's labor structures and current system were not inevitable—they are the product of lobbying efforts, legal rulings, and often clamorous labor negotiations and compromises.

This labor history's chronology has a few key anchor or reference points. What we now call Minor League Baseball began in 1901 as the National Association of Professional Baseball Leagues (NAPBL). The 1903 National Agreement was the first attempt to formalize Major and Minor League Baseball's relationship. The U.S. Supreme Court's 1922 ruling in *Federal Baseball Club v. National League* gave Major League Baseball a legally-sanctioned antitrust exemption to operate as a monopoly. That legal precedent remains largely unchallenged. Major League Baseball's industry monopoly and control over player labor came to a head in debates around the reserve clause, which restricted players from negotiating on the free market. Catalyzed by labor organizer Marvin Miller, player labor organizing efforts that had previously only existed in fits and starts became the Major League Baseball Players Association (MLBPA). As the first certified baseball union, the MLBPA managed to gather a critical mass of players to support the fight for free agency. Punctuated by strikes, work stoppages, and federal mediation,

the MLBPA succeeded in gaining limited access to free agency, which allowed Major League players to negotiate on the free market under specific conditions.

In the 1960s and 1970s, the MLBPA fought for free agency and other labor protections for Major League players. Those labor organizing efforts drastically reshaped the labor structures and practices at work in Major League Baseball, and consequently also had significant impact on Minor League labor. While the MLBPA's work in the 1960s and 1970s significantly reshaped working conditions for Major League players, no equivalent measure has ever been taken for Minor League players, who have minimal protections and representation in the current labor system. As the dust settled on thirty years of labor strife, Minor League Baseball increased the size, scale, and scope of its operations in the 1990s and early 2000s, establishing Foreign Rookie Leagues outside the United States and creating additional Minor League classification levels. These measures increased the distance between entry-level Minor League teams and Major League rosters. In response to an increasingly inequitable labor structure, former Minor League players have unsuccessfully filed multiple class-action lawsuits to address Minor League labor's vulnerable state. Those efforts have increased attention to Minor League working conditions. But, they also prompted Minor League Baseball's executive office to mount a lobbying campaign for pro-business legislation that would cut off Minor League players' access to potential legal remedies.

Minor League labor has always involved a significant degree of precarity. In this section of the dissertation, I address that precarity via three central themes—the history that has shaped Minor League labor structures, the Minor League labor's scope and significance, and the labor activism that has been largely unsuccessful in advocating for Minor League players. I do so by outlining a history of the structures and organizations that evolved into current-day Major and

Minor League Baseball. Then, I address the human scale of those structures in terms of the number of Minor League players and teams. Then, I present a history of player labor activism, focusing on the MLBPA's inattention to Minor League working conditions. Finally, I conclude by discussing more recent efforts to reshape Minor League labor conditions.

History

The Minor League's Emergence

In U.S. professional baseball's early days, organizations like the National Association (1871-1875) attempted to give the emerging national game some degree of structure. However, that early history reveals an institution whose structure and labor conventions were in flux, as evidenced by short-lived teams, leagues, and associations. The National League (founded in 1876) evolved into today's Major League Baseball. However, early Major League prototypes like the National League were not only professional baseball operations happening in the U.S. The Northwestern League (founded in 1883) was one of the earliest documented examples of a "minor league," a formalized, professional baseball league that—while not part of the dominant National League—held professional status. However, many of these early "minor leagues" were short-lived. The Northwestern League operated for a single season, and the Western League (another minor league) lasted only four seasons. The Western League was renamed the American League and assumed equal status with the National League in 1901. Together, the National League and American League constitute Major League Baseball.

Faced with rapidly-shifting league structures and many short-lived league experiments, minor league team executives formed the National Association of Professional Baseball Leagues (NAPBL) in 1901. The NAPBL is now known as Minor League Baseball. As originally conceived, the NAPBL was a loose association of minor leagues that grew from 14 leagues and

96 clubs in 1902 (its first active season) to 35 leagues and 246 clubs by 1909. Faced with the growing power of organized NAPBL owners, Major League Baseball responded by drafting the 1903 National Agreement, a document that provided some level of formal affiliation between Major League and Minor League Baseball. The National Agreement ensured no NAPBL team would be required to sell players to a higher-level team and required NAPBL teams to be compensated for players lost to higher-level teams. In theory, under the terms of the Agreement, Minor League teams would not be forced to give up their players to a Major League team. And Minor League teams who did lose players to a Major League team would be compensated for players lost.

Initially, the 1903 National Agreement gave Minor League Baseball a degree of autonomy, although Minor League teams were informally understood as a step below Major League teams. However, the 1922 *Federal Baseball Club v. National League* U.S. Supreme Court decision changed that relationship. The verdict provided a foundation and legal precedent for Major League Baseball's long-standing antitrust exemption. In doing so, it also paved the way for Major and Minor League Baseball's hierarchical relationship.⁴⁵ The case's plaintiff was the Federal Baseball Club, a member of the Federal League of Professional Base Ball Players. The Federal League was a professional baseball organization that did not abide by the 1903 National Agreement. Even before self-declaring major league status for the 1914 season, it was considered an outlaw league, meaning the league was not recognized by Major League Baseball and the parties covered in the 1903 National Agreement.

⁴⁵ *National League of Professional Baseball Clubs Et Al. V. Federal Baseball Club of Baltimore, Inc; Federal Baseball Club of Baltimore, Inc. V. National League of Professional Baseball Clubs, Et Al; National League of Professional Baseball Clubs Et Al. V. Federal Baseball Club of Baltimore, Inc.*

Seeing the national game's rising cultural significance and economic stakes, Federal League executives wanted to challenge Major League Baseball's monopoly on U.S. professional baseball. They did so by bringing an antitrust lawsuit against the American and National Leagues (which together formed Major League Baseball). Though filed in 1915, the suit languished in district court. By the time the case reached the Supreme Court in 1922, most Federal League teams had been bought out by other Major League owners or had folded due to financial hardship.

In a unanimous decision, the Supreme Court ruled that professional baseball, because of its entertainment and leisure functions, did not constitute a form of interstate commerce. Therefore, professional baseball was not subject to the terms of the Sherman Antitrust Act. Another antitrust challenge came in 1953, by way of a lawsuit about Major League Baseball's reserve clause.⁴⁶ A component of all Major League contracts, the reserve clause gave the team that first signed a player full control over that player's future contract terms. The reserve clause prevented players from negotiating a contract with other teams, giving them little strategic advantage when negotiating with their current team. In the 1953 lawsuit, Minor League pitcher George Toolson argued the reserve clause binding him to the New York Yankees constituted a restraint of trade and an antitrust violation.

While ultimately unsuccessful, Toolson's lawsuit did not yield a unanimous verdict. Majority opinion authors saw Congressional lawmakers as the ones able to change Major League Baseball's legal status, arguing "Congress has had the ruling under consideration, but has not seen fit to bring such business under these laws by legislation having prospective effect. The business has thus been left for thirty years to develop on the understanding that it was not subject

⁴⁶ *Toolson V. New York Yankees, Inc. Et Al.*

to existing antitrust legislation ... [I]f there are evils in this field which now warrant application to it of the antitrust laws, it should be by legislation.”⁴⁷ The two dissenting justices (Harold Burton and Stanley Reed) offered a different perspective and argued “organized baseball's well known and widely distributed capital investments” were reasons to reconsider the antitrust exemption.⁴⁸ According to Burton and Reed, U.S. professional baseball’s “highly organized ‘farm system’ of minor league baseball clubs, coupled with restrictive contracts and understandings between individuals and among clubs or leagues playing for profit throughout the United States, and even in Canada, Mexico, and Cuba” made upholding baseball’s antitrust exemption by refusing to label it interstate commerce “a contradiction in terms.”⁴⁹

Toolson’s case illustrates Major and Minor League Baseball’s hierarchical relationship that developed following the 1922 *Federal Baseball* verdict. Granted an antitrust exemption and a legally-sanctioned monopoly, Major League owners were able to reframe the terms of the 1903 National Agreement and by extension their relationship with Minor League owners. No longer were Minor League teams a threat to Major League Baseball’s monopoly status. Major League Baseball’s antitrust exemption stripped Minor League owners of any ability to compete with Major League teams on the free market. Who would be allowed to participate in U.S. professional baseball and reap the economic benefits would be decided by Major League owners, not the free market.

This shift directly impacted the still-developing Minor League system. For example, the Pacific Coast League was an independent professional league founded in 1903. As Major League Baseball expanded into western states during the 1950s, the Pacific Coast League went from an

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Ibid.

independent professional league to group of Minor League teams affiliated with Major League Baseball. The American Association of Professional Baseball shared a similar fate. Founded in 1902 as a collection of Minor League teams, the organization started to collapse in the 1950s, their profits eroded by Major League teams' expanding into western markets.⁵⁰ The 1922 Federal Baseball ruling barred Minor League teams from making a bid to become major league alternatives. The 1903 Agreement that afforded Minor League teams a significant degree of autonomy also meant they had no formal relationship or affiliation with Major League teams. Thus, Minor League owners had little capacity or autonomy to justify or sustain their own existence when Major League owners' priorities shifted. Since U.S. professional baseball's organizational structures shifted frequently in the late-19th and early-20th centuries, Minor League teams often lacked firm financial standing.

Growing the Farm System

In the 1930s, St. Louis Cardinals executive Branch Rickey devised a new approach to managing Minor League teams and Minor League players. After taking the helm at St. Louis, Rickey invested in seven Minor League teams that were administered by the St. Louis Major League team. Those original 7 Minor League teams became the foundation of an extensive system that by the 1930s included over 30 Minor League teams. Under the 1903 National Agreement, Minor League teams had to be compensated for players lost to Major League teams. Rickey's system kept those transactions "in house," by only working with Minor League teams affiliated with and administered by St. Louis's Major League team. The success of St. Louis's home-grown talent caught the attention of other Major League teams, even as the system threatened the balance of power between Major and Minor League owners.

⁵⁰ This geographic transformation is addressed further in the dissertation's next section.

Under the terms of the 1903 National Agreement, Minor League teams were somewhat independent and autonomous, especially in terms of managing player contracts. For a Major League team to employ a player currently under contract with a Minor League team, the National Agreement established procedures and compensation guarantees that protected the Minor League team. In Rickey's "farm system" model, Minor League teams were institutionally affiliated with and controlled by a Major League franchise. The "farm system" model framed Minor League teams as a cost-effective means by which Major League teams could sign a player to a contract early in his career and, because of the reserve clause, keep that player under contract for the remainder of his career. Rickey's innovations to the Minor League system threatened to upend established conventions for Major and Minor League relations. Major League owners already held significant power and advantage, and Rickey's system exacerbated that dynamic. In the existing system, Major League owners had to negotiate or deal with Minor League owners on U.S. professional baseball's version of the free market. In Rickey's model, Major League teams subsidized select Minor League teams, which then became overt talent pipelines for the Major League team.

Major League Baseball's Commissioner, Kennesaw Landis repeatedly attempted to curb the growth of Rickey's Minor League system by releasing Minor League players from their affiliation contracts and fining Major League owners that developed formal affiliation agreements with Minor League teams.⁵¹ However, the Commissioner was appointed by Major League owners and served at their behest. And Major League owners stood to benefit greatly from adopting Rickey's approach to Minor League player development. By the time Rickey left

⁵¹ J. G. Taylor Spink, *Judge Landis and 25 Years of Baseball* (St. Louis, MO: Sporting News Pub. Co., 1974).

the Cardinals 1942, most Major League teams were actively developing Minor League systems in Rickey's model, with Minor League teams affiliated with and subsidized by specific Major League teams. For Minor League players, this arrangement was initially promising, with benefits like working with coaches already familiar with the Major League team's priorities and playing style. An affiliated Minor League system may have initially suggested a faster timeline to the Major Leagues and more Major League opportunities for players. However, the opposite actually occurred.

Minor League baseball's classification system was also a structure that emerged out of Rickey's farm system model. As Rickey's model became increasingly widespread, Major League team owners developed a classification system for identifying and organizing "levels" of teams in their Minor League system. Since Minor League teams were moving toward strictly operating as player development pipelines, these classifications created a structure in which novice players would advance through more advanced levels of play before joining the Major League team. Up until 1963, Minor League teams used the following classification system:

- AAA (*most advanced*)
- AA
- A
- B
- C
- D
- D- (*least advanced*)

A 1963 reorganization resulted in the following classification system:

- AAA (*most advanced*)

- AA
- A
- Rookie (*least advanced*)

The 1963 reorganization drastically reduced the number of Minor League teams, and thus also limited the overall number of Minor League players. However, that limited Minor League structure did not remain in place for long. Post-1963 changes added three classification levels, the advanced A class (A+), the short-season A class (A-), and the Foreign Rookie League class. While the Minor League system has never again reached the sprawling proportions of Branch Rickey's 1930's-era player development system, reorganization efforts have largely failed to curb the overall number of Minor League classification levels. As of the 2018 season, Minor League Baseball uses the following classification system:

- AAA (*most advanced*)
- AA
- A+
- A
- A-
- Rookie
- Foreign Rookie (*least advanced*)

That hierarchy is also represented in Figure 12.

In the current system, each Major League team has a roster of players and related coaching personnel. Major League teams execute Player Development Contracts with specific Minor League teams each year. Those Contracts formalize the relationship between a Major and Minor League team and have become a standard component of Major League Baseball's official

rules.⁵² Figure 12 illustrates the 2015 Minor League affiliation structure for five Major League teams. In the 2016 season, more than 7,000 players on 244 teams were part of the Minor League system. Only 868 players appeared on rosters for Major League teams, constituting less than 10% of U.S. professional baseball's entire labor force (see Figures 13-15). As Figure 16 illustrates, the overall number of players has gradually increased over time. However, Figure 17 illustrates how that increase in players has occurred largely at the Minor League level.

In the 1960 season, 3,986 players were spread across 16 Major and 157 Minor League teams. In the 2016 professional baseball season, 8,656 players played for 30 Major and 233 Minor League teams. Part of the Minor League team and player increase came from growth at the Major League level. From the 1950s through the 1990s, Major League Baseball grew from 16 to 30 teams. This growth increased the overall number of Minor League teams, as each new Major League team created its own Minor League affiliate system. The number of players under contract in a given affiliation system also increased during this period. While the expanding number of Major League teams did create additional opportunities at the Major League level, each new Major League team also came with multiple Minor League teams necessary to support

⁵² Lloyd Johnson and Miles Wolff, "Encyclopedia of Minor League Baseball," (Durham, NC: Baseball America, 2007); Major League Baseball, *The Official Rules of Major League Baseball* (New York: Office of the Commissioner of Baseball, 1995); *The Official Rules of Major League Baseball* (2018); *The Official Rules of Major League Baseball* (Chicago, IL: Roundhouse, 2000); *The Official Rules of Major League Baseball* (2017); *The Official Rules of Major League Baseball* (Chicago, IL: Roundhouse, 2001); *The Official Rules of Major League Baseball* (Paw Prints, 2008); *The Official Rules of Major League Baseball; The Official Rules of Major League Baseball* (Chicago, IL, Triumph Books, 2019); *The Official Rules of Major League Baseball* (Chicago, IL: Triumph Books, 2016); *The Official Rules of Major League Baseball* (Chicago, IL: Triumph Books, 1993); *The Official Rules of Major League Baseball* (Chicago, IL: Triumph Books, 1997); *The Official Rules of Major League Baseball* (Chicago, IL: Triumph Books, 1994).

the affiliated Minor League structure. The sheer number of Minor League teams drastically increased the number of Minor League players.

In 1960, the 5 least-advanced Minor League classifications (D-, D, C, B, A) accounted for 62% of the total number of Minor League teams. That percentage has increased slightly. In 2016, the 5 least-advanced Minor League classifications (Foreign Rookie, Rookie, A-, A, A+) constituted 67% of the total number of Minor League teams. Because the number of less-advanced Minor League teams has increased, the number of players playing for less-advanced teams has also grown. Figure 13 compares the number of players who played U.S. professional baseball in the 1960 season (3,762) to the number of players who played U.S. professional baseball in the 2016 season (7,762), showing a 106% increase in the number of players.

However, that increase has not been accompanied by a comparable increase in Major League opportunities. As illustrated in Figure 15, Minor League players greatly outnumber Major League players, in 1960 and 2016. The number of Major League players has increased during this period (from 575 in 1960 to 1,353 in 2016), as has the number of Minor League players (from 3,402 in 1960 to 7,302 in 2016). But represented as a proportion, Minor League labor in a given season represents anywhere from 90-95% of all U.S. professional baseball labor (see Figures 14 and 15).⁵³ While the number of U.S. professional teams has increased (see Figure 18), Figures 19 and 20 illustrate how most of that increase has taken place in the Minor League system.

In the 1960 season, 142 Major and Minor League teams were part of the U.S. professional baseball ecosystem, which grew to 228 teams by the 2016 season (see Figure 18).

⁵³ The discrepancy in percentage and ratio calculations is due to the number of players who appear in both the Major and Minor Leagues during a given season.

Represented as a proportion, Major League teams accounted for 11% of the total number of U.S. professional teams in 1960, and 13% in the 2016 season (see Figures 18 and 19). Minor League teams accounted for 88.7% of U.S. professional teams in 1960 and 86.8% of professional teams in 2016 (see Figures 18 and 19). On the surface, the increasing number of Major League teams might appear to be a promising development for Minor League players. However, calculating those proportions in terms of the number of players, rather than the number of teams, indicates how the increasing number of Major League teams has not positively impacted the ratio of Major to Minor League players.

As illustrated in Figure 21, the average number of teams per Major League franchise has gradually increased over time, from approximately 6 teams per franchise in the early 1960s to 7.6 teams per franchise in the 2016 season.⁵⁴ However, Figure 22 illustrates how the number of Major League teams per franchise has remain constant at one. Meanwhile, the number of Minor League teams per franchise has increased from approximately 4 Minor League teams per franchise in the mid-1970s to 6.6 Minor League teams per franchise in 2016. Framing that change in terms of number of players illustrates that change's human scale (see Figures 13-15).

The disproportionate number of Minor League players would be less concerning if Minor League players' working conditions and career stability were comparable to their Major League counterparts. However, the longest and most stable careers are experienced only by individuals who make it to the Major League level, a small fraction of the overall labor pool. Those trends persist, whether looking at overall number of players, number of players broken down by classification, or number of players broken down over time. Overall, players spend an average of 5.67 seasons in the Major Leagues and an average of 3.96 in the Minor Leagues (see Figure 23),

⁵⁴ A franchise is defined as a Major League team and its affiliated Minor League teams.

indicating Major League players experience the longest careers. Of the 52,397 players who have played U.S. professional baseball since 1960, approximately 48,000 of those players never appeared on a Major League roster.

As Figure 23 illustrates, approximately 10,000 players have spent 1-2 seasons in the Minor Leagues, while fewer than 2,000 players have spent 1-2 seasons on a Major League roster. Overall, the number of players who ever play in the Major Leagues is significantly lower than the number that play in the Minor Leagues, despite the fact the longest careers are experienced by Major League players. Figure 24 emphasizes that trend, showing how the largest numbers of players have only brief careers on Minor League teams. By comparison, Figure 24 also highlights the limited number of players who reach the Major Leagues, as well as their higher number of average seasons played. Looking at the large number of Minor League players and their precarious career trajectories, one might assume that the earliest and most successful efforts at player-driven labor activism focused on Minor League issues. However, the labor activism that has been successful in U.S. professional baseball has largely focused on improving working conditions for Major League players.

Player Activism

Introduction

Dominant narratives about successful labor activism in U.S. professional baseball tend to focus on landmark labor victories secured by the Major League Baseball Players Association (MLBPA). However, the MLBPA is the product of a long history of player labor activism. While the MLBPA has certainly effected positive change in players' working conditions, this section of the dissertation argues its efforts have failed to address Minor League players' material concerns and labor priorities. Despite the significant labor victories achieved for Major League players by

the MLBPA, unaddressed inequities in the Minor League labor system persist. The lack of movement on labor issues related to Minor League players is exacerbated by Minor League players' limited ability to advocate for their own interests within current U.S. professional baseball labor structures.

History

Through the middle of the twentieth century, Major and Minor League owners were afforded a significant degree of power and autonomy. With Major League owners protected by a legally-sanctioned antitrust exemption, players who wanted to play professionally had few, if any, alternatives. For many fans, the rhetoric of “play” and “pastime” used to describe baseball were in tension with attempts to frame professional baseball as a business that should be governed by the labor regulations implemented in other industries. Thus, for most of the twentieth century, U.S. professional baseball players had little ability to successfully negotiate aspects of their labor conditions.

As part of the New Deal’s economic stimulus measures, the 1938 Fair Labor Standards Act (FLSA) established the forty-hour work week, overtime protections, and the federal minimum wage. The FLSA might have given U.S. professional baseball players some legal grounds to argue for increased labor protections, had it not included a few narrow exceptions. Specifically, the law would not apply to “any employee employed by an establishment which is an amusement or recreational establishment” or any industry that “does not operate for more than seven months in any calendar year.”⁵⁵ The U.S. professional baseball season runs from Opening

⁵⁵ *Fair Labor Standards Act of 1938*, 76.

Day in March to the end of the regular season in September—just under the seven-month minimum required for FLSA eligibility.⁵⁶

Adding to the precarity of players' labor conditions, starting in 1879, U.S. professional baseball contracts included a version of the reserve clause. The reserve clause evolved from an informal practice of reserving players for a season to a contractual measure that the team to first sign a player control over that player's contract for the remainder of their career. Until the 1970s, players were granted single-year contracts. Players accepted the contract offered by their current team or faced the alternative of not playing U.S. professional baseball. Confronted with precarious labor conditions and limited alternatives, players attempted a variety of measures to renegotiate U.S. professional baseball's labor practices via collective action. However, until the MLBPA was certified as a union in the 1960s, most of these organizing efforts were short-lived and unsuccessful.

Founded in 1885, the Brotherhood of Professional Baseball Players was able to secure a meeting with National League owners. However, the Brotherhood's support quickly dwindled when it failed to force any substantive concessions from owners. The Brotherhood was followed by the Players League (founded in 1890), a player-run organization that folded after one season. Founded in 1900, the Players' Protective Association targeted issues related to the reserve clause

⁵⁶ In addition to professional baseball players not being eligible for FLSA protections, appellate courts have also upheld rulings that other categories of game-day personnel such as stadium maintenance workers and bat boys are considered essential to the baseball team's operations, which provides amusement/recreation less than seven months of the year. See also: *Robert R. Bridewell, Et Al., Plaintiffs V. The Cincinnati Reds, Defendant; Robert R. Bridewell, Et Al., Plaintiffs V. The Cincinnati Reds, Defendant; Robert R. Bridewell; Stanley Mcalpin; Daisy S. Pearl; Melville F. Walker; Eddie C. Rogers, Plaintiffs-Appellees, V. The Cincinnati Reds, Defendant-Appellant; Robert R. Bridewell; Stanley Mcalpin; Daisy S. Pearl; Melville F. Walker; Eddie C. Rogers, Plaintiffs-Appellees, V. The Cincinnati Reds, Defendant-Appellant; Robert R. Bridewell, Et Al., Plaintiffs Vs the Cincinnati Reds, Defendant; Robert R. Bridewell, Et Al., Plaintiffs-Appellees, V. The Cincinnati Reds, Defendant-Appellant.*

and collusion but collapsed after the 1903 National Agreement went into effect. The Fraternity of Professional Baseball Players of America (founded in 1912) and the National Baseball Players Association of the United States (founded in 1922) were the last significant labor organizing efforts before World War II. Their brief tenures and failure to extract concessions kept baseball's labor power concentrated with owners until the post-War period.

Player labor activism (and U.S. professional baseball more broadly) dwindled during World War I, the Great Depression, and World War II. Founded in 1946, the American Baseball Guild benefited from a shifting U.S. economic landscape and post-War economic boom that continued through the 1950s. Additionally, the Great Depression's workplace regulations and labor protections were becoming increasingly standard, expected parts of the U.S. workplace. The Guild had some limited success raising minimum salaries for Major League players but disbanded after it was unable to gain traction with players and owners on more substantive labor issues.

Founded in 1956, the Major League Baseball Players' Association (MLBPA) started as an informal player-led organization. However, organized labor specialist Marvin Miller took the helm in 1966 and had the organization certified as a union the same year. As Mitchell Nathanson argues, Miller's work with the MLBPA was part of a larger fundamental shift in how Major League Baseball players understood their earning potential, labor rights, and relationship to owners.⁵⁷ The 1968 collective bargaining agreement between Major League Baseball and the MLBPA was the first collective bargaining agreement (CBA) in U.S. professional sports history. The 1968 CBA established minimum salaries for Major League players, and in successive CBAs, Major League players gained access to legal representation in salary negotiations (1973),

⁵⁷ Nathanson, 108-145.

higher minimum salaries (every CBA), and some level of control over contract assignments (1973).

In these early CBAs, the reserve clause was one of the most significant areas of tension between players and owners, and the MLBPA was initially unable to significantly challenge the reserve clause during CBA negotiations. Major League player Curt Flood and the MLBPA unsuccessfully challenged the reserve clause, but the 1969 Supreme Court case increased public awareness and player engagement around the reserve clause and free agency. The MLBPA presented free agency as system that would roll back the reserve clause's unilateral power over contract assignments. Free agency would establish limits on the number of seasons a team could control a player's contract. Once a team had reached those limits (known as "service time"), the player became eligible for free agency and could negotiate with any team interested in offering them a contract. Major League Baseball repeatedly challenged the legality of free agency, refusing to recognize aspects of the CBA that included free agency until legal challenges were resolved. When the National Labor Relations Board (NLRB) ruled in favor of free agency in 1972, the MLBPA achieved a major labor victory, and free agency has been a part of every CBA since 1976.

Whose Player's Union—Minor League Players and the MLBPA

Dominant narratives around the MLBPA's history celebrate the organization's success in changing working conditions for Major League players. And undoubtedly, the MLBPA's gains on issues like free agency, grievance procedures, and minimum salaries had a dramatic and immediate positive impact on Major League working conditions. In the face of lockouts, strikes, and work stoppages, the union succeeded where earlier organizing efforts had failed, significantly altering professional baseball's labor power dynamics. However, the benefits and

advantages procured via the MLBPA’s efforts are not equally available for all U.S. professional baseball players. Only players who have signed a Major League contract or have earned a minimum amount of Major League service time are eligible to join the MLBPA and benefit from the labor protections provided via the CBA.

However, every CBA since 1968 has included the following introductory language:

“In making this Agreement, the Association represents that it contracts for and on behalf of the major league baseball players and individuals who may become major league baseball players during the term of this Agreement.”

The only players eligible to join the MLBPA are those who have Major League contracts, and the privileges afforded by the MLBPA’s efforts most directly benefit Major League players. However, the MLBPA positions itself as acting on behalf of Major League players and “individuals who may become major league baseball players during the term of this Agreement”—a category that includes all Minor League players. As outlined previously in this section, Minor League players represent anywhere from 90-95% of the total baseball labor pool in any given season. The MLBPA purports to represent a class of workers who are not eligible for union membership, and that class represents the vast majority of U.S. professional baseball labor.

The sheer number of Minor League players and the degree to which they outnumber Major League players beg the question why labor activism efforts that largely benefit Major League players have not devoted similar or even comparable resources to Minor League issues. The MLBPA’s limited efforts on behalf of Minor League players also raises questions about the degree to which the organization adequately represents or includes Minor League perspectives. No active Minor League players are able to take part in the MLBPA’s operations, and the

MLBPA has failed to advocate for the Minor League players it purportedly represents. Since it was established and run by Major League players, the MLBPA understandably spent its early years addressing issues of greatest concern to its Major League membership. However, as the MLBPA gained ground on significant issues like grievance procedures, salary protections, and free agency, the organization continued to act primarily in the interest of Major League players, failing to substantively pursue issues relevant to Minor League players. While the MLBPA has initiated conversation around increased regulation for Latin American academies and a formal recruitment process for international players, the union has not pressed on those issues, instead opting to gain ground in other areas like salary protections and medical injury-related care.

After the MLBPA became a certified union in 1966, Major League team owners and MLBPA representatives formed a body called the Player Relations Committee (PRC). While the PRC bears the important task of negotiating the Collective Bargaining Agreements that govern baseball labor conditions, scholarship on baseball labor history rarely addresses the PRC. Analyzing the PRC's history and composition offers further evidence of the MLBPA's failure to address the material concerns of Minor League players and emphasizes the challenges Minor League players face in advocating for their own interests. Since its earliest iterations, the PRC has included player representatives, union officials, team owners, and Major League executives. Player representatives elected from the MLBPA membership constitute a significant portion of the PRC. The presence of these player representatives might suggest a range of player perspectives are brought to bear on CBA negotiations. However, becoming a player representative requires being an MLBPA member who is voted into that role by a peer group. To become a player representative on the PRC, a player must first have made it the Major Leagues and have sufficient name recognition and social capital with other Major League players to gain

the necessary votes. Current Minor League players are ineligible, and players who have only recently joined the Major Leagues are at a disadvantage in terms of being competitive for a player representative spot.

Looking at the composition of player representatives compared to the larger pool of U.S. professional baseball players highlights the limited degree to which the PRC and by extension the MLBPA consider or advocate for Minor League players' interests. Since the first CBA was negotiated in 1968, the PRC has included MLBPA executives, Major League players, Major League team executives, and members of Major League Baseball's executive office. When CBA negotiations have resulted in forced mediation, NLRB arbitrators have also been part of the PRC's operation. At no point in the PRC's existence have currently-active Minor League players been part of its composition, despite the fact Minor League players represent roughly 90% of U.S. professional baseball labor (see Figure 26).

On average, player representatives' Major League careers are significantly longer than the average Major League career enjoyed by the overall labor pool (see Figures 24 and 25). The discrepancy in Major League career length is understandable given the notoriety players need to become a player representative. But, that discrepancy again highlights the PRC's limited ability to represent or engage a truly diverse array of player experiences and priorities. The larger pool of players averages 5.6 seasons in the Major Leagues (see Figure 24). By comparison, player representatives spend 11.3 seasons in the Major Leagues (see Figure 25). Despite nearly all player representatives having some Minor League playing experience, their Major League career length far outpaces time spent in the Minor Leagues.

Including only Major League players in CBA negotiations means only a small subset of the larger labor pool has a voice in determining labor conditions. Additionally, the player

representatives involved in negotiating the collective bargaining agreements have failed to reflect the increasing global diversity in U.S. professional baseball's labor force. As will be discussed at length in the next section of the dissertation, U.S. professional baseball's work force has become increasingly global in the decades following World War II. However, players representatives have only recently begun to reflect those global trends (see Figure 26 and the discussion of labor and globalization presented in the dissertation's next section). And ultimately, the careers for players involved in CBA negotiations do not reflect the broader experience of U.S. professional baseball players, both in terms of their progression through the Minor Leagues and time spent playing for a Major League team. Those issues of equity and representation bear increasing weight given the overwhelming number of Minor League players and the degree of precarity they experience.

Conclusion

As the MLBPA and Major League Baseball waged a series of labor battles, U.S. professional baseball was plagued by lockouts, strikes, and work stoppages, culminating in the 1994-1995 strike cancelled the 1994 World Series. To drive this point home, the MLBPA was certified as a union in 1966, and the first thirty years of the organization's existence included the following events:

- 1972 strike
- 1973 lockout
- 1976 lockout
- 1980 strike
- 1981 strike
- 1985 strike

- 1990 lockout
- 1994-1995 strike

For three decades, strikes and work stoppages were the norm in U.S. professional baseball labor relations. Faced with an increasingly fractious national pastime, the U.S. House Judiciary Subcommittee on Antitrust, Monopolies and Business Rights held a series of Congressional hearings in 1995. As a referendum on the 1994-1995 strike, the hearings included testimony from Major League players, Major League executives, and MLBPA executives. Much of the hearings related to H.R.397, the Major League Play Ball Act which presented binding arbitration as a solution to ensure the 1995 MLB season would be played. From the text of the Play Ball Act:

“It is the purpose of this Act to encourage serious negotiations between the major league baseball players and the owners of major league baseball, to prevent the continued economic loss to individuals not involved in the negotiations whose livelihood depends on baseball being played, to prevent ongoing losses to those communities that host major league baseball, to preserve major and minor league baseball, and to resolve the dispute between the players and owners.”⁵⁸

⁵⁸ *Major League Baseball Antitrust Reform Act of 1997*, 105-1, HR 704; *Major League Baseball Antitrust Reform Act of 1995*, 104-1, HR 1612; *Baseball Fans Protection Act of 1994*, 103-2, HR 4965; *Baseball Fans and Communities Protection Act of 1994*, 103-2, HR 4994; *Professional Baseball Antitrust Reform Act of 1995*; *Giles Act*, 104-1, HR 2022; *Baseball Fans and Communities Protection Act of 1995*, 104-1, HR 365; *Baseball Fans and Communities Protection Act of 1995*; *Baseball Fans and Communities Protection Act of 1997*, 105-1, HR 21; *National Commision on Professional Baseball Act of 1995*, 104-1, HR 735. *Major League Baseball Equity Act*, 102-1, S 1727; *Major League Baseball Antitrust Reform Act of 1995*; *Major League Baseball Antitrust Reform Act of 1995*, 104-1, S 627; *Major League Baseball Antitrust Reform Act of 1995*; *Major League Baseball Restoration Act*, 104-1, S 376; *Baseball Fans Protection Act of 1994*; *Curt Flood Act of 1998*, 105-2, S 53; *Curt Flood Act of 1997*, 105-1, S 53.

The hearings also asked Major League players, executives, and MLBPA representatives to account for U.S. professional baseball's decades of labor turmoil.⁵⁹ As Representative Pat Williams (D-Montana) noted in his opening remarks, the sheer number of work stoppages in the MLBPA's early decades would seem to indicate U.S. professional baseball's existing labor structure was not functioning well, if at all. However, rather than pointing to U.S. professional baseball's unusual monopoly status or underlying labor structures, Williams referenced his "duty" as a baseball fan to hold Major League Baseball accountable for the lost revenue, economic impact, and fan disappointment that resulted from strikes and lockouts.

H.R.397 never made it out of committee, but the hearings emphasized the lasting power of Major League Baseball's antitrust exemption, evidenced by Major League Baseball's unchallenged ability to operate as an unregulated monopoly. Rather than question the core labor structures impacting U.S. professional baseball, Congressional involvement only reinforced those structures. While any potential legislation that emerged from the hearings would have a direct impact on Minor League Baseball, no Minor League representatives—players, owners, or executives—were called to testify.

The 1994 strike ended when the U.S. District Court in New York ruled in favor of the MLBPA, forcing both parties back into active negotiations. As in the Congressional subcommittee hearings, Judge Sonia Sotomayor's ruling directly mentioned baseball's heightened cultural significance and the negative impact baseball work outages had on the American public.⁶⁰ The heightened political tension around the 1994-1995 strike culminated in

⁵⁹ Ibid.

⁶⁰ *Daniel Silverman, Regional Director for Region 2 of the National Labor Relations Board, for and on Behalf of the National Labor Relations Board, Petitioner-Appellee, V. Major League Baseball Player Relations Committee, Inc. And the Constituent Member Clubs of Major League Baseball, Respondents-Appellants; Daniel Silverman, Regional Director of the Second*

the introduction of 112 STAT. 2826, known as the Curt Flood Antitrust Act of 1997. Enacted in 1998, the bill also took steps to clarify the limitations hard-won free agency placed on placed on that exemption. The final legislation directly stated that “the National Association of Professional Baseball Leagues, its member leagues and the clubs of those leagues, are not ‘in the business of organized professional major league baseball’.”⁶¹ While the Curt Flood Act directly impacted Minor League Baseball, no Minor League players or representatives were called to testify during the twenty-one months the bill was introduced, discussed, revised, and approved by both the House of Representatives and Senate.

By including this clarification, Congress ensured the labor protections won by the MLBPA would not (and at least according to current legal precedent could not) be extended to Minor League players. The 1998 legislation upheld system that Major League organizations free rein and full autonomy in regulating the Minor League system. The 1998 Curt Flood Act managed to simultaneously preserve free agency for Major League players, reinscribe Major League Baseball’s antitrust exemption, and prevent Minor League players from accessing the labor rights and protections the MLBPA had won for Major League players.

Any consideration of Minor League labor conditions was largely absent in the national conversation that followed the 1994-1995 strike and 1998 Curt Flood Act. However, the disenfranchisement of Minor League players became an object of discussion in 2014 and 2015. Multiple groups of former Minor League players filed class-action lawsuits against Major League Baseball, alleging violations of the Fair Labor Standards Act. Those lawsuits challenged the legal precedent used to exempt U.S. professional baseball from the Fair Labor Standards

Region of the National Labor Relations Board, for and on Behalf of the Nlrb, Petitioner, V. Major League Baseball Player Relations Committee, Inc., Et Al., Respondents.

⁶¹ *Curt Flood Act of 1998; Curt Flood Act of 1997.*

Act's workplace protections. Those protections are largely only relevant for Minor League players, given their lack regulated minimum salary levels. Multiple appellate courts ruled that it would be impossible to certify Minor League players as a class because U.S. professional baseball constitutes a form of interstate commerce. As a point of reference, Major League Baseball's antitrust exemption is predicated on the argument that U.S. professional baseball does not constitute a form of interstate commerce. While ultimately unsuccessful, the lawsuits garnered attention from sport and mainstream media venues.⁶²

The lawsuits also ignited pointed responses from Major and Minor League Baseball's executive offices. Minor League Baseball's executive office established a political action committee, which succeeded in getting H.R.5580, the Save America's Pastime Act, introduced in 2015.⁶³ While purportedly unrelated to the unsuccessful class-action lawsuits, H.R.5580 sought

⁶² Michael Baumann, "The Disgrace of Minor League Baseball," *Ringer*, 2018, <https://web.archive.org/web/20190228183818/https://www.theringer.com/mlb/2018/4/20/17259846/minor-league-baseball-anti-labor-ronald-acuna-scott-kingery>; Maury Brown, "Minimum Wage Exemption Is the Culmination of a Battle over MLB and Minor League Economics," *Forbes*, 2018, <https://web.archive.org/web/20190228183844/https://www.forbes.com/sites/maurybrown/2018/03/26/the-fragile-economics-between-mlb-the-minors-and-the-minimum-wage-exemption/>; Tom Goldman, "Fight against Low, Low Pay in Minor League Baseball Continues Despite New Obstacles," *National Public Radio*, 2018, <https://web.archive.org/web/20190228183925/https://www.npr.org/2018/08/03/635373608/fight-against-low-low-pay-in-minor-league-baseball-continues-despite-new-obstacl>; Mitchell Hartman, "For Some Minor League Baseball Players, Wages Can Seem Like Peanuts," *Marketplace*, 2018, <https://web.archive.org/web/20190228184105/https://www.marketplace.org/2018/04/05/business/minor-league-baseball-draws-fans-and-dispute-over-pay>; Bobby Mueller, "MLB and Minor League Salaries: The Ugly Business Side of Baseball," *Fansided*, 2018, <https://web.archive.org/web/20190228184132/https://calltothepen.com/2018/03/22/mlb-minor-ugly-business/>; Edwin Rios, "Minor League Baseball Players Make Poverty-Level Wages. Congress Wants to Keep It That Way," *Mother Jones*, 2018, <https://web.archive.org/web/20190228184210/https://www.motherjones.com/politics/2018/03/minor-league-baseball-players-make-poverty-level-wages-congress-wants-to-keep-it-that-way/>.

⁶³ *Save America's Pastime Act*, 114-2, HR 5580. Minor League Baseball, "Minor League Baseball Supports New Legislation to Protect America's Pastime," *MLB.com*, 2016,

to amend the FLSA to “exempt from minimum wage and maximum hours requirements any employee who has contracted to pay baseball at the minor league level” and ensure “no employer shall be subject to liability or punishment on account of any violations of minimum wage, maximum hours, or specified recordkeeping requirements regarding any work performed before, on, or after enactment of this bill.”⁶⁴ As a point of reference, the class-action lawsuits were based on the FLSA’s minimum wage and maximum hour provisions. Immediate negative responses to the bill’s introduction made it a non-starter in terms of getting out of committee.⁶⁵ Although the initial attempt at the Save America’s Pastime Act was unsuccessful, continued lobbying by Minor League Baseball’s political action committee succeeded. A nearly-identical version of the 2015 Save America’s Pastime Act was added to the Consolidated Appropriations Act (H.R.1625, 115th Congress 201), which was signed into law on March 23, 2018.⁶⁶

Any discussion of Minor League labor conditions must also grapple with the material impact those structures have on Minor League laborers—the thousands of players who are contractually obligated to participate in the U.S. professional baseball system realize the goal of becoming a Major League player. Major League salaries are typically in the public record, reported by mainstream media and archived in sites like Baseball Reference. However, reliable information about Minor League salaries is much less readily available. Minimum Minor League salaries are not outlined in Collective Bargaining Agreements, unlike minimum Major League

<https://web.archive.org/web/20190228184244/https://www.milb.com/milb/news/minor-league-baseball-supports-new-legislation-to-protect-americas-pastime/c-186903512>; Brian Marron, "MLB Issues Statement Regarding Wage Limits for Minor League Players," *Bleacher Report*, 2015,
<https://web.archive.org/web/20190228184305/https://bleacherreport.com/articles/2649469-mlb-issues-statement-regarding-wage-limits-for-minor-league-players>.

⁶⁴ Ibid

⁶⁵ Baumann; Brown; Goldman; Hartman; Mueller; Rios.

⁶⁶ *Consolidated Appropriations Act*, 115, H.R. 1625.

salaries. Verified sport data sources like Major League Baseball, Sport Reference, or the Society for American Baseball Research (SABR) do not include Minor League salary data, and the sources that do include it are not verified or are unclear about the scope and source of their information.⁶⁷

As the legal filings in recent class-action cases *Senne v. MLB* and *Miranda v. Selig* argue, the visibility and focus on “successful” U.S. professional baseball players who reach the Major Leagues obscures larger issues of Minor League salary inequity and labor precarity.⁶⁸ As illustrated in Figure 27, the advent of free agency in the 1970s dramatically increased both the

⁶⁷ Jeff Blank, "Minor League Salary," *Sports Law Blog*, n.d., <https://web.archive.org/web/20190228184408/http://sportslawblogger.com/baseball/salary-information/minor-league-salary>; "Minor League Baseball Player Salaries," Glassdoor, 2017, 2016, https://web.archive.org/web/20190228184444/https://www.glassdoor.com/Salaries/minor-league-baseball-player-salary-SRCH_KO0,28.htm; Robert N. Pimpsner, "A Realistic Approach to Increase MiLB Salaries," *Pinstriped Prospects*, 2015, <https://web.archive.org/web/20190228184531/https://pinstripedprospects.com/a-realistic-approach-to-increase-milb-salaries-5836/>; Ian Gordon, "Minor League Baseball Players Make Poverty-Level Wages," *Mother Jones*, 2014, <https://web.archive.org/web/20190228184635/https://www.motherjones.com/politics/2014/06/baseball-broshuis-minor-league-wage-income/>.

⁶⁸ Aaron Senne, Et Al., Plaintiffs, V. Kansas City Royals Baseball Corp., Et Al., Defendants; Aaron Senne, Et Al., Plaintiffs, V. Kansas City Royals Baseball Corp., Et Al.; Defendants; Sergio Miranda; Jeffrey Dominguez; Jorge Padilla; and Cirilo Cruz, Individually and on Behalf of All Those Similarly Situated, Plaintiffs-Appellants, V. Allan Huber Selig, Bud; Kansas City Royals Baseball Corp.; Miami Marlins, L.P.; San Francisco Baseball Associates, Llc; Boston Red Sox Baseball Club L.P.; Angels Baseball L.P.; Chicago White Sox Ltd.; St. Louis Cardinals, Llc; Colorado Rockies Baseball Club, Ltd.; Baseball Club of Seattle, Llp; Cincinnati Reds, Llc; Houston Baseball Partners, Llc; Athletics Investment Group, Llc; Rogers Blue Jays Baseball Partnership; Cleveland Indians Baseball Co., L.P.; Cleveland Indians Baseball Co., Inc.; Padres L.P.; San Diego Padres Baseball Club, L.P.; Minnesota Twins, Llc; Washington Nationals Baseball Club, Llc; Detroit Tigers, Inc.; Los Angeles Dodgers Holding Co.; Sterling Mets L.P.; Atlanta National League Baseball Club, Inc.; Azpb L.P.; Baltimore Orioles, Inc.; Baltimore Orioles, L.P.; Phillies L.P.; Pittsburgh Baseball, Inc.; Pittsburgh Baseball P'ship; New York Yankees P'ship; Tampa Bay Rays Baseball Ltd.; Rangers Baseball Express, Llc; Rangers Baseball, Llc; Chicago Baseball Holdings, Llc; Milwaukee Brewers Baseball Club, Inc.; Milwaukee Brewers Baseball Club, L.P.; Office of Commissioner of Baseball, Dba Major League Baseball; Los Angeles Dodgers, Llc, Defendants-Appellees; Sergio Miranda, Et Al., Plaintiffs, V. Allan Huber Selig, Et Al., Defendants.

average Major League salary and the minimum Major League salary. According to *Business Insider*'s analysis of Major League salary data, Major League salaries have risen 6,600% under free agency.⁶⁹ As mentioned previously, minimum Minor League salary levels are not outlined in the Collective Bargaining Agreement or other governing documents. Without access to minimum wage protections or avenues for filing workplace grievances, Minor League players have few avenues to advocate for alternate compensation levels or a restructured payment system. The data in Figure 28 and Table 2 provide one estimate for Minor League salary figures.

Bringing together salary information I was able to find, the discrepancy between Major and Minor League salaries is stark. Only when players reach the AAA level after spending multiple years in the Minor Leagues do they approach something resembling a living wage. In the 19th and early-20th century, before the advent of the MLBPA, most Major League players relied on jobs outside baseball to supplement their baseball earnings. Contemporary Minor League players face similar financial strain and often need to secure additional income sources outside the playing season, while still complying with uncompensated, team-mandated obligations related to conditioning and nutrition. Those uncompensated obligations can also include participation in a fall or winter league, as well as spring training.

This section of the dissertation highlights the variety of structures that shape Minor League labor conditions, bringing to the forefront a dimension of U.S. professional baseball labor often overlooked in dominant baseball narratives. Minor League Baseball's labor history illustrates a system in which the interests of owners prevail over the rights of Minor League

⁶⁹ Cork Gaines, "Chart of the Day: Baseball's Salaries up 6,600% Thanks to Free Agency," *Business Insider*, 21 January 2011, <https://web.archive.org/web/20190228184706/https://www.businessinsider.com/chart-of-the-day-major-league-baseball-salaries-since-1970-2011-1>.

players, even as Major League players have achieved greater autonomy and agency via unionization and collective bargaining. While the MLBPA has largely failed to advocate effectively on behalf of Minor League players, Major League executives have formalized their control over Minor League labor conditions and limited Minor League players' ability to advocate for changes in their working conditions.

Compounding that inequity, an increasing number of Minor League players enter the U.S. professional baseball system from outside the United States, raising larger questions about globalized labor and equity within U.S. professional baseball. As Gilbert argues, the power Major League players won via collective bargaining directly impacted the player development system, as “team owners responded by creating more flexible modes of control over the recruitment and development of future generations of athletes.”⁷⁰ This section of the focuses on the nuanced ways those “more flexible modes of control” developed and manifested, arguing that framing free agency as a “victory” for U.S. professional players ignores the impact (or lack of impact) the MLBPA’s activism had on Minor League players.

Centering Minor League labor conditions emphasizes the disproportionate number of players under contract in a labor system that gives them little agency and few avenues for legal action. Despite growing awareness of Minor League labor conditions, no substantive measures have been introduced to change the Minor League system. The class-action lawsuits filed in 2014 and 2015 by former Minor League players may have increased public awareness, but the issues raised in those lawsuits were not part of the negotiations for the most recent CBA, which was signed in 2016 and went into effect in the 2017 season. Even as Minor League Baseball’s executive office mounted political lobbying efforts directly intended to disenfranchise 90% of

⁷⁰ Gilbert, 5.

U.S. professional baseball laborers, the MLBPA failed to address that attack in any of the public conversations or statements made around the 2016 CBA.

This section of the dissertation focuses on Minor League Baseball's labor history and its scale, scope, and significance within the larger U.S. professional baseball ecosystem. The next section of the dissertation looks at how the growth of the Minor League system since the 1950s intersects with globalization. As Gilbert argues, the tactics and "new modes of control" Major League owners devised in response to free agency also involved "significantly expand[ing] their teams' geographic reach, in search of top players and new fans."⁷¹ While existing baseball scholarship has looked at how those trends manifested at the Major League level, the next section of the dissertation takes up how globalization in U.S. professional baseball labor impacted Minor League Baseball. That history is partly about Minor League team locations and structures, but it also emphasizes a dramatic transformation in the composition of Minor League labor.

Tables

Table 2. Minor League player salary information.

| Level | 1 st Year | 2 nd Year | 3 rd Year |
|--------|----------------------|----------------------|----------------------|
| Rookie | \$1150 | \$1200 | \$1250 |
| A- | \$1150 | \$1200 | \$1250 |
| A | \$1300 | \$1350 | \$1400 |

⁷¹ Ibid.

| | | | |
|------------|--------|--------|--------|
| A+ | \$1500 | \$1550 | \$1600 |
| AA | \$1700 | \$1800 | \$1900 |
| AAA | \$2150 | \$2400 | \$2700 |

Figures



Figure 12. Hierarchy of Minor League affiliation structure for National League Central Division teams.

Figure 13. Total Number of Players, 1960 Versus 2016

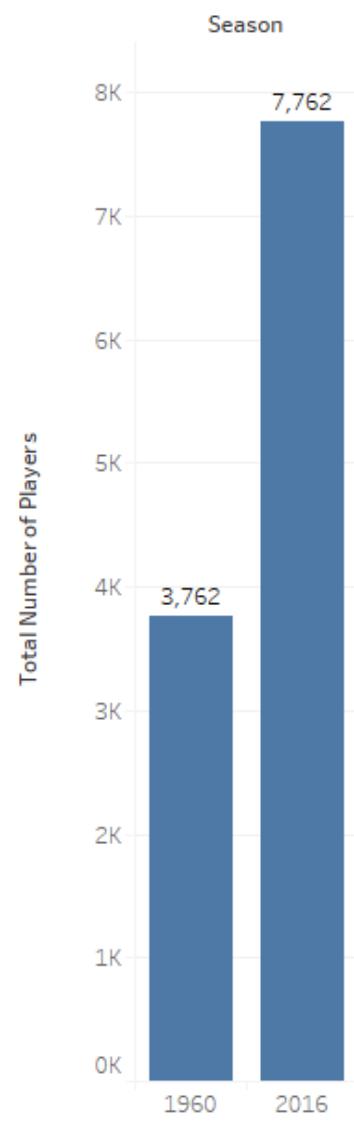


Figure 13. Total number of professional players, 1960 versus 2016.

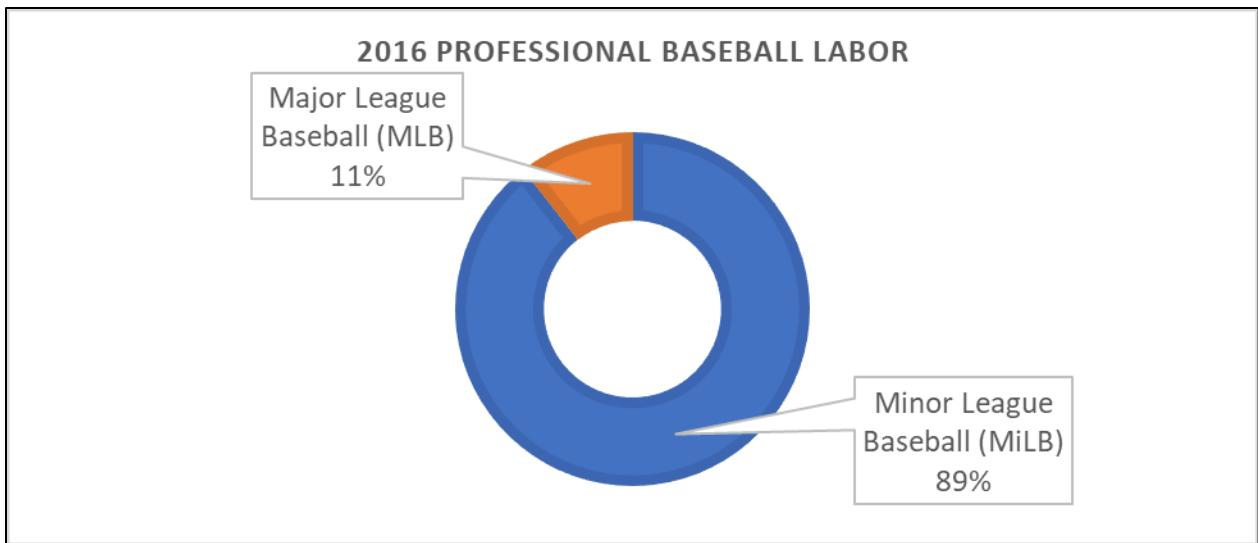


Figure 14. Ratio of Minor and Major League Baseball players from 2016 season.

Figure 15. Total
Number of Players
By Category, 1960
Versus 2016

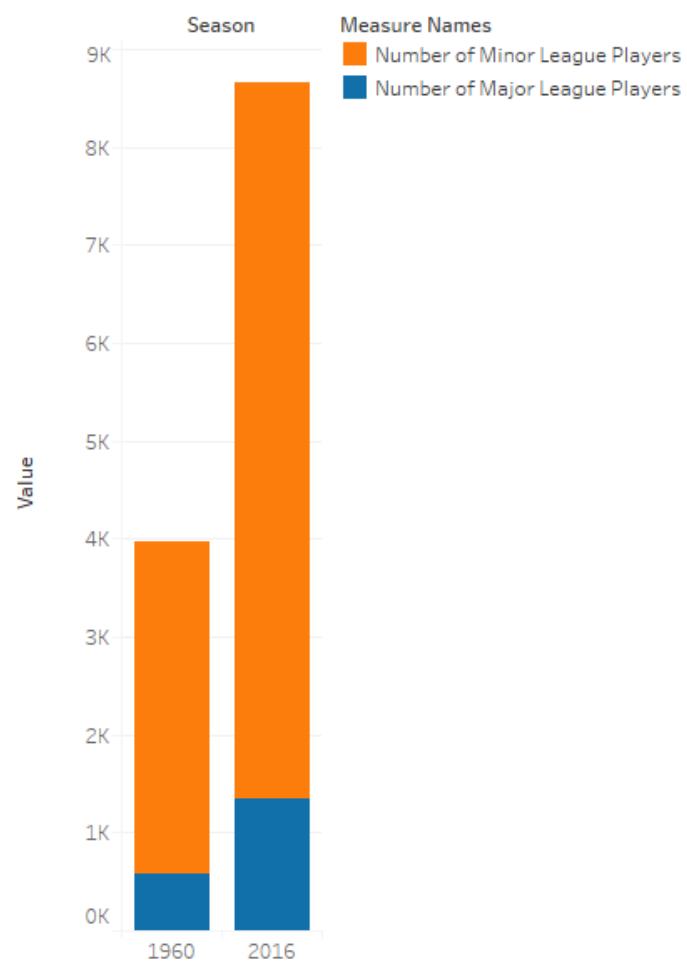


Figure 15. Total number of professional baseball players by category, 1960 versus 2016.

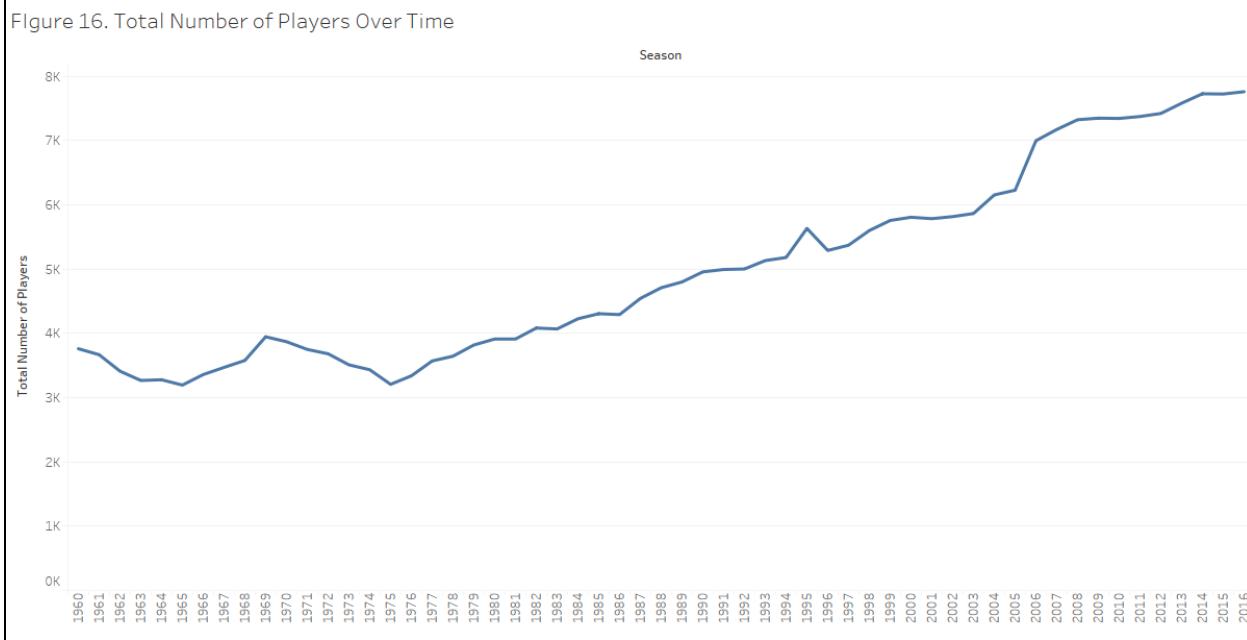


Figure 16. Total number of professional baseball players over time.

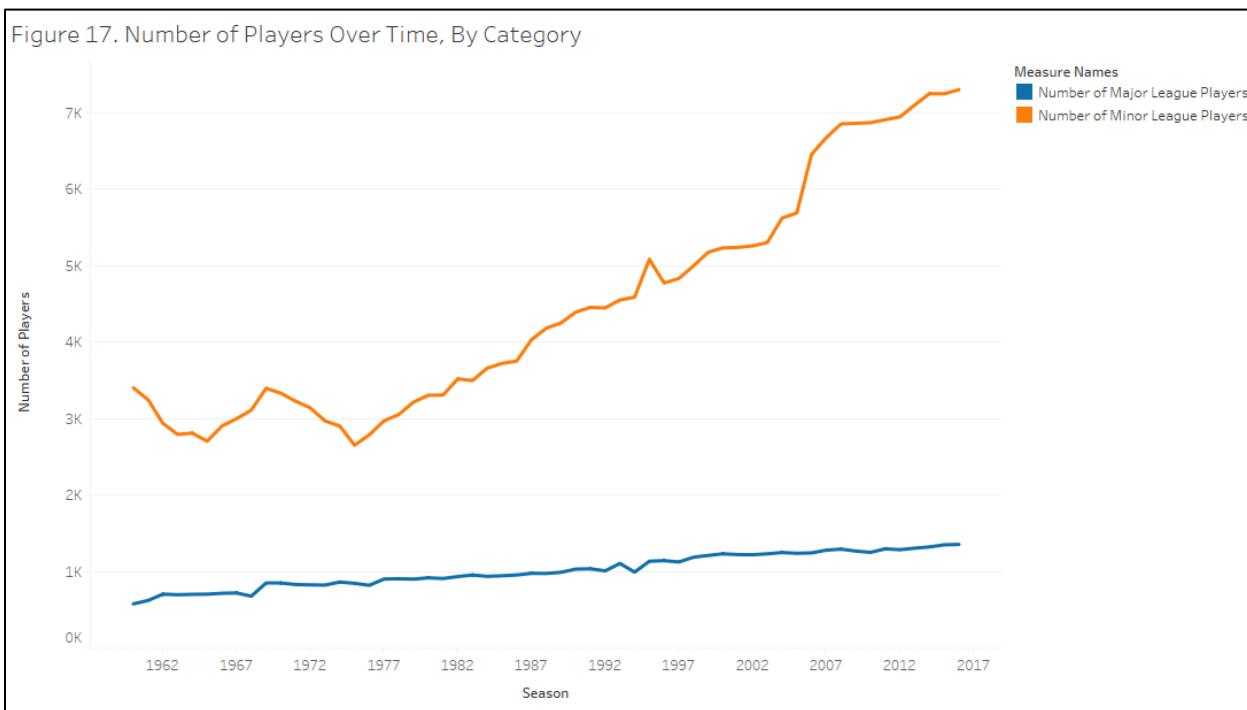


Figure 17. Total number of professional baseball players over time, by category.

Figure 18.
Number of Teams,
1960 Versus 2016

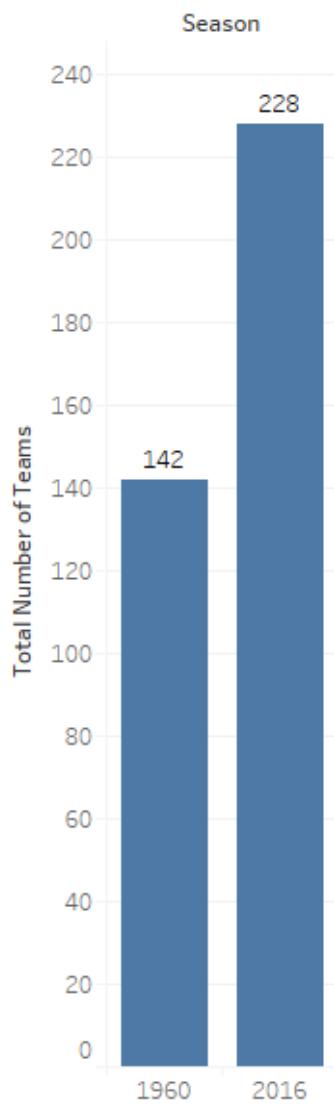


Figure 18. Total number of U.S. professional baseball teams, 1960 versus 2016.

Figure 19. Total
Number of Teams
By Category,
1960 Versus 2016



Figure 19. Total number of U.S. professional baseball teams by category, 1960 versus 2016.

Figure 20. Number of Major and Minor League Teams Over Time

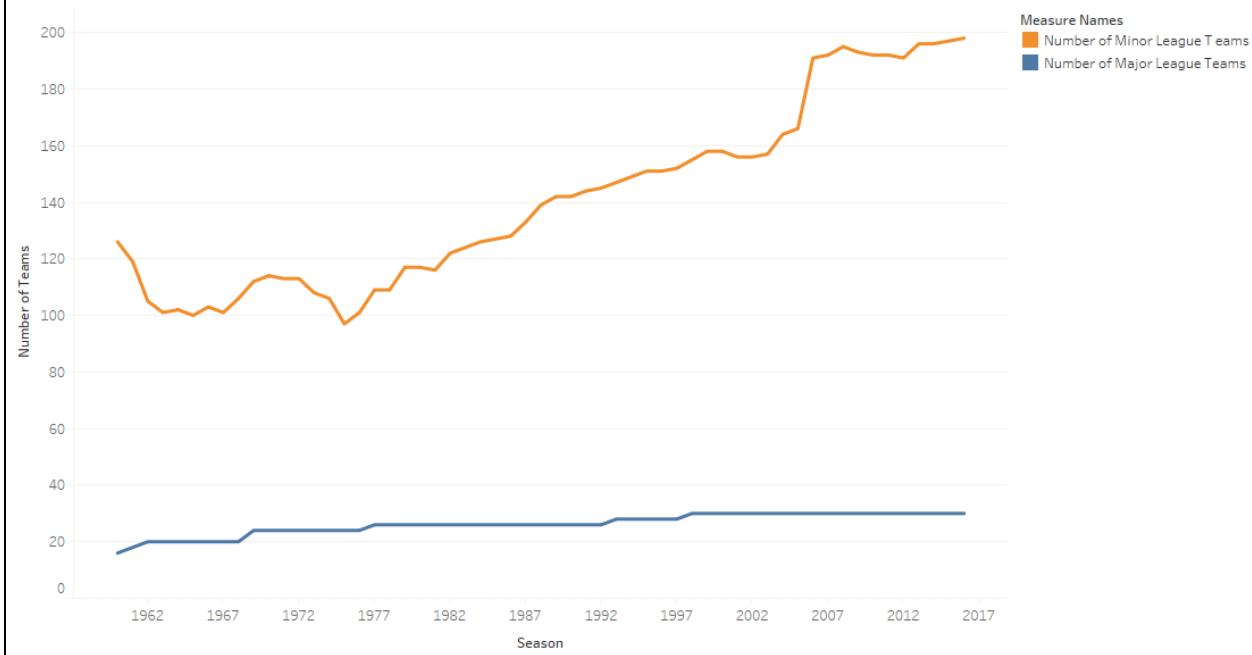


Figure 20. Total number of U.S. professional baseball teams over time, by category.

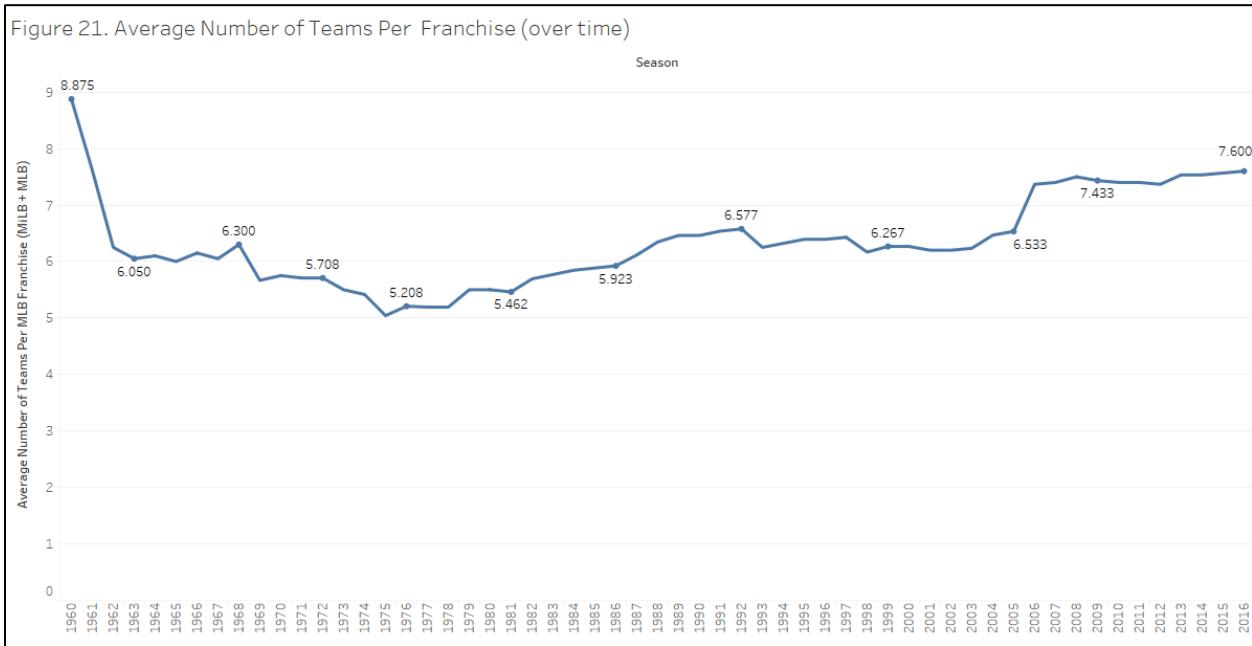


Figure 21. Average number of teams per franchise over time.

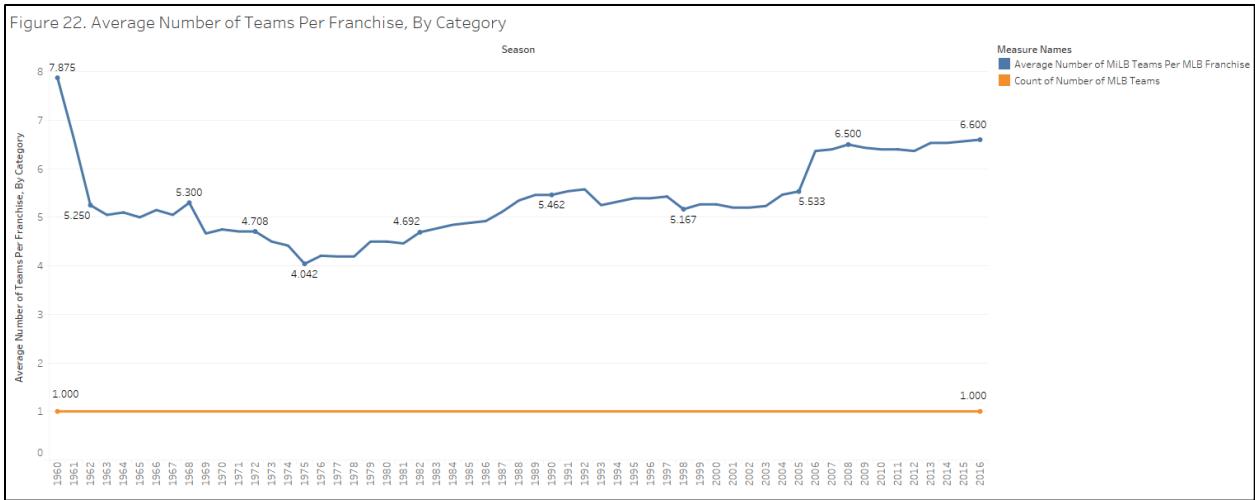


Figure 22. Average number of teams per franchise by category, over time.

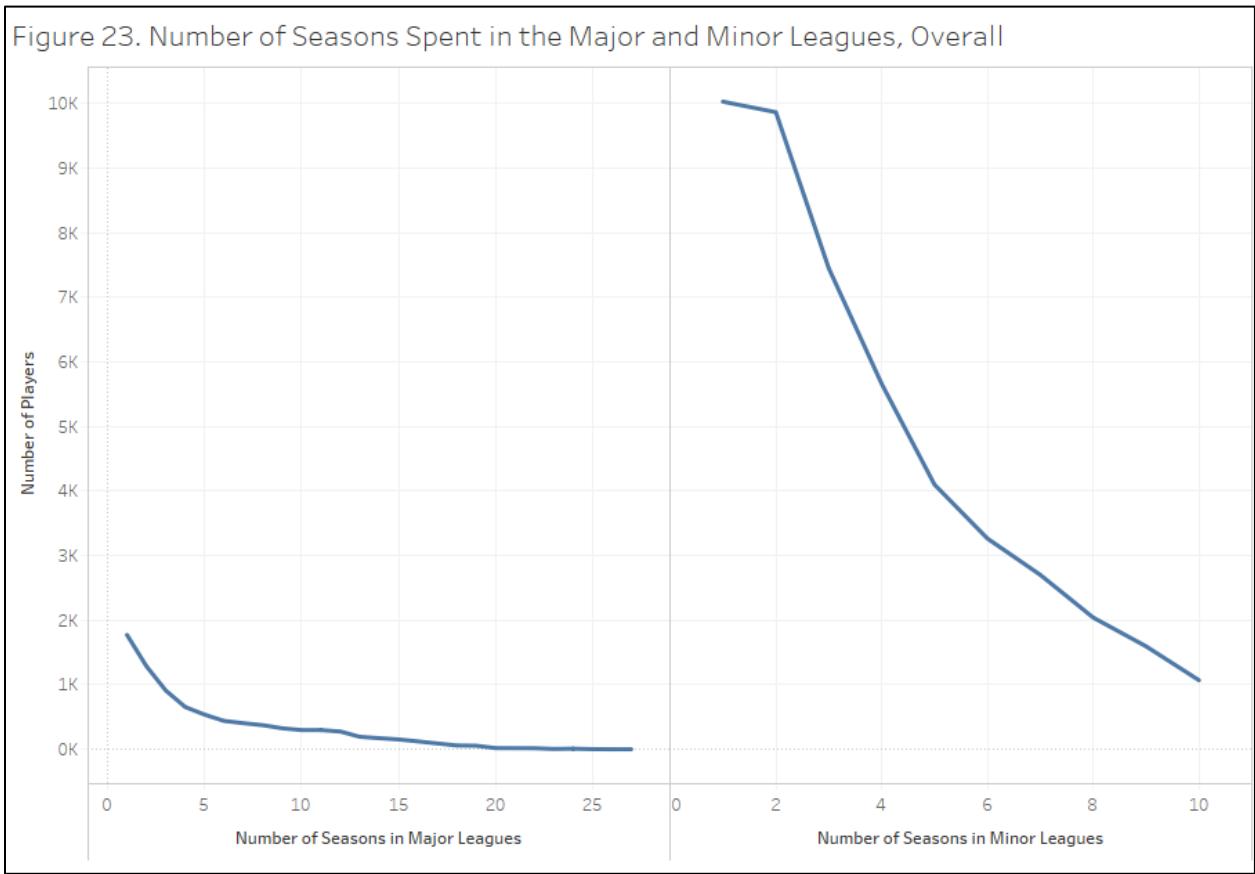


Figure 23. Number of seasons spent in the Major and Minor Leagues, overall.

Figure 24.
Average Number
of Seasons Per
Player, By
Category

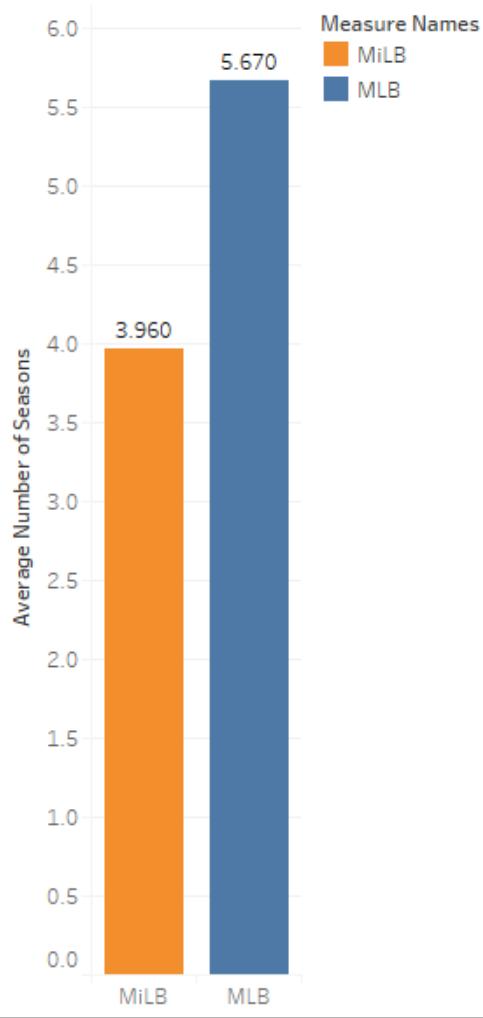


Figure 24. Average number of seasons per player by category.

Figure 25.

Average Number
of Seasons
Played at the
Major and Minor
League Levels for
Player Represen-
tatives on the
PRC

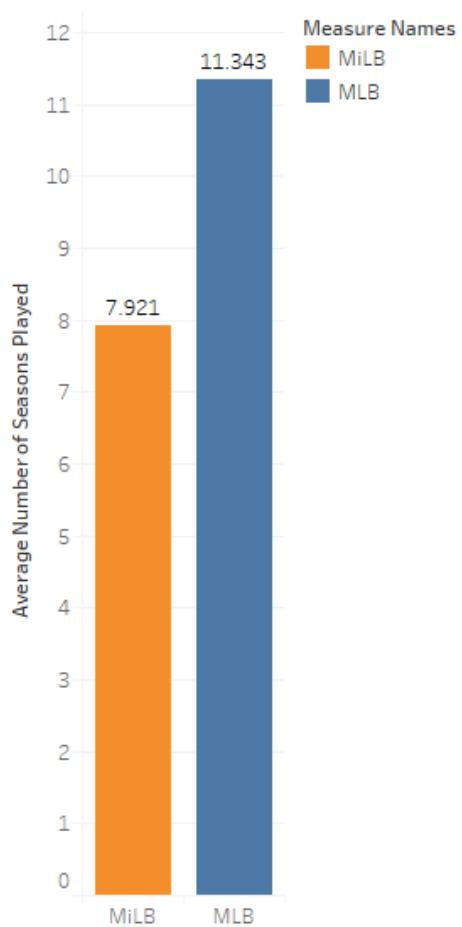


Figure 25. Average number of seasons played at the Major and Minor League levels by Player Representatives on the Player Relations Committee.

Figure 26. Player Representatives on the Player Relations Committee, By Birth Country

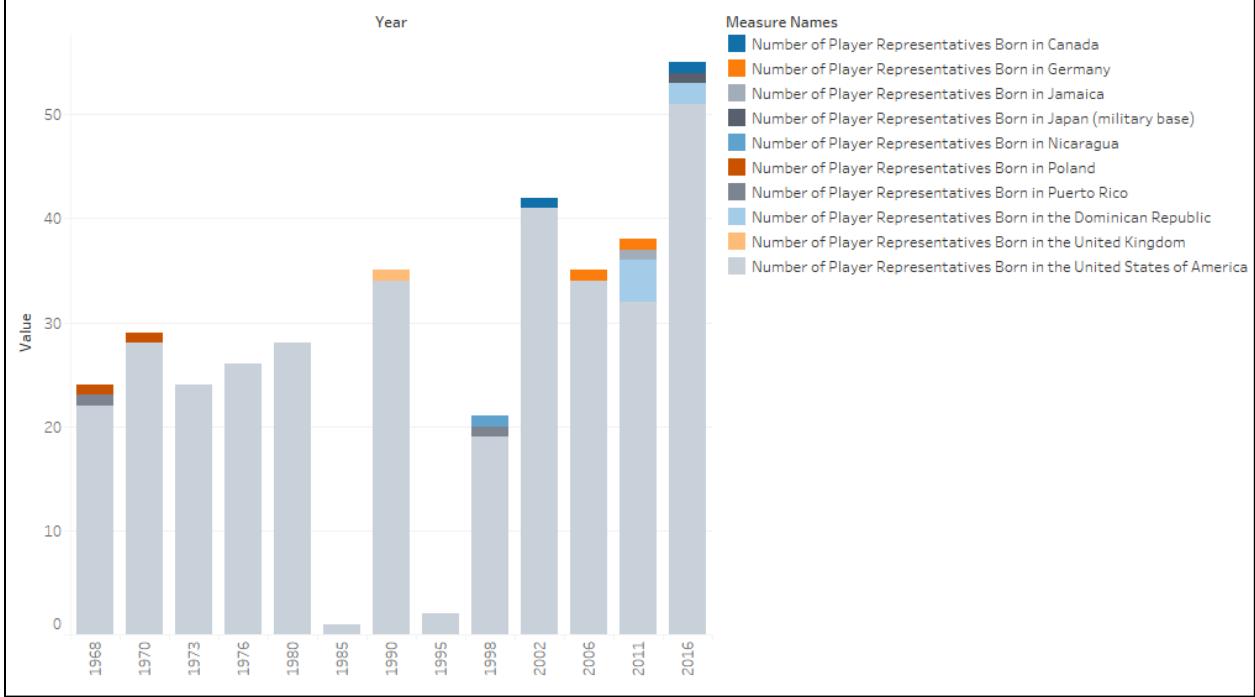


Figure 26. Player Representatives on the Player Relations Committee, by Birth Country Over Time.



MAJOR LEAGUE BASEBALL SALARIES SINCE 1970

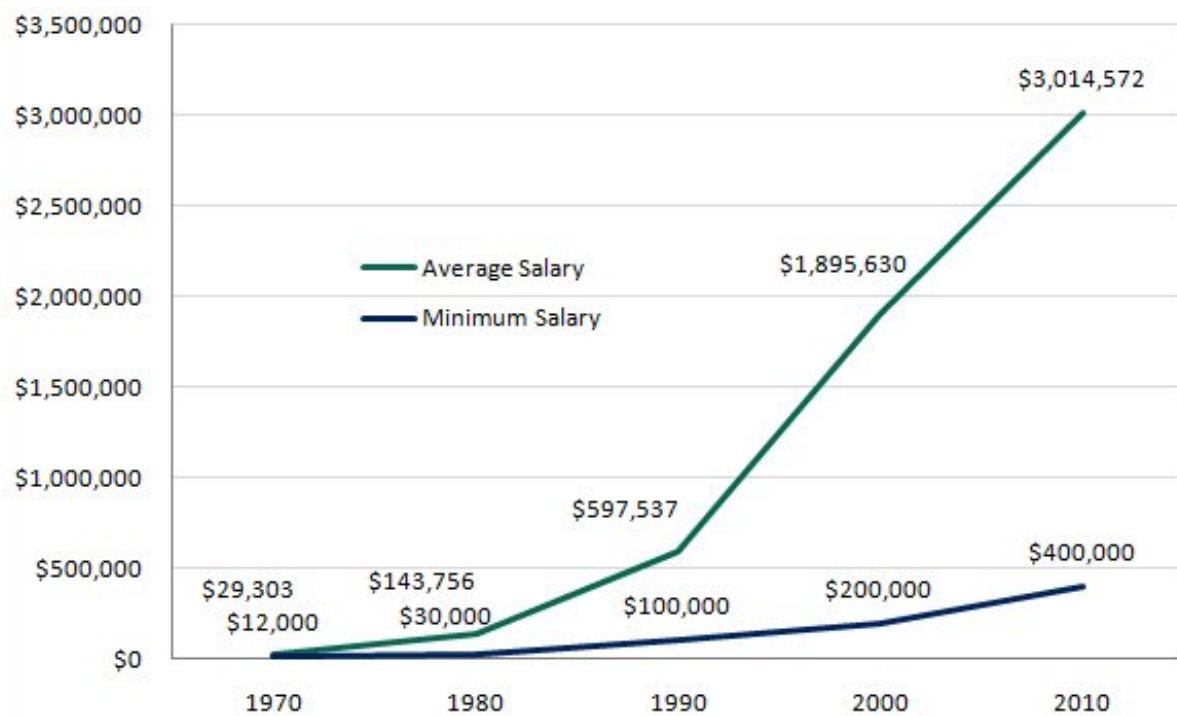


Figure 27. Cork Gaines, “Chart of the Day: Baseball’s Salaries Up 6,600% Thanks to Free Agency,” Business Insider (21 January 2011).
<https://web.archive.org/web/20190228184706/https://www.businessinsider.com/chart-of-the-day-major-league-baseball-salaries-since-1970-2011-1>.

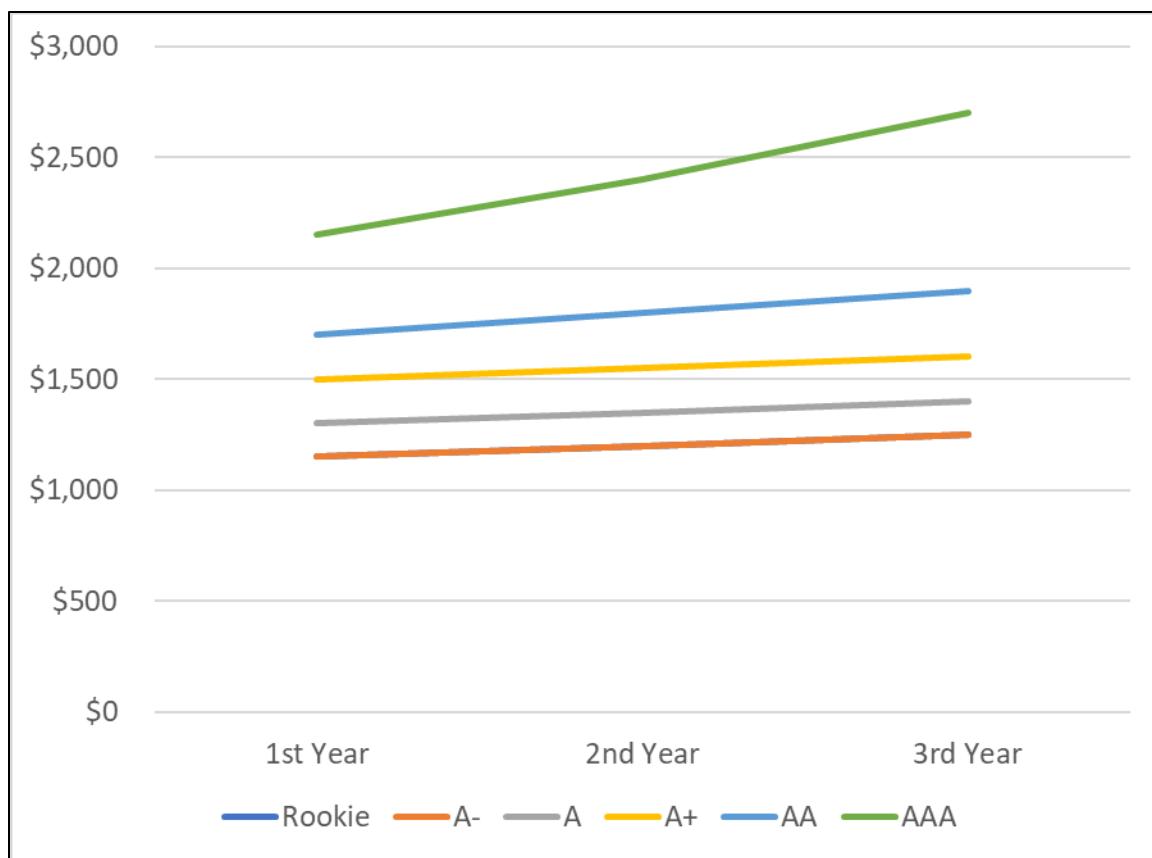


Figure 28. Chart of Minor League salary levels.

THE SHOT HEARD ‘ROUND THE WORLD: GLOBALIZATION AND MINOR LEAGUE BASEBALL LABOR

Introduction

This section of the dissertation examines how macro- and micro-level trends in Minor League Baseball relate to and complicate MLB-dominated narratives around U.S. professional baseball’s globalization. By synthesizing data related to player birthplaces, team locations, and player movement over time, this section takes up three primary areas of inquiry. First, it addresses how Minor League demographics and global dimensions have shifted over time. By doing so, it provides a richer understanding of how the Minor League labor structures outlined in the previous section have developed across time and space. Second, it examines how the Minor League career trajectories for players born outside the U.S. differ from those of their U.S.-born counterparts. Taking up this analysis of Minor League players’ career prospects clarifies how the labor precarity addressed at length in the previous section increasingly impacts players born outside the U.S. Third, it investigates how the intersection of Minor League Baseball and globalization relates to or complicates dominant narratives that focus on Major League Baseball. In doing so, it argues for the centrality of Minor League Baseball as a dynamic global site.

As previously argued, Minor League labor conditions are structured and regulated in ways that strategically disenfranchise Minor League players. The previous section made that argument by outlining Minor League Baseball’s labor history and the labor activism efforts that have had little impact on Minor League working conditions. That section’s conclusion emphasized the significant precarity and tangible hardship experienced by Minor League players. Those players have few, if any, alternate paths via which they can achieve a Major League career due to Major League Baseball’s legally-sanctioned monopoly status.

Certainly, precarious labor conditions impact a wide range of Minor League players.

A richer understanding of Minor League players origins and career trajectories provides greater insight into how different groups of Minor League players experience those precarious labor structures. Not considering Minor League labor provides only a partial understanding of how U.S. professional baseball has been impacted by globalized labor practices. This section of the dissertation addresses the relationship between U.S. professional baseball's global reach and "national pastime" claims through a close examination of Minor League data. By taking up this analysis, this section of the dissertation argues that considering Minor League teams and players in conversations about U.S. professional baseball's global scope and cultural significance is essential.

The Implications of Global Baseball Labor

The previous section of the dissertation presented the *Miranda v. Selig* and *Senne v. MLB* class-action lawsuits as examples of Minor League players' attempts to reshape their labor conditions. While unsuccessful legal measures, both cases presented a profoundly simple argument—that focusing on the exceptional in U.S. professional baseball limits attention to the ordinary. Both cases argued that the disproportionate attention given to Major League players and outstanding Minor League players minimizes the degree to which general audiences are aware of most players' career trajectories and working conditions.

Minor League labor is not the only arena in which focusing on the exceptional or notable within U.S. professional baseball obscures other processes, structures, and forces at work. For example, while U.S. professional baseball makes many claims about its history to argue for national pastime status, one of the primary arguments is "the Jackie Robinson story"—the moment when progressive baseball magnate Branch Rickey found the first African American player with enough athletic talent and skill to play at the Major League level and signed Jackie

Robinson to a contract with the Brooklyn Dodgers. Robinson stepped up to the plate in 1947 and struck a blow for racial equality, marking U.S. professional baseball as a progressive, meritocratic space in which all who earned the opportunity to play would be welcomed. In terms of U.S. professional baseball's exceptional stories, few have greater significance than this one.

Critical baseball scholarship has addressed and explored the problematic historical inaccuracies and limited perspectives included in dominant narratives about U.S. professional baseball's desegregation. As Nathanson points out, fixating on the Robinson story limits attention to the significant obstacles Robinson and other players of color faced across the Major and Minor Leagues, as the long process of desegregation unfolded.⁷² In discussing U.S. professional baseball's desegregation and increasingly global labor force, Ruck points out how signing black players and players from outside the U.S. to Major and Minor League contracts put already marginalized groups in an economic system that treated players as property, offered minimal labor protections, and did not yet include things like free agency or collective bargaining that greatly benefited Major League players.⁷³ Burgos's discussion of U.S. professional baseball's relationship with Latinx communities points out how the inclusion of Latinx stars and racialized politics of passing had blurred baseball's color line long before Robinson joined the Dodgers.⁷⁴ Focusing on desegregation as only operating on a black-white color line limits attention to the varying experiences of Latinx players.⁷⁵ As Burgos argues, a fixation on Robinson's 1947 season overlooks or obscures a more complex history of race, ethnicity, and racialization.⁷⁶

⁷² Nathanson.

⁷³ Ruck, *Raceball: How the Major Leagues Colonized the Black and Latin Game*.

⁷⁴ Burgos.

⁷⁵ Ibid, 140; Elias.

⁷⁶ Burgos.

Complicating such dominant narratives illustrates how they are often not supported by historical fact and obscure the actual conditions of U.S. professional baseball labor. The larger framing of U.S. professional baseball operating as a meritocracy and reflecting democratic ideals overlooks deep inequities and unwarranted abuses that characterize U.S. professional baseball's labor structures and practices. Centering Minor League Baseball in an analysis of those labor practices further complicates those dominant narratives. Doing so also provides additional evidence of those inequitable labor structures and practices.

The Shifting Geography of U.S. Professional Teams

For over fifty years, Major League geography had remained relatively stable. But as illustrated in Figures 29 and 30, a combination of Major League franchise relocation and expansion over the second half of the twentieth century have changed U.S. professional baseball's geography. These battles between Major and Minor League teams had historical precedent in the ways Major League Baseball's antitrust exemption allowed it to bar other Minor League and independent teams from vying for competing Major League status. But, these struggles also present Major and Minor League team locations as sites of spatial contestation. Figures 31 and 32 illustrate how the number and geographic distribution of Minor League teams also shifted, as Minor League teams increased in number and had to reckon with shifting Major League territorial claims. Major League relocation and expansion brought with it a series of territory struggles between Major and Minor League teams.

Major League Baseball's growth into a truly national pastime took place most often through usurping Minor League teams' territory. For example, in the 1960 *Portsmouth Baseball Corp v. Frick* lawsuit, a Minor League team filed a lawsuit against Ford Frick (Major League Baseball's Commissioner), alleging breach of contract after Major League games were broadcast

in the Minor League team's territory.⁷⁷ The case was ultimately dismissed because the parties were unable to establish a common interpretation of the Player Development Contract, which articulates the resources, rights, and obligations shared when Minor League teams are affiliated with a Major League team.

In 1971, a Minor League team owner filed a lawsuit arguing they never received agreed-upon compensation after a Major League expansion club (the Seattle Mariners) moved into the Minor League team's territory.⁷⁸ The court found the Minor League owner had no grounds for further legal action. In 1993, a prospective ownership group attempted to buy the San Francisco Giants, with the stated intention of relocating the team to Tampa Bay, Florida. Major League Baseball's executive office did not approve the move, and the case's plaintiffs argued that action was an unlawful restraint of trade, civil conspiracy, and an antitrust violation.⁷⁹ The court dismissed the suit and did not issue a definitive ruling on the potential antitrust violation. Just a year later in 1994, an ownership group was poised to purchase an AA-level Minor League team, with the stated intention of moving the team to New Orleans, Louisiana. Minor League Baseball's executive office approved the purchase, under the condition that no higher-ranking team had claim to the New Orleans territory.⁸⁰ A higher-level Minor League team did claim the

⁷⁷ *Portsmouth Baseball Corporation, Plaintiff, V. Ford C. Frick, Commissioner of Baseball, Et Al., Defendants; Portsmouth Baseball Corporation, Plaintiff-Appellant, V. Ford C. Frick, Commissioner of Baseball; Baltimore Baseball Club, Inc., Et Al., Defendants-Appellees; Portsmouth Baseball Corporation, a Corporation of Virginia, Plaintiff, V. Ford C. Frick, Commissioner of Baseball, Et Al., Defendants.*

⁷⁸ *Portland Baseball Club, Inc. V. Baltimore Baseball Club, Inc., Et Al. ; Portland Baseball Club, Inc., a Corporation, Plaintiff, V. Bowie K. Kuhn, Individually and as Commissioner of Baseball, Et Al., Defendants (Two Cases); Portland Baseball Club, Inc., Plaintiff-Appellant, V. Bowie K. Kuhn, Et Al., Defendants-Appellees.*

⁷⁹ *Vincent M. Piazza, Et Al. V. Major League Baseball, Et Al.*

⁸⁰ *New Orleans Pelicans Baseball, Inc. Versus the National Association of Professional Baseball Leagues, Inc., Et Al.*

New Orleans territory, voiding the ownership group's agreement with Minor League Baseball. The ownership group argued the voided agreement violated antitrust law, but the case was dismissed based on lack of legal grounds. A similar scenario unfolded in 1999, after sports promoters arranged for a Minor League team to relocate to their city. After the governing Minor League organization did not approve the move, the sale fell through.⁸¹ The group of promoters claimed the action constituted an antitrust violation, but the court ruled in Minor League Baseball's favor.

These legal battles emphasize the lasting power of Major League Baseball's antitrust exemption and legally-sanctioned monopoly. The lawsuits offer further evidence of the antitrust exemption's persistence in the face of numerous legal challenges. Whether owners were wanting to purchase a team, relocate a team, or receive agreed-upon compensation, the antitrust exemption was interpreted and enforced in ways that preserved Major League Baseball's power over Minor League Baseball. As argued in the previous section of the dissertation, who would be allowed to join the community of team owners and reap the attendant economic benefits was repeatedly decided by existing Major and Minor League owners.

The antitrust exemption was enforced in ways that pitted Minor League owners against Major League owners. At the same time, it also pitted Minor League owners against each other. The Minor League classification system created a hierarchy in which more-advanced Minor League teams could prey on less-advanced Minor League teams. Lawsuits like those filed by the New Orleans Pelicans in 1994 and Baseball at Trotwood in 1999 show how that hierarchy

⁸¹ *Baseball at Trotwood, Llc, Et Al., Plaintiffs, Vs. Dayton Professional Baseball Club, Llc, Et Al., Defendant; Baseball at Trotwood, Llc, Et Al., Plaintiffs-Appellants, V. Dayton Professional Baseball Club, Llc, Et Al., Defendants, the Cincinnati Reds, Et Al., Defendants-Appellees.*

negatively impacted less-advanced Minor League teams. Those lawsuits also highlight how Minor League owners and Minor League Baseball's executive office at times have exhibited many of the same behaviors that led Minor League teams to challenge Major League Baseball's antitrust exemption. Minor League owners in 1901 had sufficient common interests to band together and form a formal association (the NAPBL, now known as Minor League Baseball). However, in the second half of the twentieth century, U.S. professional baseball's labor politics created friction within the Minor League owner community. That dynamic lessened the chance that Minor League owners would be able to present a united front in their increasingly frequent battles with Major League owners.

As outlined in the previous section of the dissertation, Minor League Baseball's hierarchical classification structure became increasingly standardized after World War II. While the general structure has remained largely unchanged, a few key developments from the post-War period directly impacted Minor League Baseball's global reach. Founded in the 1920s, Liga Mexicana de Béisbol (LMB, translated Mexican Baseball League) came under the auspices of Minor League Baseball in the 1950s and was promoted to AAA classification in 1967. As discussed in the previous section, the affiliated Minor League structure and the associated Player Development Contracts require all Minor League teams to have formal affiliations with a Major League team. In contrast, Liga Mexicana de Béisbol is officially part of Minor League Baseball but does not have formal affiliations with any Major League team. As a contrasting example of Minor League Baseball's global presence, the Foreign Rookie League classification emerged in the late 1990s and by the 2000s was a standard part of Minor League Baseball's classification system. Taken together, Liga Mexicana de Béisbol and the Foreign Rookie League classification

are the primary mechanisms through which Minor League Baseball teams have established an increasingly global presence.

Incorporating Minor League data complicates a North American-centric view of U.S. professional baseball team locations.⁸² As Figures 33 and 34 illustrate, since the 1960 season, U.S. professional baseball teams have been located in Australia, Canada, the Dominican Republic, Japan, Panama, Puerto Rico, and Venezuela.⁸³ However, Figures 33 and 34 also illustrate how the teams located outside Northern America are exclusively Minor League teams. The 76 Major League teams located outside the U.S. have been in Canada, making Major League teams a distinctly North American phenomenon. In contrast, Minor League teams affiliated with the “national pastime” have existed in Latin America and the Caribbean, Australia, and Asia. Minor League teams’ global presence questions the degree to which U.S. professional baseball can accurately be described as a “national” pastime. Figure 35 illustrates how those global team locations have developed over time, and Figure 36 emphasizes the reality that Minor League teams constitute the growing number of teams located outside Northern America.

Figures 37 and 38 depict the spatial distribution of U.S. professional teams through the second half of the twentieth century. Those visualizations illustrate the overwhelming concentration of teams within Northern America, specifically within the U.S. Figure 38

⁸² In these visualizations a team is defined as a single entity that fielded a professional baseball team in a single season—the total number of teams are cumulative and include duplicate counts for teams that played multiple years. For example, Australia fielded two teams in both the 2000 and 2001 seasons. In these visualizations, the total number of teams from Australia is represented as four teams.

⁸³ Many of the visualizations in this section feature stacked bar charts. The reader is forewarned that the Y axis scale in those stacked bar charts can vary within the same charts. This variance is necessary to make visible the comparative number of teams and players located outside Northern America and Latin America and the Caribbean. Putting all those values on the same bar chart presents such a wide range that the smaller (under 500) values are not clearly visible.

compares the number of Major and Minor League teams located in each country, highlighting the degree to which the most-advanced U.S. professional teams—Major League teams—are located exclusively in North America. Figure 39 looks at the geographic distribution of Major and Minor League teams within the U.S., highlighting the total number of Major and Minor League teams located in each state. Given the limited number of Major League teams, many states have never been home to a Major League team. Some states like North Dakota, South Dakota, and New Mexico have fielded a small number of Minor League teams. In contrast, other states like New York, Pennsylvania, and Texas have a high concentration of both Major and Minor League teams. The number of teams resulting from the Minor League system's growth has allowed states without significant Major League history or connection to support a Minor League team.

Parsing those trends across classification levels provides greater nuance for team locations' shifting geographies. While the number of least-advanced Minor League teams grew during the 1970s, those teams were located primarily in the southeastern and Appalachian regions of the U.S. In contrast, the least-advanced Minor League teams that emerged in the 1990s were part of the newly-formed Foreign Rookie League classification. The significant globalization that has taken place in U.S. professional baseball over the last three decades has taken place largely at the Minor League level, and specifically at the least-advanced level of the Minor Leagues. Figure 40 illustrates those aggregate trends by decade. In the 1960s, Minor League teams were located solely in the U.S. and Canada. As the Foreign Rookie leagues emerged in the 1990s and Minor League Baseball attempted other types of global affiliation experiments, the number of Minor League teams located outside the U.S. increased. While the number of Minor League teams located outside the U.S. has increased, the total number of Minor

League teams has also grown since the 1960 season (see Figure 40). As illustrated in Figure 40, the growing number of Minor League teams has increased U.S. professional baseball's global presence, while also increasing the number of teams located in the U.S.

However, Figure 41 illustrates how the Minor League teams located outside the U.S. are almost exclusively at the least-advanced Minor League classification levels. Figure 42 represents that data as a spatial visualization, illustrating the overall density of Minor League teams, compared to the limited number of Major League teams. Additionally, Figure 42 emphasizes how the teams located outside North America represent the least-advanced Minor League classification levels. This data might seem to contradict Gilbert's argument that Major League owners responded to free agency by capitalizing on new sources of players and fans. If U.S. professional baseball wanted to build new global fan markets, a better strategy might have included placing more-advanced teams in new global markets to more effectively build global fan interest. Instead, the strategy implemented by U.S. professional baseball drives global fan traffic and revenues back to existing Major League teams. By formalizing an international player development system, Major League Baseball is presented as the pinnacle of professional baseball achievement. Rather than global teams or leagues being the ultimate destination for elite players, Minor League Baseball's global reach inserts the U.S. professional baseball hierarchy into countries and regions that often already have their own professional baseball organizations. Thus, global fans following their local players might eventually become fans of the U.S. professional team those players join, driving revenue back to Major League Baseball.

This analysis of Major and Minor League team locations makes clear the global scope of U.S. professional baseball. For example, Figure 43 shows how the number of U.S. professional teams located in Canada has increased since the 1960 season, including both Major and Minor

League teams. Figure 44 shows the same change over time for Minor League teams located in Latin America and the Caribbean. While U.S. professional baseball might be described as the “national pastime,” the number of Minor League teams located outside the U.S. complicates any characterization of U.S. professional baseball as being uniquely or exclusively “American.”

To further examine those trends, Figure 45 illustrates how Major League teams have been located exclusively in Canada and the U.S. By comparison, Figure 46 shows how the increasing number of AAA-level teams driven by Major League expansion have been located almost exclusively in the U.S. and Canada. That trend continues at the AA and A levels (see Figures 47 and 48). The total number of Minor League teams increases, but those teams are located almost all located in the U.S. and Canada. Only at the least-advanced levels of the Minor League system (Rookie and Foreign-Rookie) does the increasing number of teams located outside the U.S. and Canada become clear (see Figure 49). Figure 49 provides another way of visualizing the reality the global reach of Minor League Baseball teams occurs only within its least-advanced classification levels.

In many dominant narratives, locating teams outside the U.S. provides opportunities for prospective players to access the financial, social, and cultural mobility a Major League career might offer. However, that framing misrepresents and obscures Major League Baseball’s complex history with global forms of organized baseball. As Ruck, Burgos, and others have outlined, U.S. professional baseball in the early twentieth century had no qualms about accepting players born outside the U.S.—provided those players were able to pass as white.⁸⁴ Additionally,

⁸⁴ Burgos; Ruck, *Raceball: How the Major Leagues Colonized the Black and Latin Game*.

existing baseball scholarship has documented the thriving baseball cultures that have existed outside the U.S.⁸⁵

One way forward could have been partnerships or collaborations that supported professional baseball organizations outside the U.S. However, Major League Baseball's approach to engaging other baseball organizations denied the legitimacy of those global organizations, or their ability to compete with Major League Baseball on the global market. For example, the Brooklyn Dodgers filed a lawsuit in 1946 charging two Mexican scouts with inducing players under contract with the Dodgers to break their contracts and sign with Mexican League teams.⁸⁶ The court ruled in Brooklyn's favor. Looking to forestall similar legal actions, Major League Baseball enacted strict regulations prohibiting players currently under contract with a Major or Minor League team from playing in any capacity for an international professional team, even if doing so did not directly impact their ability to fulfill their Major or Minor League contractual obligations.⁸⁷ Players who sought better working conditions and increased compensation with organizations like the Mexican League found themselves subsequently blacklisted by U.S. professional baseball.⁸⁸

However, when the opportunity emerged for Liga Mexicana de Béisbol to become formally affiliated with Minor League Baseball, U.S. professional baseball raised no objections

⁸⁵ Chetwynd; Ruck, *The Tropic of Baseball: Baseball in the Dominican Republic*; *Raceball: How the Major Leagues Colonized the Black and Latin Game*; Reaves; Obojski; Robert F. Lewis, *Baseball as a Global Business: Balancing Power* (Oxford: University Press of Mississippi, 2009); Frank P. Jozsa, *Baseball Beyond Borders: From Distant Lands to the Major Leagues* (New York: Scarecrow Press, 2013); González Echevarría.

⁸⁶ *Brooklyn Nat. League Baseball Club V. Pasquel*, 66 F. Supp. 117 (E.D. Mo. 1946).

⁸⁷ Burgos; Ruck, *Raceball: How the Major Leagues Colonized the Black and Latin Game*.

⁸⁸ Burgos; Ruck, *Raceball: How the Major Leagues Colonized the Black and Latin Game*.

to an arrangement that expanded global presence and opened new labor sources. In many parts of Latin America and the Caribbean, the Foreign Rookie League teams established by Minor League Baseball displaced local professional and semi-professional teams, whose players saw greater potential for future profit through seeking opportunities in U.S. professional baseball. Even in countries and regions with thriving baseball operations, U.S. professional baseball has shown no qualms about asserting its own global presence via Minor League teams. Those measures position Major League Baseball as the highest (and most financially-lucrative) option for global professional baseball players.

Rather than approach globalization by partnering with existing international baseball organizations, U.S. professional baseball's attitude toward other baseball organizations might best be interpreted as a unilateral global application of their domestic antitrust exemption. That exemption has allowed Major League Baseball to bar other teams and leagues in the U.S. from establishing themselves as true competitors. Major League Baseball displays the same attitude in its dealings with global baseball organizations—coexistence is possible to the degree it does not threaten Major League Baseball's position in the global market. Other baseball governing bodies like the International Baseball Federation and Pan-American Baseball Confederation collaborate regularly and partner for events like the World Baseball Classic, the World Baseball Cup, and Olympic Games. In contrast, U.S. professional baseball has repeatedly restricted players' ability to participate in the World Baseball Classic and other forms of international baseball competition.

U.S. professional baseball's complex relationship with other baseball organizations is one of many tactics used to assert sovereignty over territory. These tactics are deployed in ways that avoid substantively collaborating with or acknowledging the sovereignty of other global baseball

structures. The Minor Leagues' Foreign Rookie classification represents another method used to assert U.S. professional baseball's global presence. A third way in which U.S. professional baseball asserts its global presence is the development of the Latin American academy system. First established in the 1970s after the first wave of Dominican-born players had increasing Major League success, the academy system represents another method of spatial colonization U.S. professional baseball has developed to facilitate identifying and controlling additional labor sources.

Prospective professional baseball players born in the U.S. are governed a complex series of regulations that address amateur status, collegiate athletics, and professional contract eligibility. As Marcano and Fidler have pointed out, the academy system is explicitly designed to prey on underage talent.⁸⁹ Indeed, in the Collective Bargaining Agreements and other governing documents, very little directly address the academy system. In contrast, U.S. professional baseball's only stipulation when offering contracts to players born outside the U.S. is that the player be 18 years of age or turn 18 during the contract's first year. Players who sign a Minor League contract benefit from some degree of Minor League-wide labor regulation. By comparison, no similar policies or documents govern the academy system, in which players under the age of eighteen routinely enter into formal agreements with U.S. professional teams.

In the academy system, underage players live in facilities where there living and playing conditions have little, if any, regulation and organizational oversight. Marcano and Fidler make

⁸⁹ Arturo J. Marcano and David P. Fidler, "Baseball's Exploitation of Latin Talent," *NACLA*, 2007, <https://web.archive.org/web/20190228184913/https://nacla.org/article/baseballs-exploitation-latin-talent>; Ian Gordon, "Inside Major League Baseball's Dominican Sweatshop System," *Mother Jones*, 2013, <https://web.archive.org/web/20180128121516/https://www.motherjones.com/politics/2013/03/baseball-dominican-system-yewri-guillen/>.

this point vividly, outlining the career endingly-poor medical treatment Alexis Quiroz received while playing for a Dominican summer league team.⁹⁰ The most recent Collective Bargaining Agreement requires all Major and Minor League teams to make a certified medical trainer available to players. No such requirement exists for the academies, a fact mentioned repeatedly in media coverage of the 2011 death of Dominican prospect Yewri Guillén.⁹¹ While public calls for greater transparency and regulation followed these incidents, U.S. professional baseball did not take concrete action. Greater regulation of the academy system and international player recruitment are topics that could be addressed via collective bargaining. However, as with topics relating to Minor League labor, collective bargaining negotiations have not made the academy system or international player recruitment a substantive issue in negotiations.

The extent to which U.S. professional baseball has significantly invested in the Latin American academy system indicates U.S. professional baseball's reliance on extractive colonial economic systems, as evidenced by a player development system that mines the Latin American and Caribbean global south for prospective professional baseball players. U.S. professional baseball has made significant investments in Latin American and Caribbean player recruitment and development systems. That regional focus contrasts sharply with their other global engagement strategies. In contrast, international signings for players not from Latin America go through a very different intake process. The small number of Australian professional players who have signed MLB contracts are signed as undrafted free agents, outside a brief attempt to

⁹⁰ Arturo J. Marcano and David P. Fidler, *Stealing Lives: The Globalization of Baseball and the Tragic Story of Alexis Quiroz* (Bloomington, IN: Indiana University Press, 2002).

⁹¹ Gordon, "Inside Major League Baseball's Dominican Sweatshop System."

establish a formal Minor League affiliation structure with Australian Baseball League teams.⁹²

The enduring outcome of that affiliation experiment is Major League Baseball's Australia Academy Program, a seven-week player development program for Australian players who go on to be signed as undrafted free agents or play professional in the ABL.⁹³ The limited scope of the Australia Academy Program (founded in 2001), as well as similar MLB academy programs in Italy (established in 2005) and China (2007), stands in stark contrast to the extensive Latin American academy system, whose labor practices target underage workers and operate with minimal regulation or transparency.

In response to Major League Baseball's decision to focus on Latin America and the Caribbean as sources of professional baseball labor, other professional baseball organizations outside the United States have explored alternative possibilities and avenues for their players to achieve competitive and commercial success. As an example, the Australian Baseball League and Baseball Australia partnered with the Korea Baseball Organization (KBO) to add an Australia-based Korean team to the Australian League. Geelong-Korea debuted as part of the Australian Baseball League in the 2018 season, and through a partnership with MLB Advanced Media, MLB TV, ABL TV, and KBO, stream the team's games for an international audience. According to Australian Minister for Sport, John Eren, the partnership between the two nation's baseball organizations "will boost the profile of the game in Victoria, bring extra excitement into the competition, and act as a pathway for our talented baseballers to join overseas clubs."⁹⁴ The

⁹² Baseball Australia, "Mlb Australian Academy Program," *Baseball Australia*, n.d., <https://web.archive.org/web/20180812064534/http://baseball.com.au/Events/MLB-Australian-Academy-Program>.

⁹³ Ibid.

⁹⁴ The ABL.com, "Geelong to Base Korean Team," *TheABL.com.au*, 2018, https://web.archive.org/web/20181009163331/http://web.theabl.com.au/news/article.jsp?ymd=20180614&content_id=281217956&fext=.jsp&vkey=news_abl.

full ramifications of Major League Baseball's global presence continue to unfold as conversations around international baseball partnerships like the Australia-Korea collaboration and the World Baseball Classic continue, and baseball is posed to return to the XXXII Olympic Summer Games in 2020. As those negotiations around global baseball organizational structures continue, U.S. professional baseball persists in relying on extractive labor practices in the Dominican academy system that targets underage workers and violates the sovereignty of existing foreign baseball organizations/operations in ways that continue to reshape the contours of organized baseball outside the United States.

The Shifting Origins of U.S. Professional Baseball's Labor Force

Team locations represent one way in which globalization has reshaped U.S. professional baseball in the second half of the twentieth century. However, where Major and Minor League players are born also emphasizes the significant impact of globalization on U.S. professional baseball. After U.S. professional baseball became increasingly regulated and structured in the early twentieth century, Major and Minor League owners exercised a significant degree of control over players' contracts, assignments, playing time, and compensation levels. The MLBPA's labor activism in the 1960s and 1970s increased player agency, via labor victories that had a positive impact on Major League players' working conditions. As Gilbert argues, owners responded to those shifting power dynamics by reimaging their approach to player development and identifying additional sources for inexpensive player labor.⁹⁵ Globalization of Minor League team locations are one manifestation of that effort. An increasingly global labor pool is also directly connected to Major and Minor League owners' attempts to secure new, inexpensive

⁹⁵ Gilbert.

sources of player labor. As Ruck and others have argued, U.S. professional baseball's attitude toward player development has a long history of colonizing available player labor, with little if any regard for other organized baseball structures.⁹⁶ The spatial dimensions of those processes include team locations, but they are shaped directly by how players move organizational structures and across national boundaries.

To provide a sense of overall perspective, nearly 30% of the players who have played U.S. professional baseball between the 1960 and 2016 were born outside Northern America. Further analyzing that 30% figure emphasizes how the globalization of player birthplaces has occurred largely over the last twenty years. Looking at both Major and Minor League players, Figure 50 illustrates that, while most players are born in Northern America, a significant number of players are born in Latin America and the Caribbean. By comparison, the number of players born in Europe, Africa, Oceania, and Asia is relatively low. Still, the data presented in Figure 50 emphasize the truly global dimensions of U.S. professional baseball labor. To more fully understand the globalization of player labor, Figure 50 breaks down the number of Major and Minor League players born in specific global regions. Looking just at Major League players, over 8,000 have been born in Northern America, compared to over 1,500 in Latin America and the Caribbean. In contrast, only 87 Major League players have been born in Asia, 45 in Europe, and 31 in Oceania.⁹⁷ Even when just considering 10% of the total labor pool, U.S. professional baseball labor is undeniably global in scope. Figure 50 also illustrates the total number of Minor

⁹⁶ Ruck, *Raceball: How the Major Leagues Colonized the Black and Latin Game*; Burgos.

⁹⁷ The first African-born player to reach the Major Leagues, Gift Ngoepe, did so in the 2017 season. See also: Reuters, "First African-born MLB player gets hit in debut," *Reuters Africa*. 27 April 2017. <https://web.archive.org/web/20190212040631/https://af.reuters.com/article/sportsNews/idAFKBN17T0S1-OZASP>.

League players born in these global regions. As expected, Northern America and then Latin America and the Caribbean have the highest number of players born in those regions, with 34,830 Minor League players born Northern America and 13,713 in Latin America and the Caribbean. By comparison, 31 Minor League players have been born in Africa, 378 in Asia, 221 in Europe, and 293 in Oceania. As demonstrated by data, global representation in U.S. professional baseball labor has moved beyond mere tokenism. A substantive number of players are born outside Northern America, representing a truly global labor pool.

Figure 51 begins to parse those trends over time, focusing on players born in Latin America and the Caribbean and Northern America. Of Major League players who played in the 1960 season, 44 were born in Latin America and the Caribbean and 522 were born in Northern America. In the 2016 season, 327 Major League players were born in Latin America and the Caribbean and 987 were born in Northern America. To make that comparison using Minor League data, in the 1960 season, 158 Minor League players were born in Latin America and the Caribbean, compared to 1,495 born in Northern America. In the 2016 season, 2,988 Minor League players were born in Latin America and the Caribbean, compared to 4,177 born in Northern America.

The total number of Minor League players born in Latin America and the Caribbean has increased significantly over the last twenty years (see Figure 52). However, the number of Major League players born in that region has not increased at a proportional rate (see Figure 52). Similarly, a very small number of Major League players come from regions like Africa, Oceania, Europe, and Asia (see Figure 53), despite the increasing presence of players from those regions at the Minor League level (see Figure 54). Figure 52 provides further detail of how those numbers shifted over time, using ten-year intervals to compare the number of Major and Minor

League players born in Latin America and the Caribbean and Northern America. The trends presented in Figure 52 show increasing numbers of Minor League players born in Northern America—an expected trend. However, the visualization also makes clear how the most dramatic increase in global representation has occurred at the Minor League level.

Looking at the Major and Minor League divide over time emphasizes the increasing overall number of players, as well as the increasing ratio of players born outside Northern America. However, these globalization trends must be considered through the lens of U.S. professional baseball's hierarchical labor structure, to better understand how labor globalization has reshaped the player labor force in both the Major and Minor Leagues. Given the number of data points represented in these visualizations (nearly 100,000), a significant degree of aggregation is needed to make sense of the large-scale data set. However, focusing on "slices" of the data illustrates how those larger globalization trends are inflected across classification levels and specific global regions.

At the aggregate level, Minor League players far outnumber Major League players, regardless of birth location. Drilling down into the specific classification levels, globalized labor practices reveal the ways in which players born outside Northern America are less likely to reach a Major League roster than their North American-born counterparts. Nearly all players who have played on Foreign Rookie League teams were born in Latin America and the Caribbean (see Figure 55). By comparison, of the players who have played on Rookie League teams, only 30% were born in Latin America and the Caribbean (see Figure 55). While most players on Foreign Rookie and Rookie League teams were born either in Latin America and the Caribbean or Northern America, Figure 56 illustrates the other global regions represented in those classification levels. Players born in Africa, Asia, Europe, and Oceania are present in the Foreign

Rookie and Rookie League levels, and their numbers have also increased over the last twenty years. However, Figure 56's scale compared to the number of players represented in Figure 55 indicates the relatively small number of players born in these other global regions. While present, players born in Africa, Asia, Europe, and Oceania do not have the same level of representation as players born in Latin America and the Caribbean and Northern America. Furthermore, the change over time in their degree of representation does not exhibit the same growth patterns observed for Latin America and the Caribbean and Northern America (see Figure 55).

Figure 57 presents the number of players at the A+, A, and A- levels born in Latin America and the Caribbean and Northern America. In the analysis of the Rookie and Foreign Rookie Leagues, the past twenty years of growth show the most dramatic increase for players born in Latin America and the Caribbean. In contrast, the growth represented in Figure 57 shows an increasing number of players who play for an A level team were born in Northern America. The number of players born in Latin America and the Caribbean does increase during the same period, but it is still over shadowed by the number of players born in Northern America. Players born in Africa, Asia, Europe, and Oceania are represented on A-level teams, and their numbers have increased over the past twenty years (see Figure 58).

However, few distinct trends emerge in that visualization, which ultimately represents a limited number of players out of the larger A-level pool. Placing Figures 55 and 57 side-by-side reveals an intriguing trend. Players born in Latin America and the Caribbean appear with increasing frequency at the least-advanced Minor League levels (Foreign Rookie and Rookie). However, their increased presence is not reflected in the demographics of A-level players. While the number of players at the A level has grown significantly, that growth does not reflect the same type of transformation taking place at the Foreign Rookie and Rookie League levels. That

discrepancy is significant because moving up the Minor League hierarchy is the primary way by which Minor League players are eventually able to join a Major League team.

Those discrepancies continue at more-advanced Minor League classification levels.

Figure 59 outlines the number of players at the AA-level born in Latin America and the Caribbean and Northern America, and Figure 60 presents the same data for AAA-level players. Similar, if less dramatic, trends emerge. The overall number of AA and AAA players has increased notably over the last twenty years. However, that growth is most notable for players born in Northern America. At the Rookie and Foreign Rookie League levels, players born in Latin America and the Caribbean significantly outnumber their North American counterparts. But when looking at the composition of more-advanced Minor League team classifications, that proportion does not hold true. The number of Latin American and Caribbean players does increase at the A, AA, and AAA levels over the last twenty years. But the Foreign Rookie and Rookie League representation trends never reappear in more-advanced levels of the Minor League hierarchy.

Nearly 100% of the players who play for Foreign Rookie League teams are born outside Northern America. That number goes to 30% at the Rookie League level and 20% at the A level. At the AA and AAA levels, fewer than 20% of players are born outside Northern America. By comparison, only 15% of Major League players are born outside Northern America. As illustrated in Figure 61, despite the overall increase in the number of players born in Latin America and the Caribbean, the overwhelming majority of those players have only played on Minor League teams and have not experienced proportional increases at the Major League and advanced Minor League levels. In contrast, Figure 62 shows how the number of players born in

Northern America has increased over time and maintained a significant presence at the Major League and advanced Minor League levels.

These numbers illustrate how the global scope of U.S. professional baseball labor is directly influenced by labor practices that concentrate players born outside Northern America in the least-advanced Minor League levels. Rather than create expanded global opportunities at the Major League level or at more-advanced Minor League levels, U.S. professional baseball has built the Minor League system to prey on global labor. To illustrate those changes over time, Figure 63 shows how the overall number of Minor League players has increased from 1960 to 2016. However, the visualization also makes clear how the majority of that growth has benefited players born in Northern America, followed by players born in Latin America and the Caribbean. To look at those numbers another way, the greatest number of players born outside Northern America are found at the least-advanced Minor League levels. And as argued in the previous section of the dissertation, the longest and most stable careers in U.S. professional baseball are experienced only by players who advanced to the Major League level. Thus, the players born outside Northern America experience the least stable professional careers.

To illustrate that transformation via spatial visualization, Figures 64 and 65 present heatmaps of Major and Minor League player birthplaces for players who were active in the 1960 season. The heatmap presented in Figure 64 shows Major League players born largely within Northern America, with a few clusters throughout Latin America and the Caribbean. The heatmap presented in Figure 65 shows a similar distribution, with most Minor League players birthplaces concentrated in Northern America. However, more dense clusters are visible in Latin America and the Caribbean, indicating that even in 1960 Minor League Baseball's labor force had a global reach. In contrast, Figures 66 and 67 present heatmaps of Major and Minor League

players birthplaces for players who were active in the 2016 season. Figure 66 shows how the densest concentration of Major League player birthplaces has shifted from the northeastern U.S. to the southwestern U.S. The less-dense clusters visible in Latin America and the Caribbean in the 1960 map have become some of the densest clusters for player birthplaces. Similarly, Figure 67 shows how the concentration of Minor League player birthplaces has shifted to place the densest clusters in the southwestern U.S. as well as in Latin America and the Caribbean.

Figure 67 illustrates the increasingly global Minor League baseball that has emerged since 1960. On one hand, the increasing number of players born in Latin America and the Caribbean is nominally reflected at the Major League level. However, this analysis more directly reinforces the small number of Major League and advanced Minor League opportunities available. Considered together, Figures 67 and 62 highlight the reality that the majority of these Major League and advanced Minor League opportunities are taken by players born in Northern America.

Conclusion

This section of the dissertation works to emphasize the “normal” within U.S. professional baseball labor. Rather than focusing on specific players, careers, seasons, or teams, the section’s analysis grapples with the large-scale implications of data that addresses those specific elements, clearly demonstrating the need to consider Minor League Baseball in discussions of U.S. professional baseball’s global presence and global labor pool. Doing so underscores a Minor League player development system that draws increasing numbers of players born outside Northern America but fails to provide significant opportunities for long-term career success and stability.

In addition to the precarity experienced by most Minor League players, those born outside Northern America face additional challenges, including language barriers, cultural or racial bias, and broader immigration debates that impact visa availability. As Elias argues, the global dimensions of U.S. professional baseball cannot be considered in isolation—U.S. geopolitics and foreign affairs are fundamentally intertwined with baseball labor's global dimensions.⁹⁸ Scholars like Elias, Burgos, and Ruck detail the impact U.S. foreign affairs have had on U.S. professional baseball labor, outlining how baseball as a tool of U.S. imperialism is inextricably connected with U.S. professional baseball's global reach to underscore the fundamental relationship between global markets and baseball labor.⁹⁹

However, most of that scholarship focuses almost exclusively on Major League teams and players, overlooking ninety percent of U.S. professional baseball labor. Major League players experience workplace benefits and protections not available to most Minor League players. For Major League players, things like minimum salary levels, free agency, grievance procedures, and other aspects of working conditions can be negotiated via collective bargaining and union representation. As argued elsewhere in this dissertation, Minor League players do not have access to those same benefits and resources. Since increasing numbers of Minor League players are born outside Northern America, the precarious conditions experienced by most Minor League players are impacting an already vulnerable pool of laborers.

The analysis presented in this section reinforces two themes. First, that Minor League players comprise the overwhelming majority of U.S. professional baseball labor. Second, that only a fraction of U.S. professional baseball players ever make it to the Major League level, and

⁹⁸ Elias, 2010.

⁹⁹ Burgos; Ruck, 2012. Elias.

most players spend their entire U.S. professional careers in a work environment not covered by basic workplace protections like minimum wage laws or overtime regulations. The spatial analysis taken up in this section demonstrates how, in the second half of the twentieth century, the precarious labor conditions experienced by nearly all Minor League players increasingly impact players born outside Northern America.

While existing baseball scholarship has addressed the U.S. professional baseball's increasingly global labor, most of that scholarship focuses on Major League players born outside Northern America, overlooking the significant number of global players who never play at the Major League level. Again, as Senne and Miranda argued in their class-action lawsuits, focusing only on the exceptional limits attention to the ordinary. That ordinary includes Minor League Baseball, which constitutes the majority of U.S. professional baseball's teams and players. Ordinary also includes the significant number of players whose careers start and end in the Minor Leagues. This section's analysis foregrounds Minor League Baseball as the primary site for globalized labor in U.S. professional baseball. While shifting labor dynamics, structures, and practices have certainly impacted and reshaped Major League Baseball, Minor League teams and players constitute 90% of U.S. professional baseball activities.

This section's analysis provides a more complete view on the relationship between U.S. professional baseball labor and globalization, firmly centering Minor League Baseball dynamic global site. The scope of Minor League labor is fundamentally connected to the spatial dimensions of U.S. professional baseball's labor practices. As increasing numbers of players born outside Northern America enter the Minor League player development system, disproportionately few of those players ever play at the Major League level. And the longest and most stable careers, and the workplace protections and benefits provided by a unionized

workforce, are only available to players who gain a minimum amount of time on a Major League roster. Most U.S. professional baseball players never become eligible for those opportunities and benefits, and that group of players increasingly includes players born outside Northern America. These global players are recruited into a system via minimally-regulated labor practices, and once in that system have little agency or control over their labor conditions and career prospects. And, as outlined in the previous section, the MLBPA the purportedly advocates on behalf of U.S. professional baseball players has largely overlooked the needs of any Minor League players, much less international Minor League players.

The inequitable distribution of resources, power, and capital within U.S. professional baseball disadvantages and disenfranchises Minor League players. This section's analysis illustrates how those power structures are increasingly experienced by Minor League players born outside Northern America. A lawsuit filed in 2000 by a group of former Minor League players from the Dominican Republic makes painfully clear the impact those inequitable labor structures and unregulated global labor practices can have. As underage youth in a Latin American academy, the plaintiffs were offered Minor League contracts, the next step toward a Major League career. The lawsuit alleged that a Major League team representative working at the academy "expressly conditioned their [the players'] continued employment and/or reassignment to U.S. teams on their submitting to his sexual advances and that he appropriated part of their earnings or signing bonuses for his personal use."¹⁰⁰ The case was dismissed by U.S.

¹⁰⁰ *Yan Carlos Ravelo Monegro; Nelson Rolando Gonzalez Sosa; Franklin Alvares Galvez; Rafael Micael De La Cruz; Francisco De Los Santos Heredia; Porfirio Alfred Vasquez Mota; Manuel Acevedo; Angel Esteban Guillen Solano; Carlos Celedonio Sujilio; Edelmiro Reyes Santana; Ignacio Henriquez De La Rosa; Fernando Romero; Tullio Miguel Lizardo Nolosco, Plaintiffs-Appellants, v. Luis Rosa; Jack Hiatt; San Francisco Baseball Associates, L.P., Dba San Francisco Giants, Defendants-Appellees.*

courts due to lack of jurisdiction, and the U.S. Supreme Court declined to hear the case in 2001. While a singular example, the case illustrates the structures of power and systems of inducement that compel Minor League players to enter into and remain in a system that does not adequately compensate their labor and frequently minimizes or disregards their agency and autonomy. The case also illustrates how players born outside Northern America are especially vulnerable in that structure.

More broadly, this section of the dissertation examines the relationship of labor and globalization within U.S. professional baseball in the second half of the twentieth century, emphasizing Minor League Baseball's centrality as a global labor site. The notion of U.S. professional baseball as any sort of "national pastime" makes claims about the sport's cultural significance and labor practices that are not supported by a close examination player and team data. A romanticized view of U.S. professional baseball as any sort of national unifier that reflects democratic or meritocratic ideals overlooks the inequitable labor structures at work in the Minor League system. That characterization overlooks the degree to which globalized labor U.S. professional baseball's player development system relies upon extractive colonial capitalist systems and in fact enables such labor practices to persist.

Figures

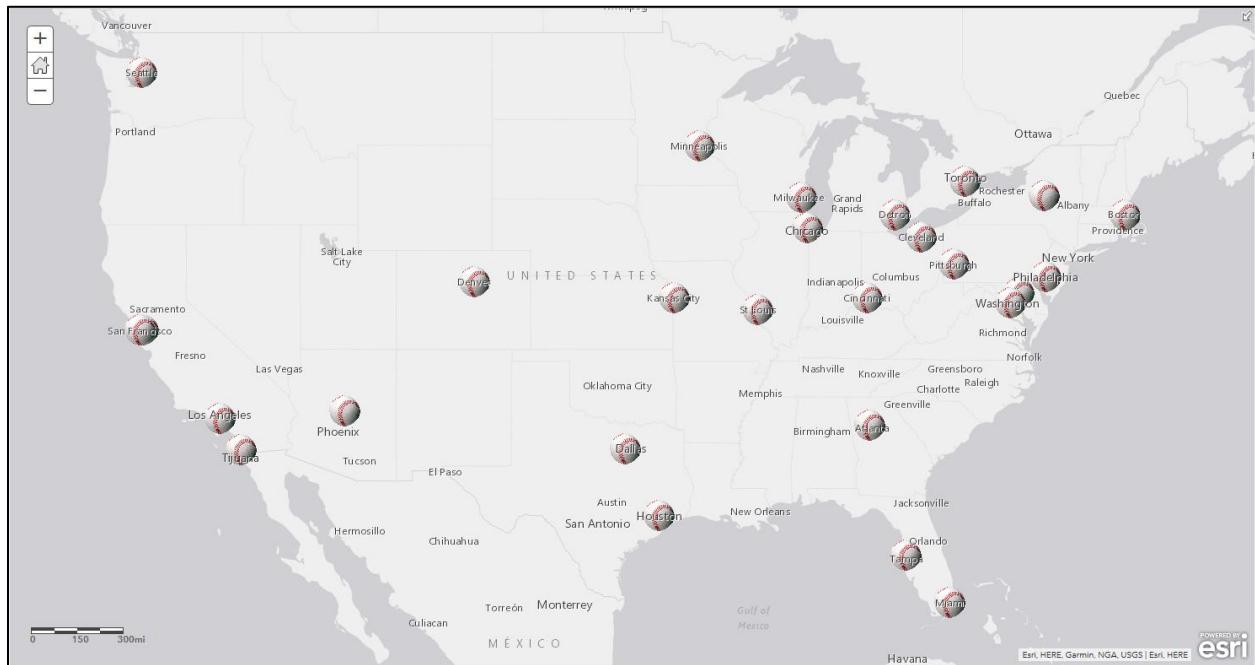


Figure 29. Map of Major League team locations in the 1960 season.

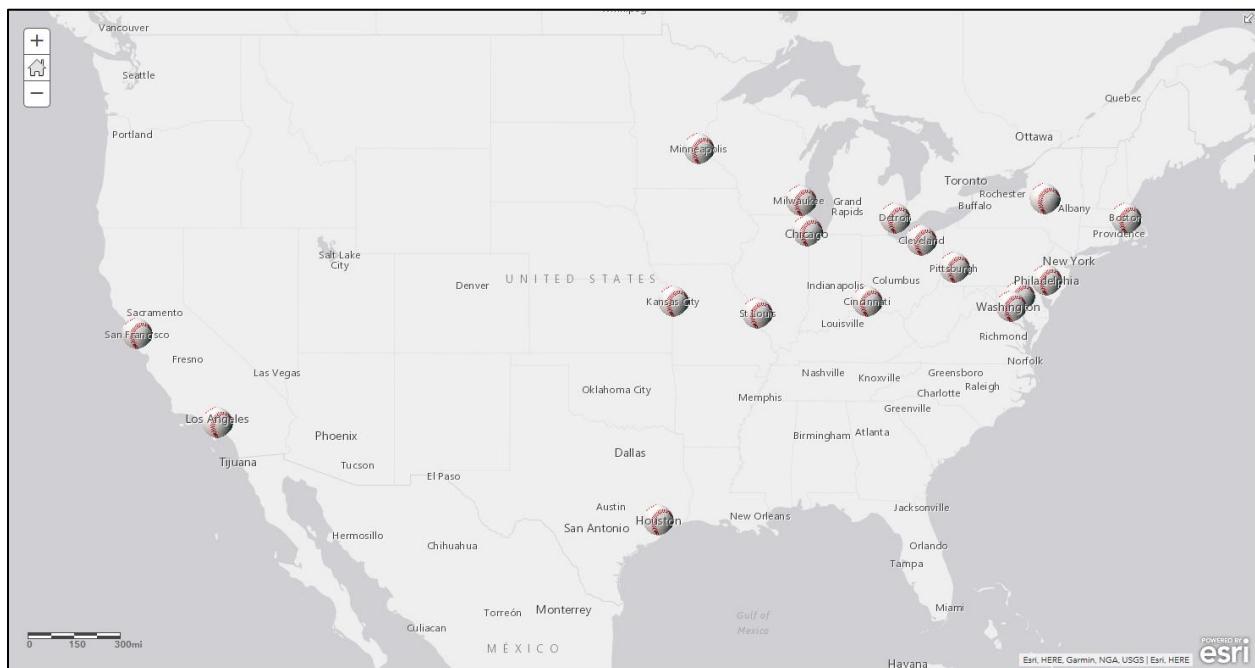


Figure 30. Map of Major League team locations in the 2016 season.

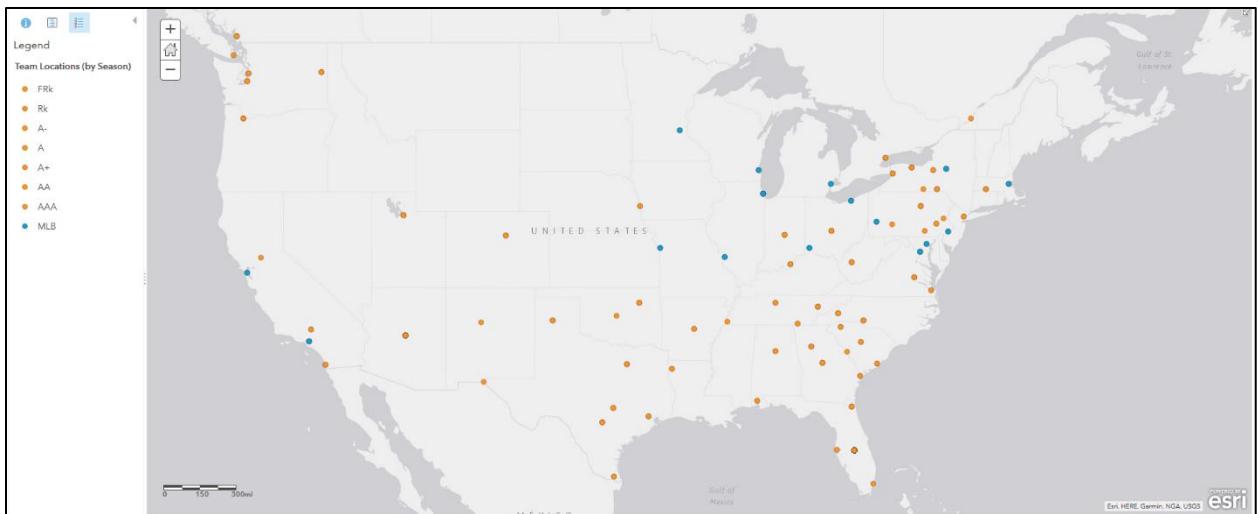


Figure 31. Map of Major and Minor League team locations in 1960 season.

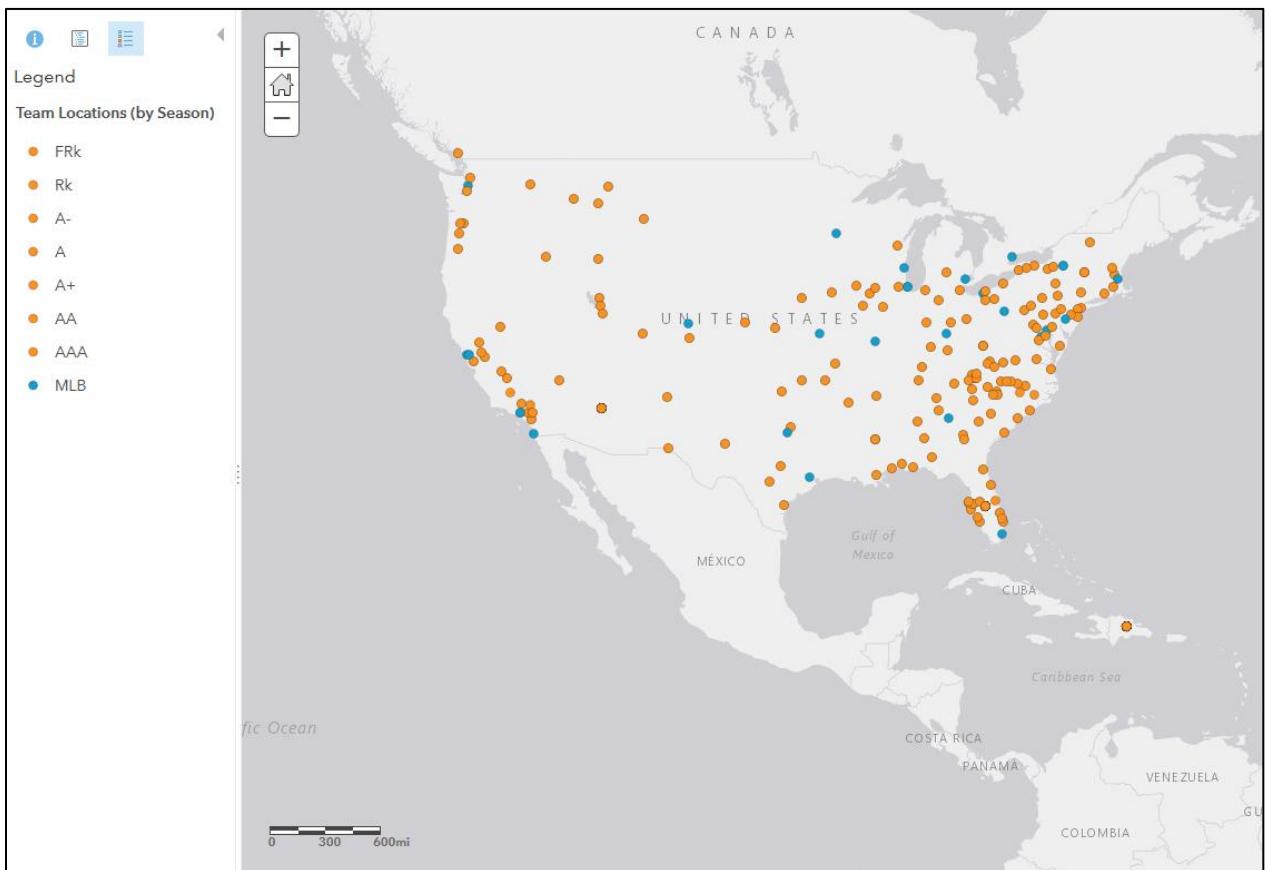


Figure 32. Map of Major and Minor League team locations in 2016 season.

Figure 33. Number of Major and Minor League Teams By Country (overall)

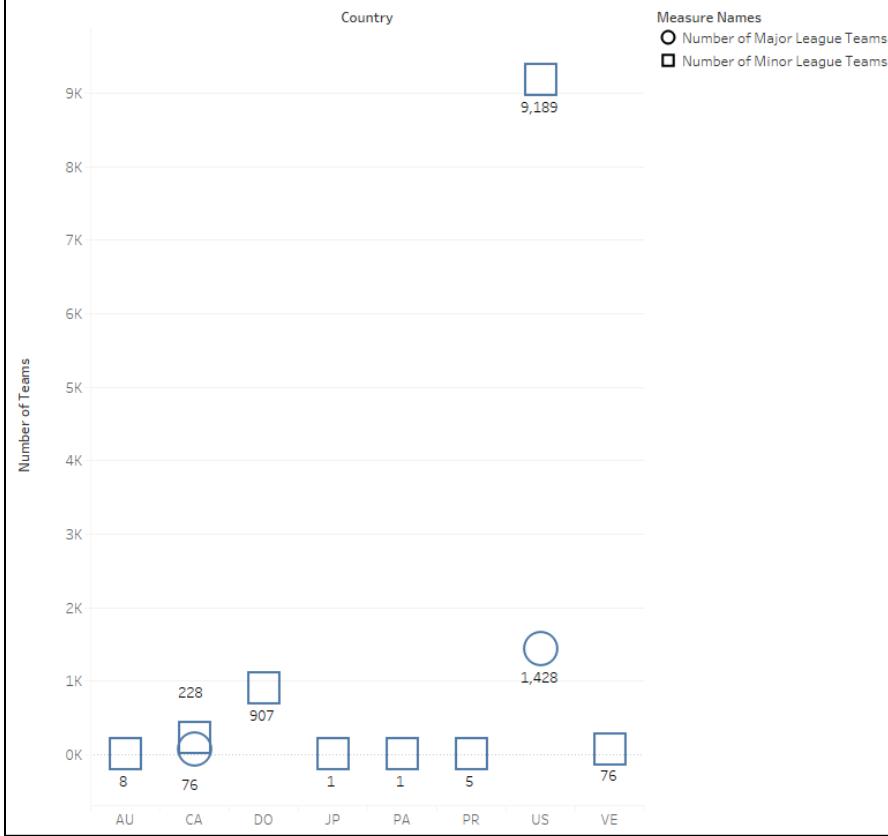


Figure 33. Number of Major and Minor League teams by country.

Figure 34. Total Number of Teams by Category and Country (overall)

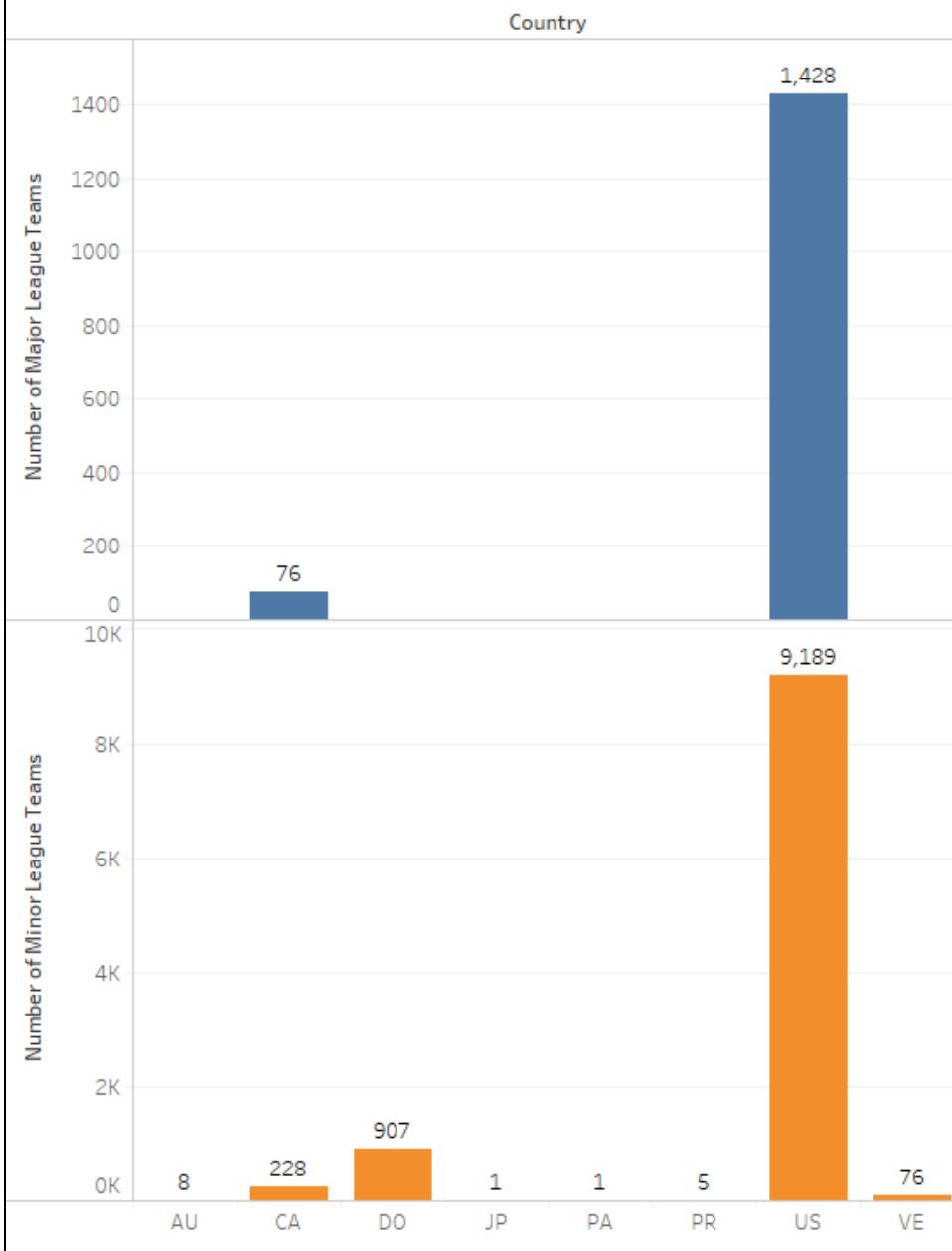


Figure 34. Total number of Major and Minor League teams by country.

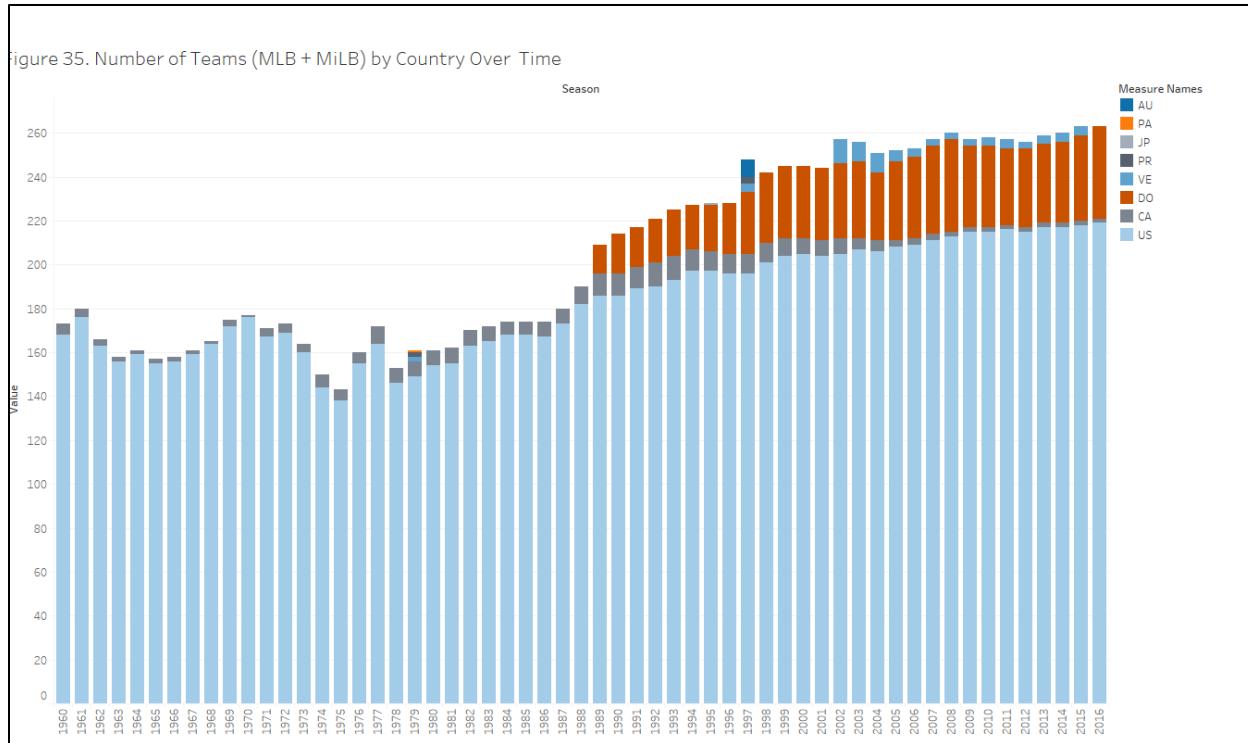


Figure 35. Number of Major and Minor League teams (combined) by location over time.

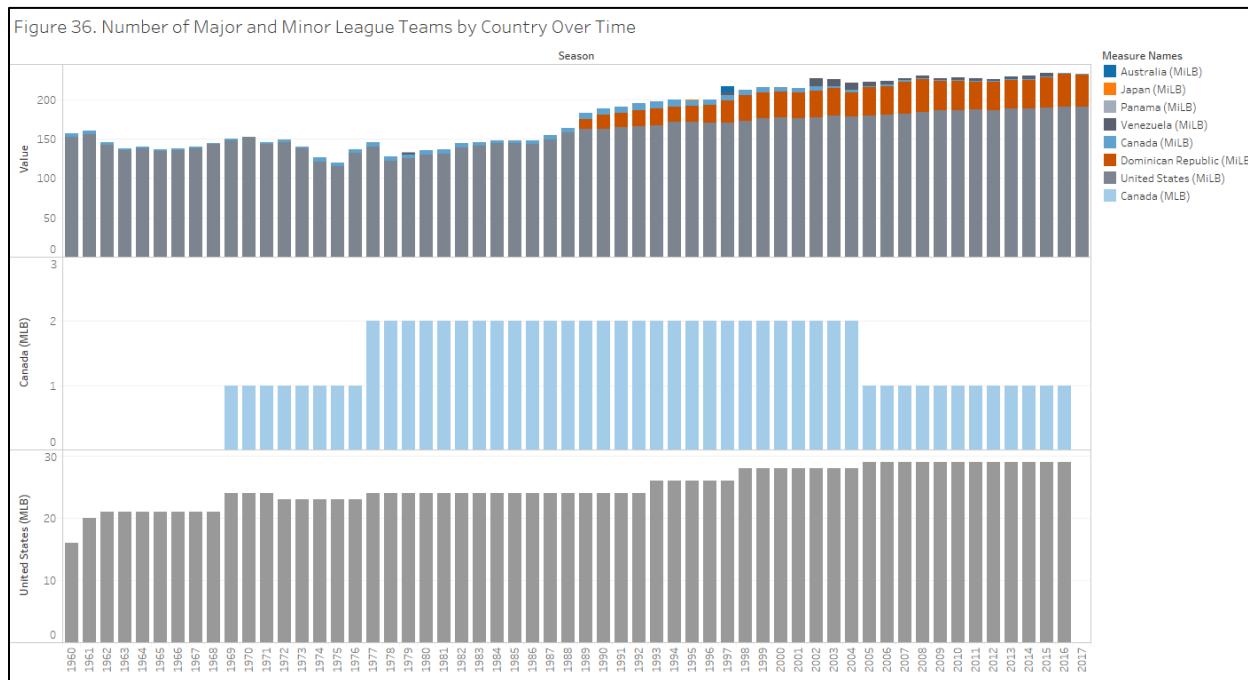


Figure 36. Major and Minor League teams by location over time.

Figure 37. Number of Teams By Country (MLB + MiLB), Overall

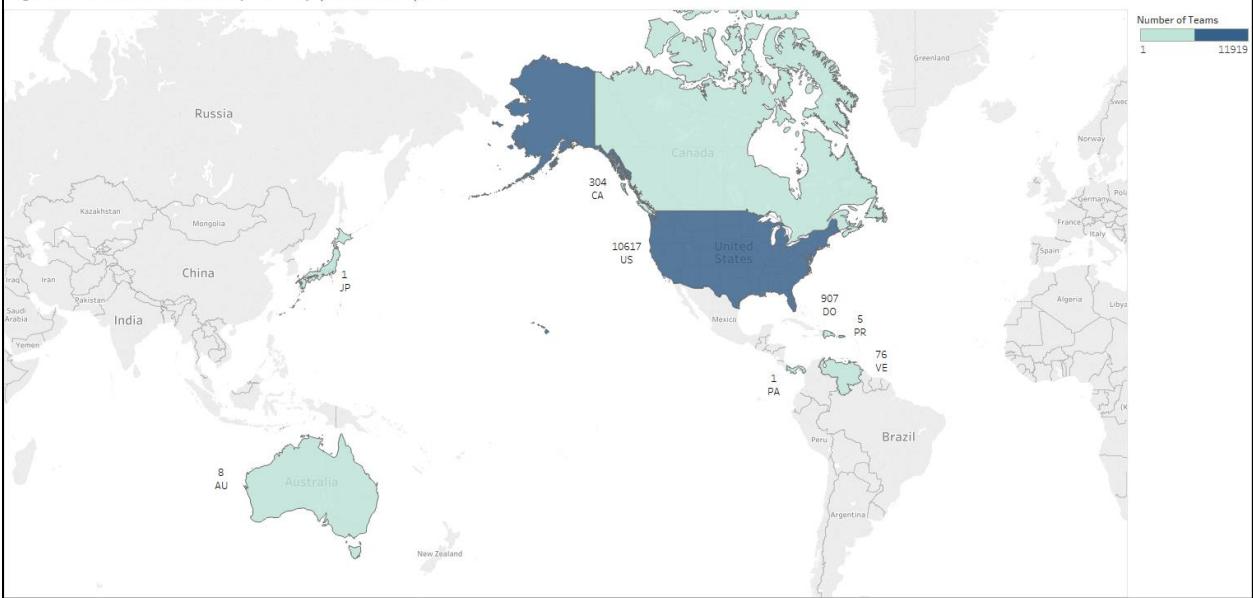


Figure 37. Number of MLB and MiLB teams (combined) by country.

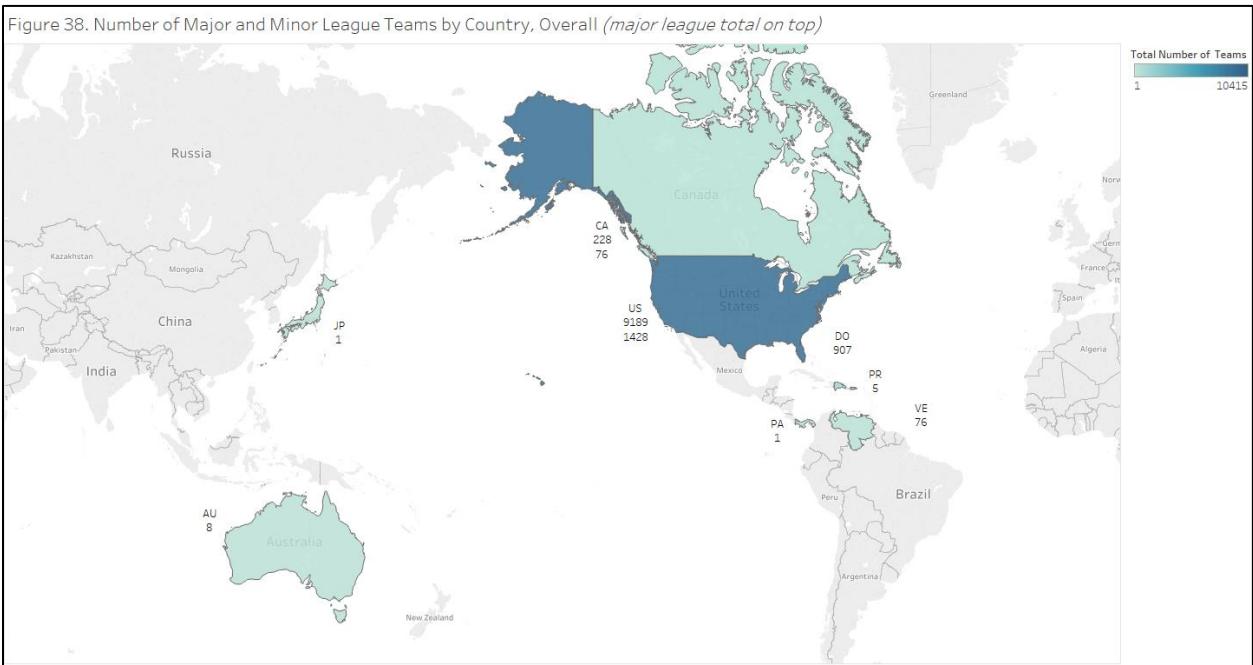


Figure 38. Number of Major and Minor League teams (distinct) by country.

Figure 39. Number of Major and Minor League Teams in the U.S., Overall By State (*Minor League total on top*)

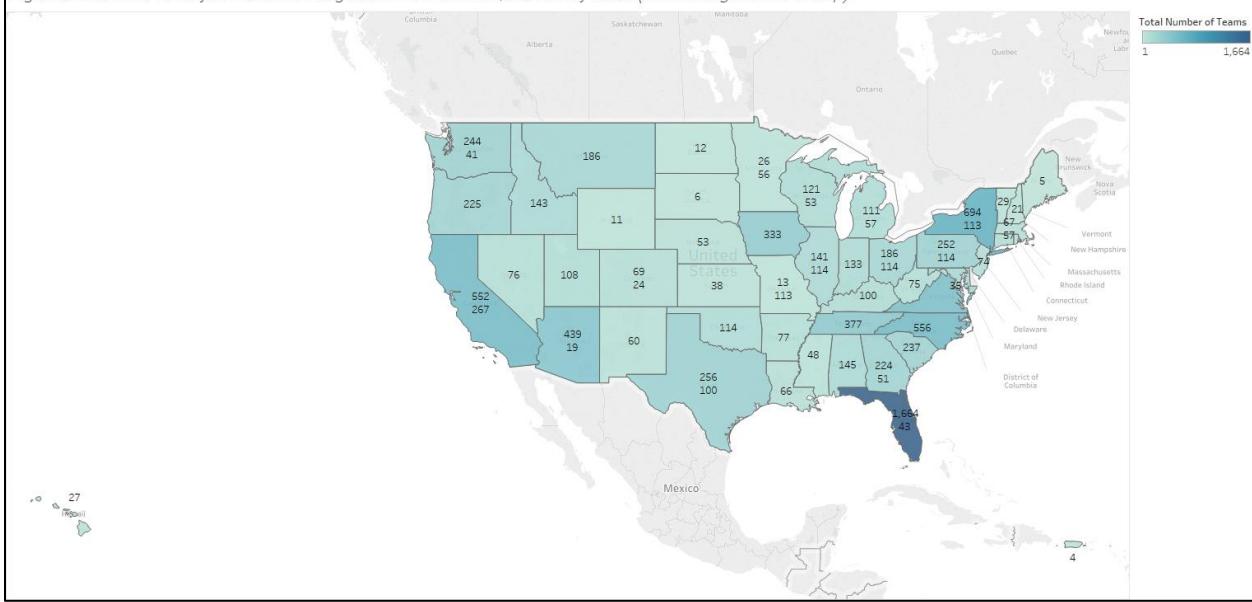


Figure 39. Number of Major and Minor League teams (distinct) by U.S. state.

Figure 40. Number of Minor League Teams by Country Over Time, Decade Comparison

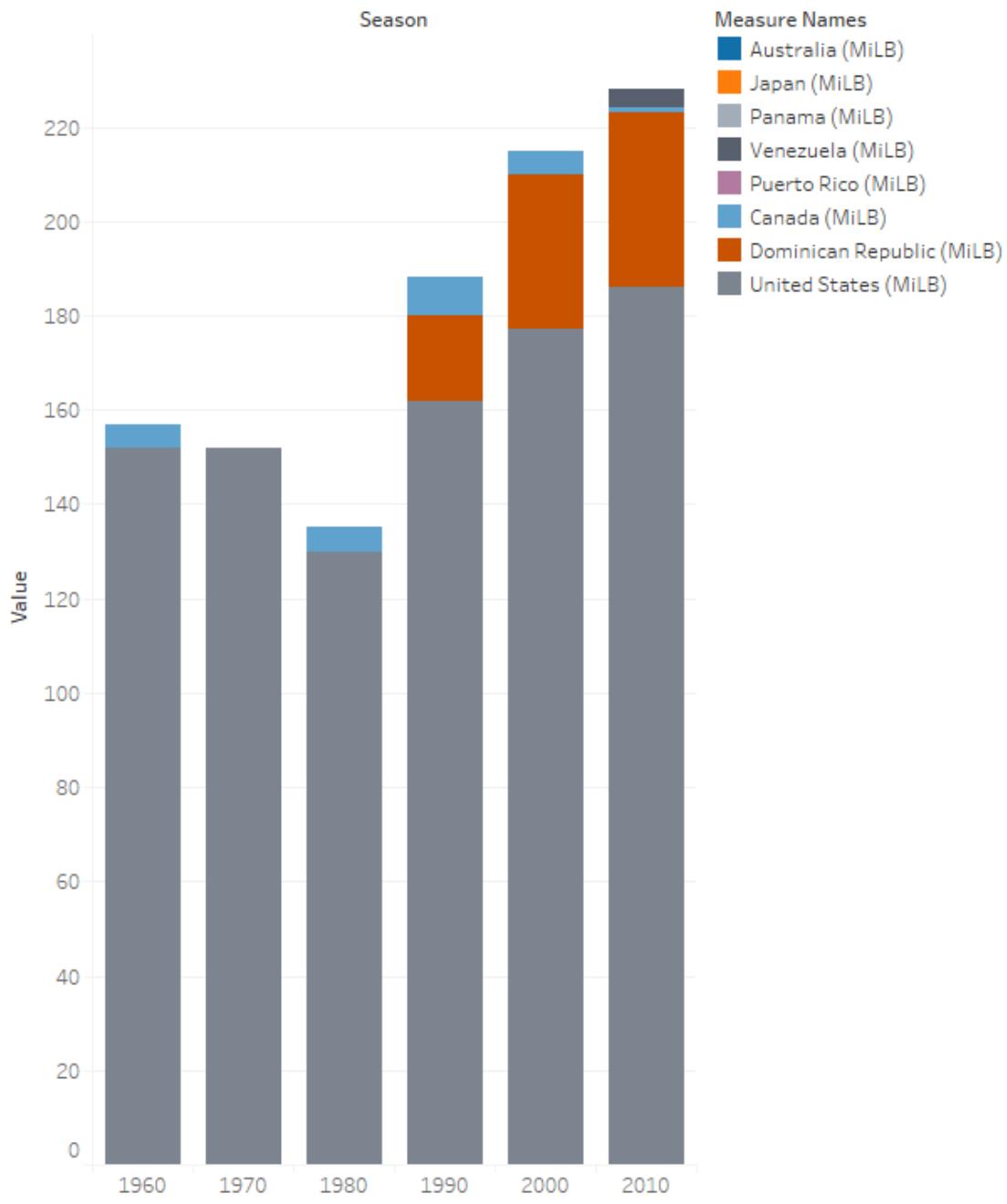


Figure 40. Number of Minor League teams by country, decade comparison.

Figure 41 (a). Number of Teams (MLB + MiLB) by Country and Classification, Overall

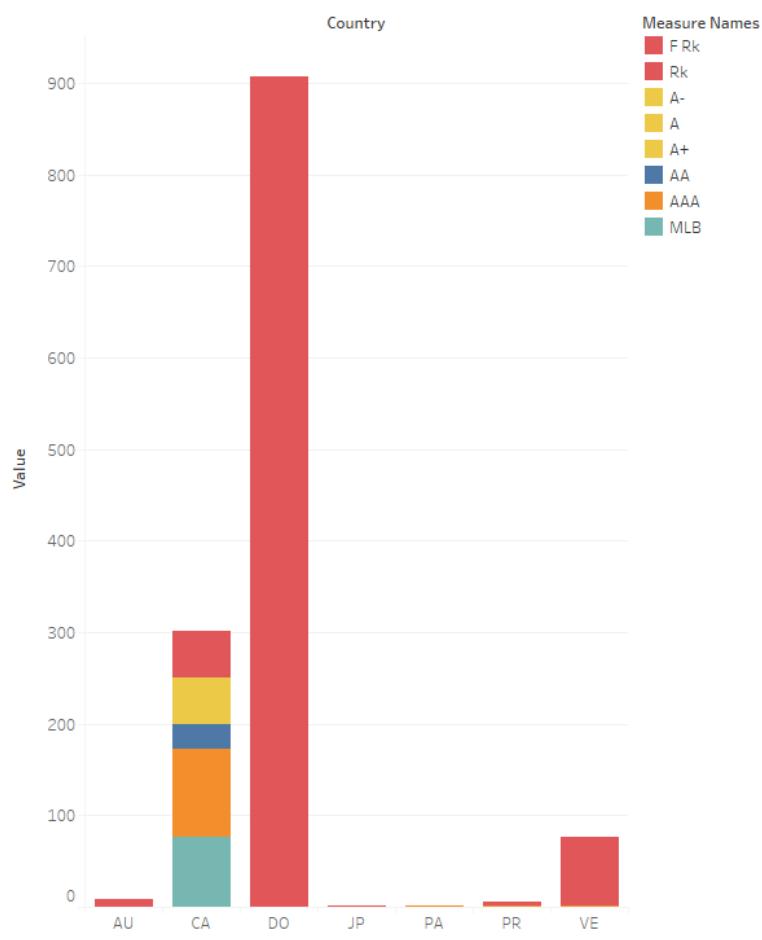


Figure 41 (b). Number of Teams (MLB + MiLB) by Country and Classification, Overall

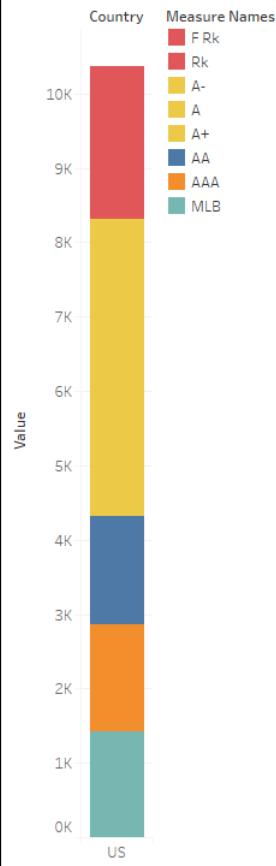


Figure 41. Number of Major and Minor League teams by country and classification.

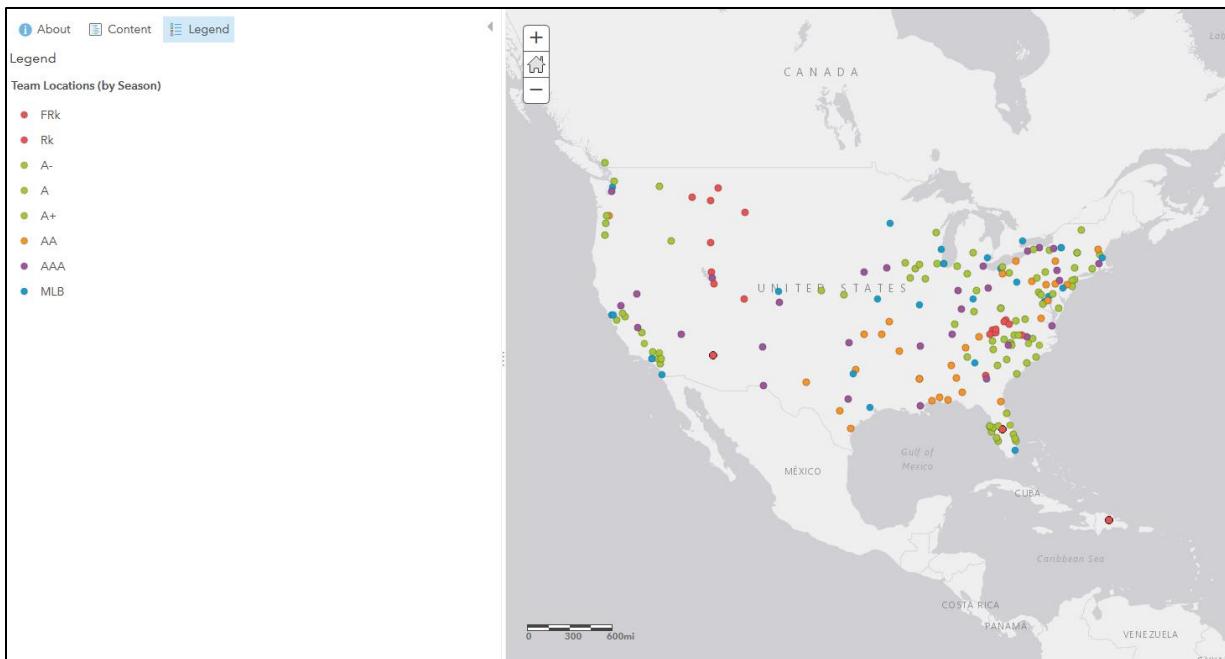


Figure 42. Map of Major and Minor League teams by classification, from 2016 season.

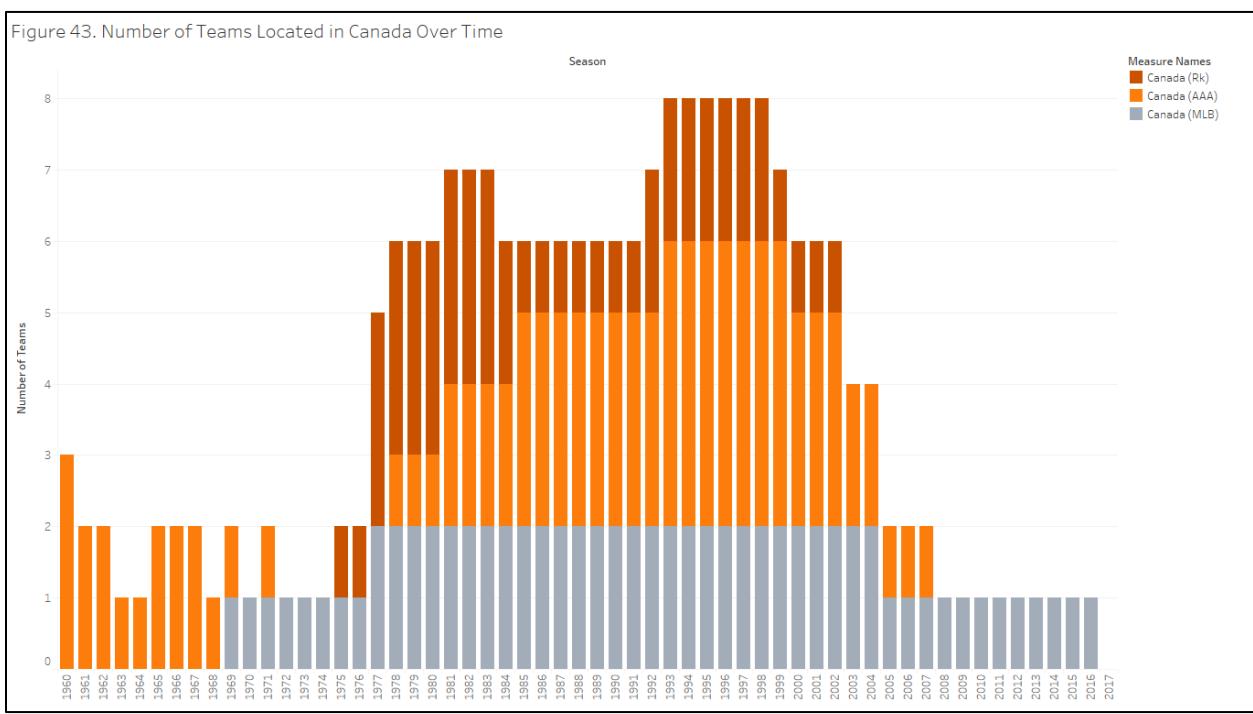


Figure 43. Number of Major and Minor League teams located in Canada, over time.

Figure 44. Number of Teams Located in Panama, Puerto Rico, and the Dominican Republic, Over Time

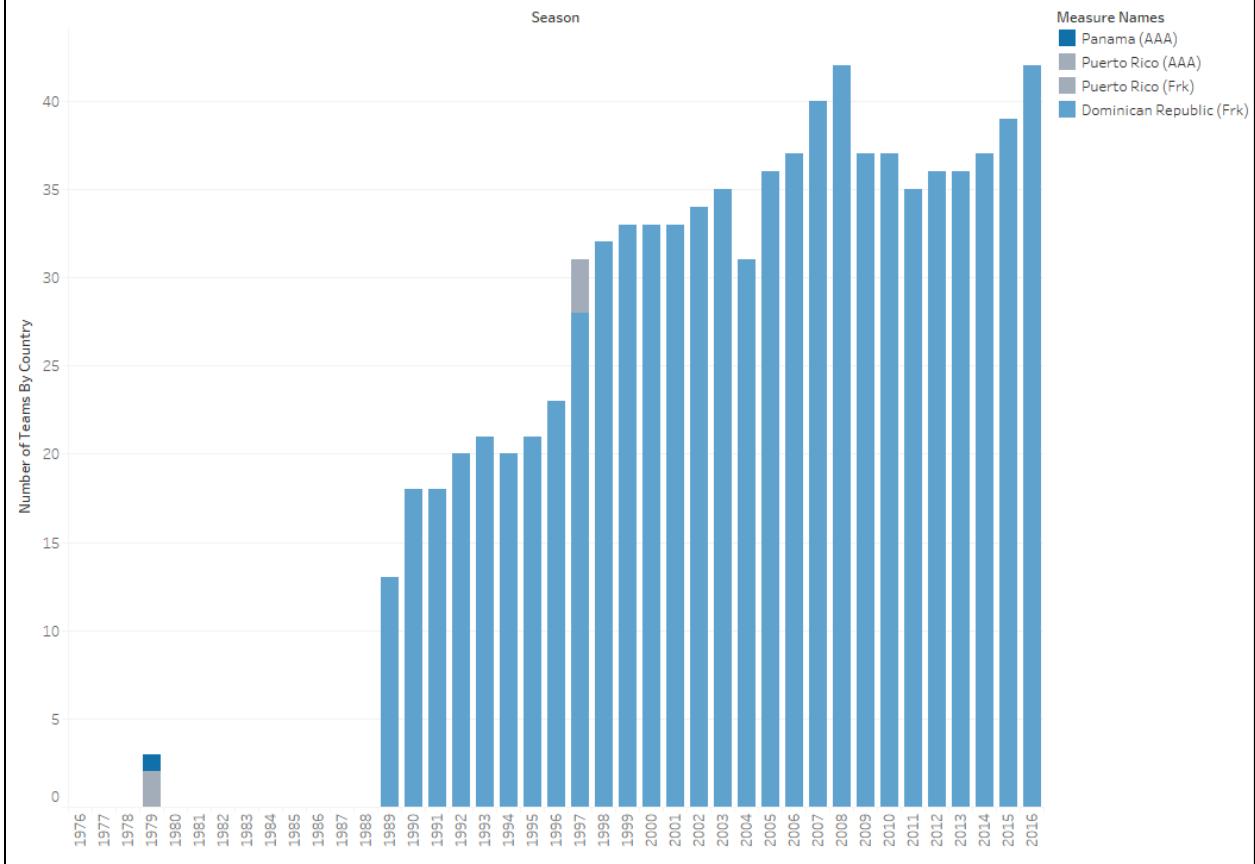


Figure 44. Number of Major and Minor League teams located in Panama, Puerto Rico, and the Dominican Republic, over time.

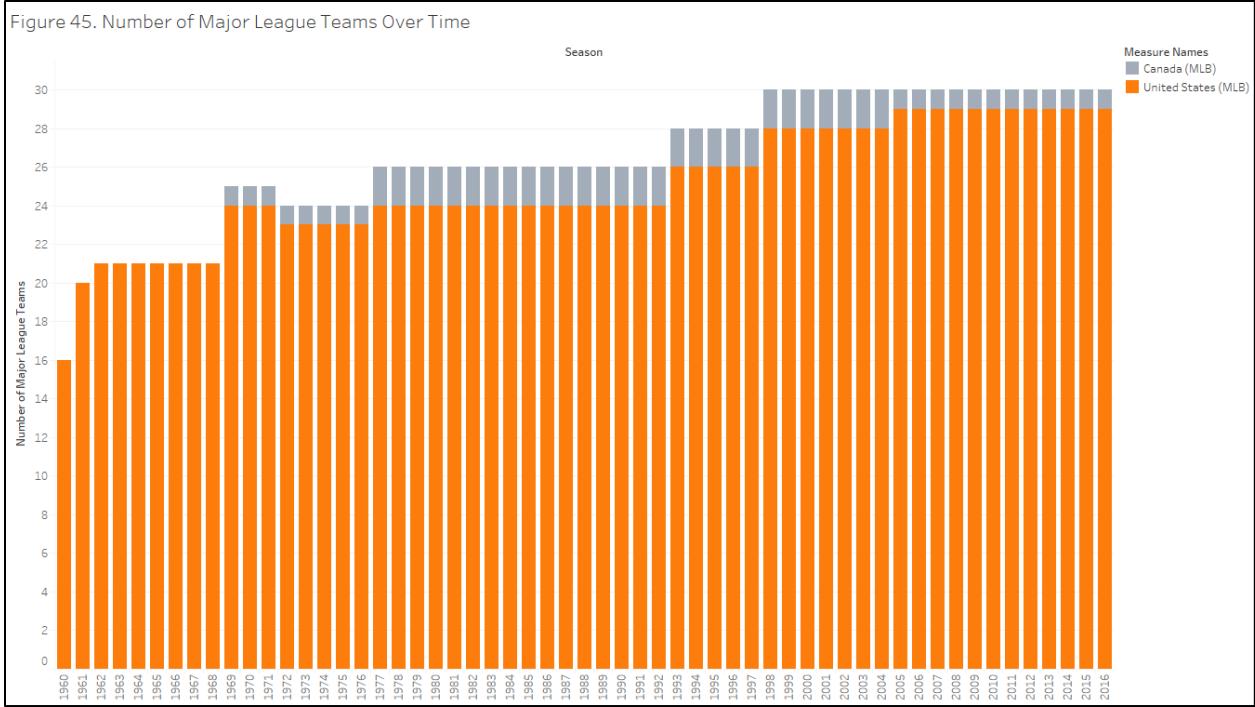


Figure 45. Number of Major League teams by location over time.

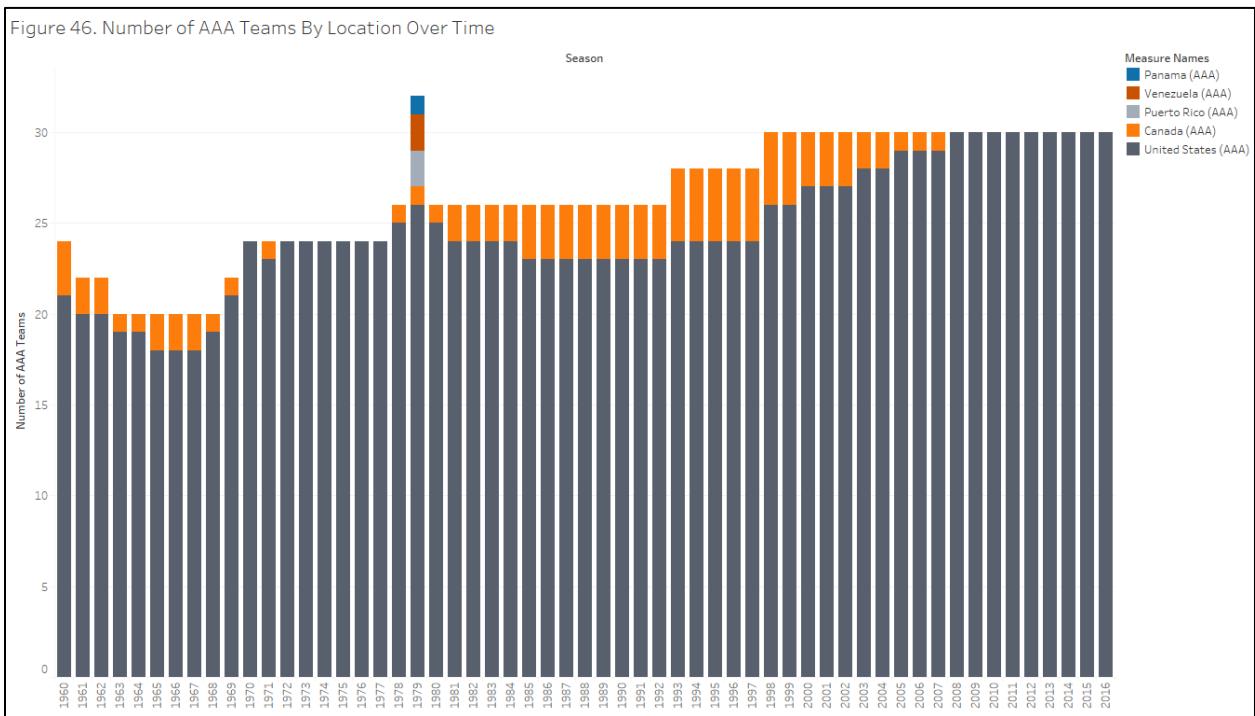


Figure 46. Number of AAA teams by location over time.

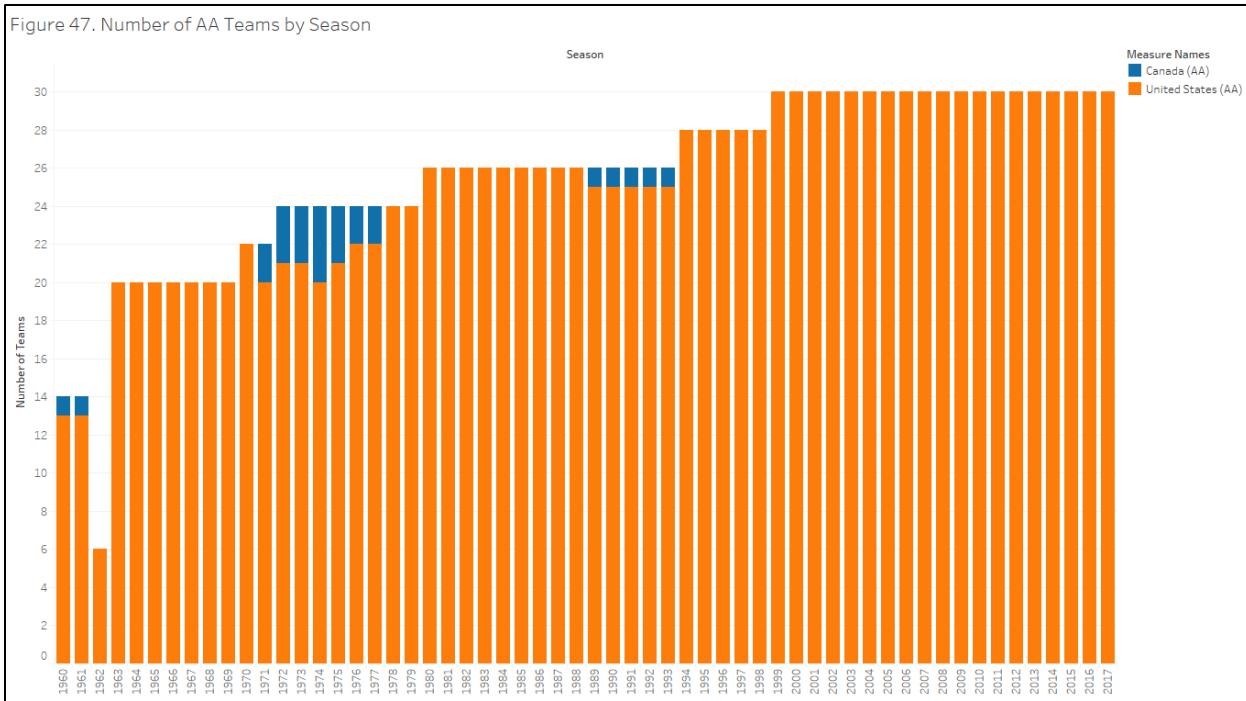


Figure 47. Number of AA teams by location over time.

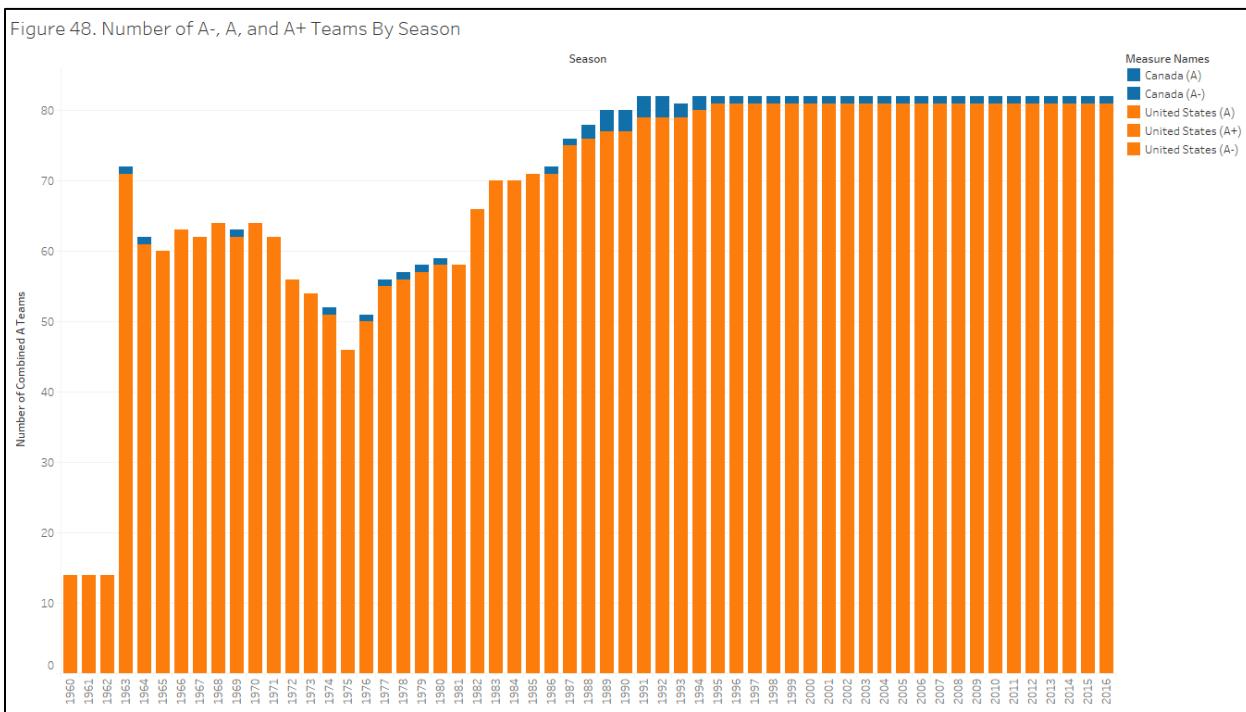


Figure 48. Number of combined A level teams by location over time.

Figure 49. Rookie and Foreign Rookie Level Team Locations (overall)

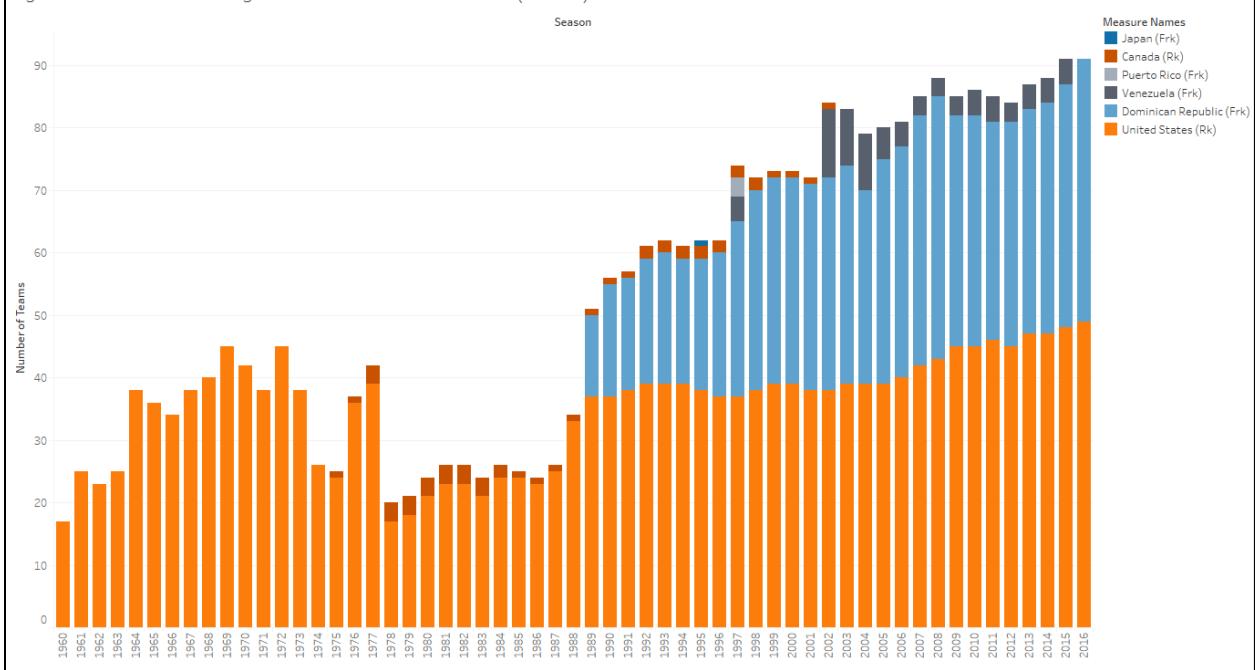


Figure 49. Number of Rookie and Foreign Rookie level teams by location over time.

Figure 50 (a). Number of Players by Birthplace Region (overall)

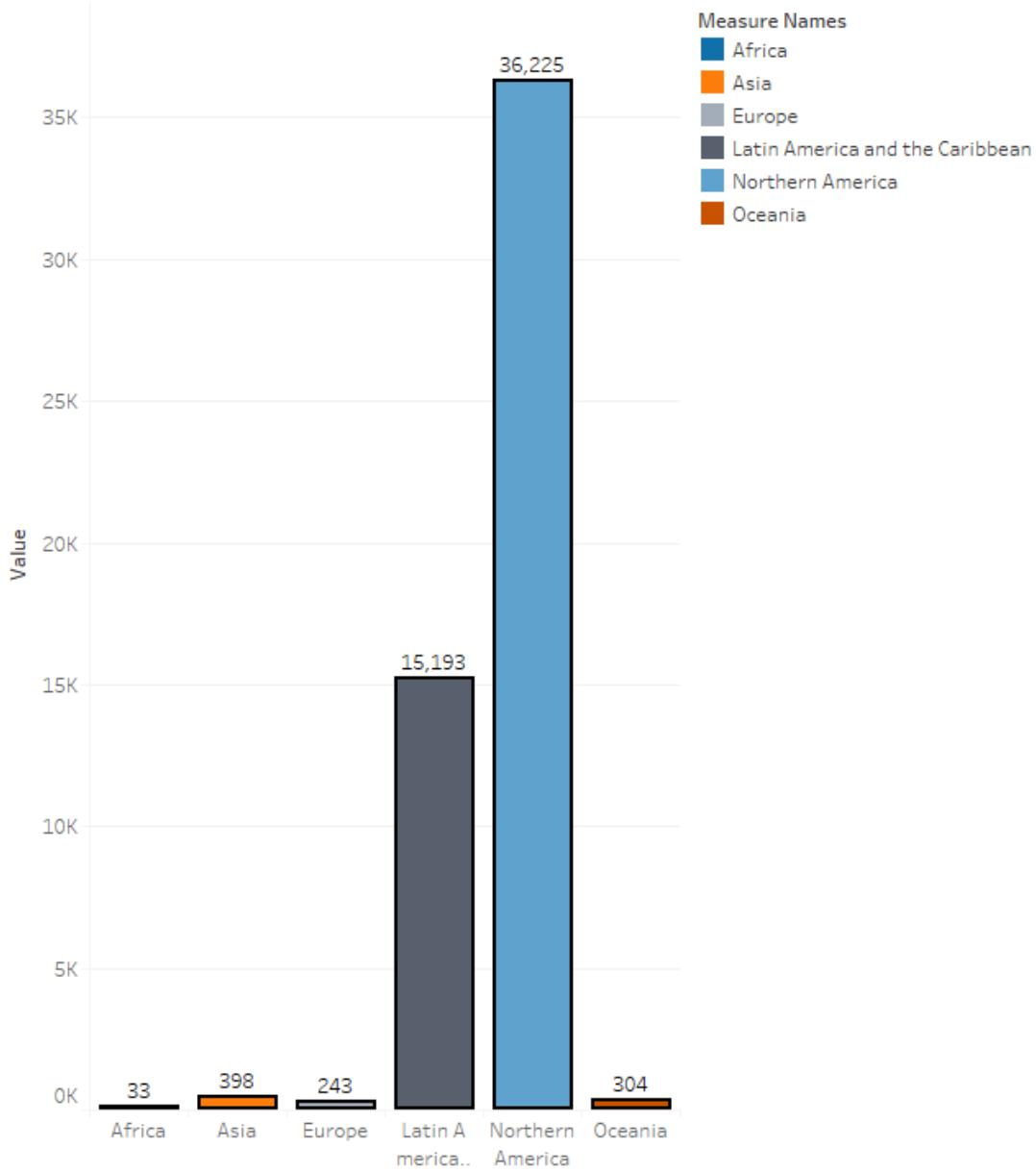


Figure 50 (b). Number of Major and Minor League Players, By Birthplace Region (overall)

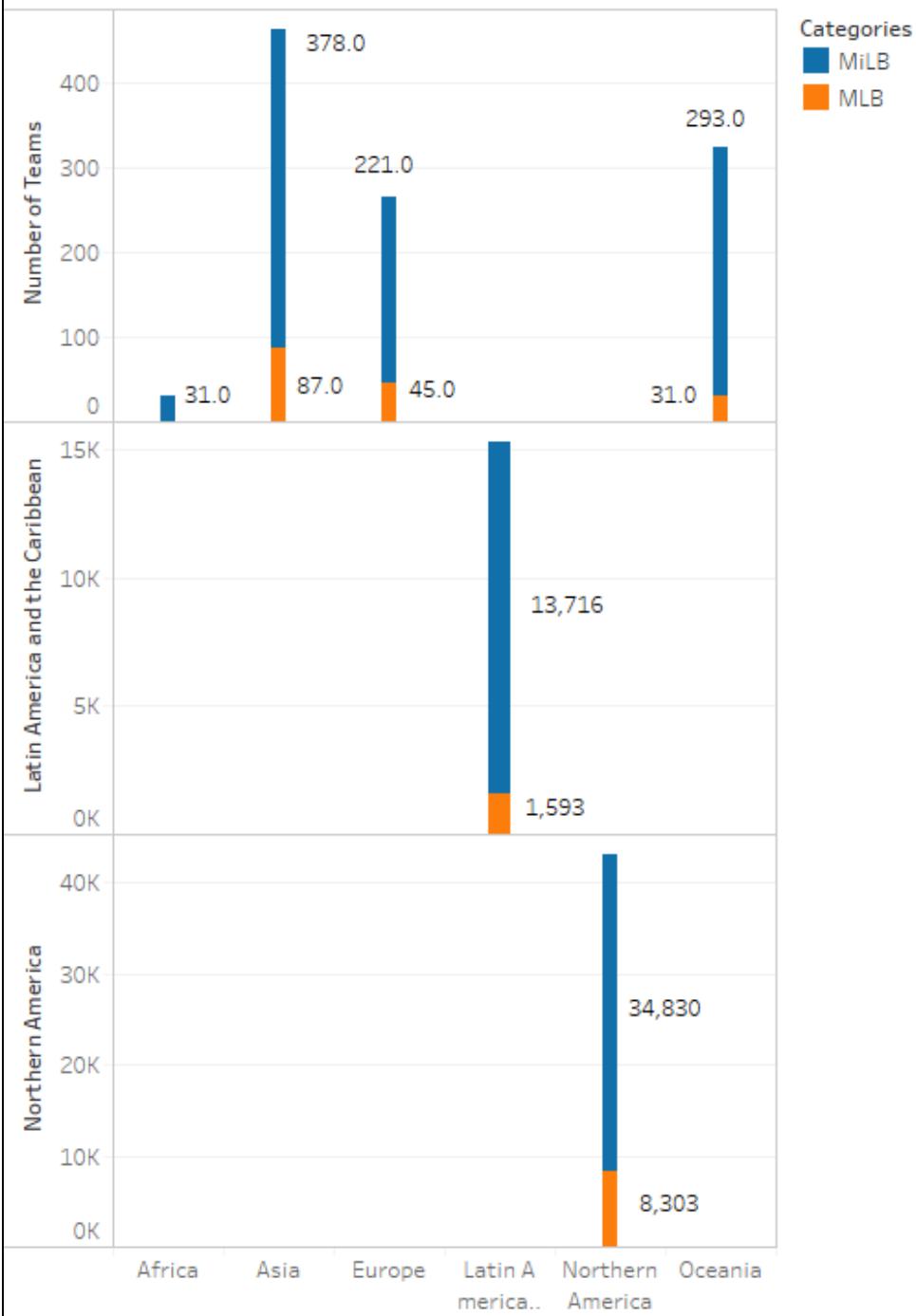


Figure 50. Number of Major and Minor League players (combined and distinct) by birthplace region.

Figure 51. Number of Major and Minor League Players Born in Latin America and the Caribbean and Northern America, 1960 Season Versus 2016 Season

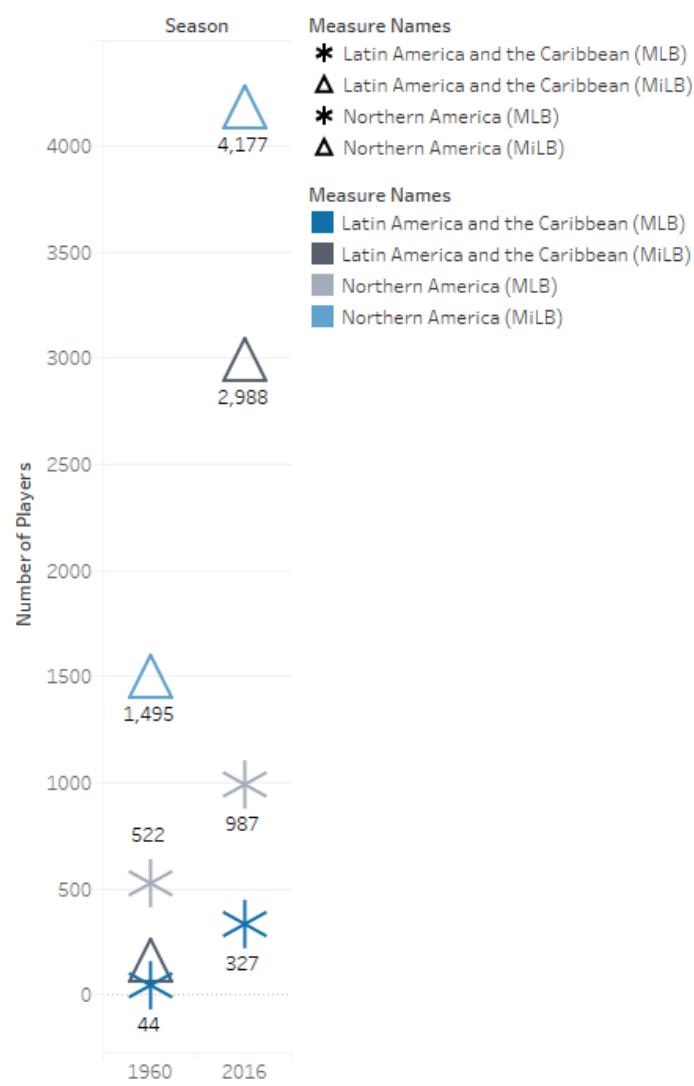


Figure 51. Number of Major and Minor League players (distinct) born in Latin America and the Caribbean and North America, 1960 season versus 2016 season.

Figure 52. Number of Major and Minor League Players Born in Latin America and the Caribbean and Northern America, Decade Comparison (Seasons)

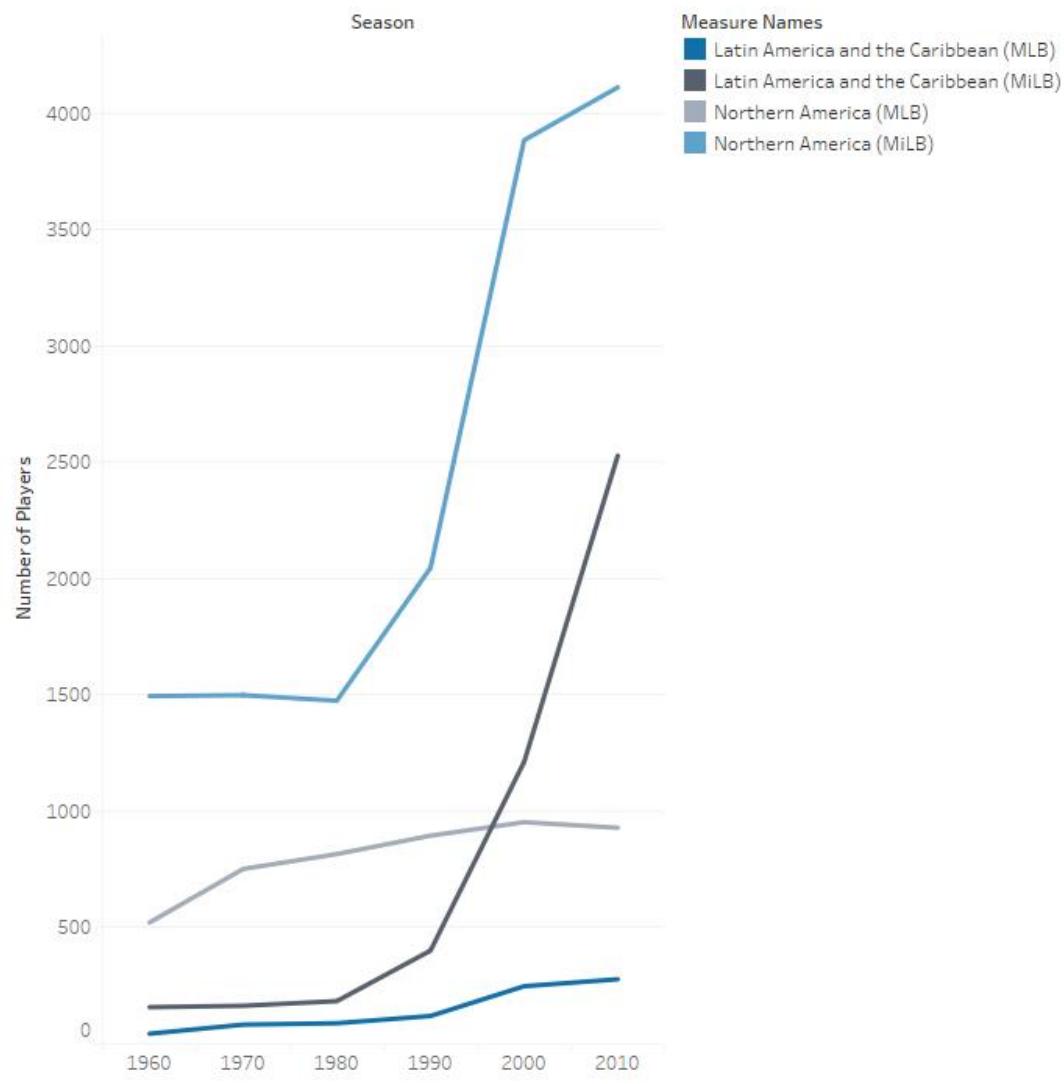


Figure 52. Number of Major League players by birthplace region, 1960 season versus 2016 season.

Figure 53. Number of Major League Players By Birthplace Region Over Time (1960 season versus 2016 season)

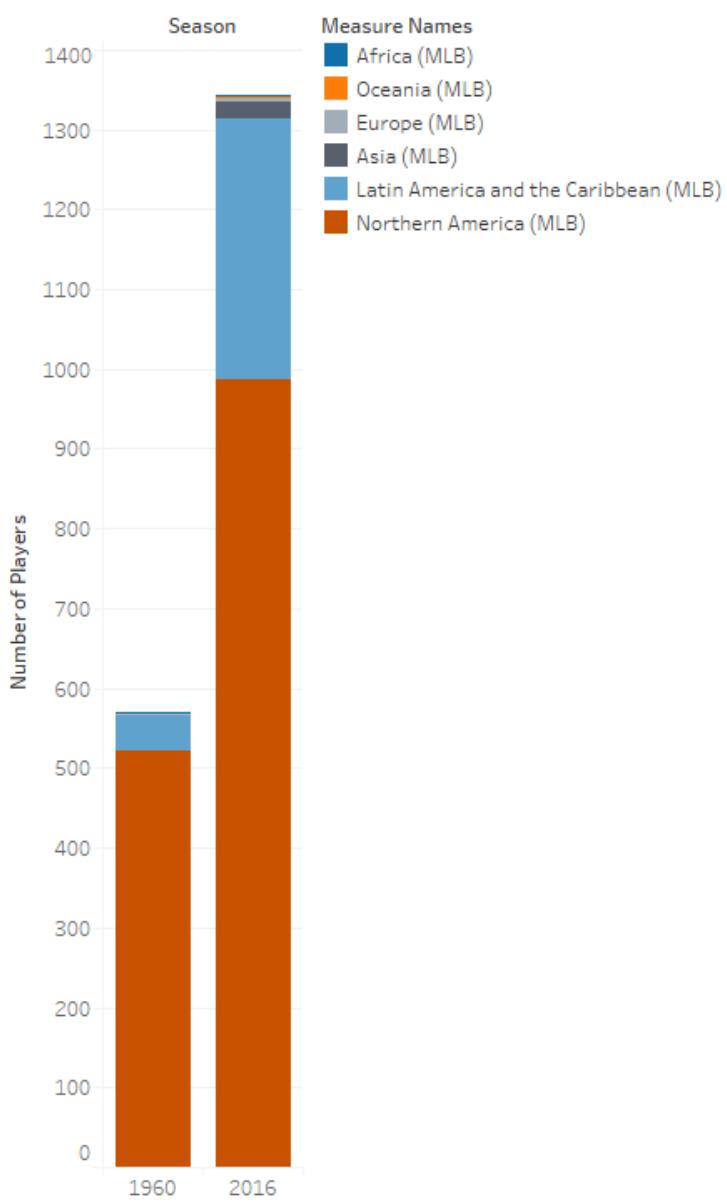


Figure 53. Number of Major and Minor League players (distinct) born in Latin America and the Caribbean and North America, compared by decade.

Figure 54. Number of Major League Players
By Birthplace Region Over Time (decade
comparison)

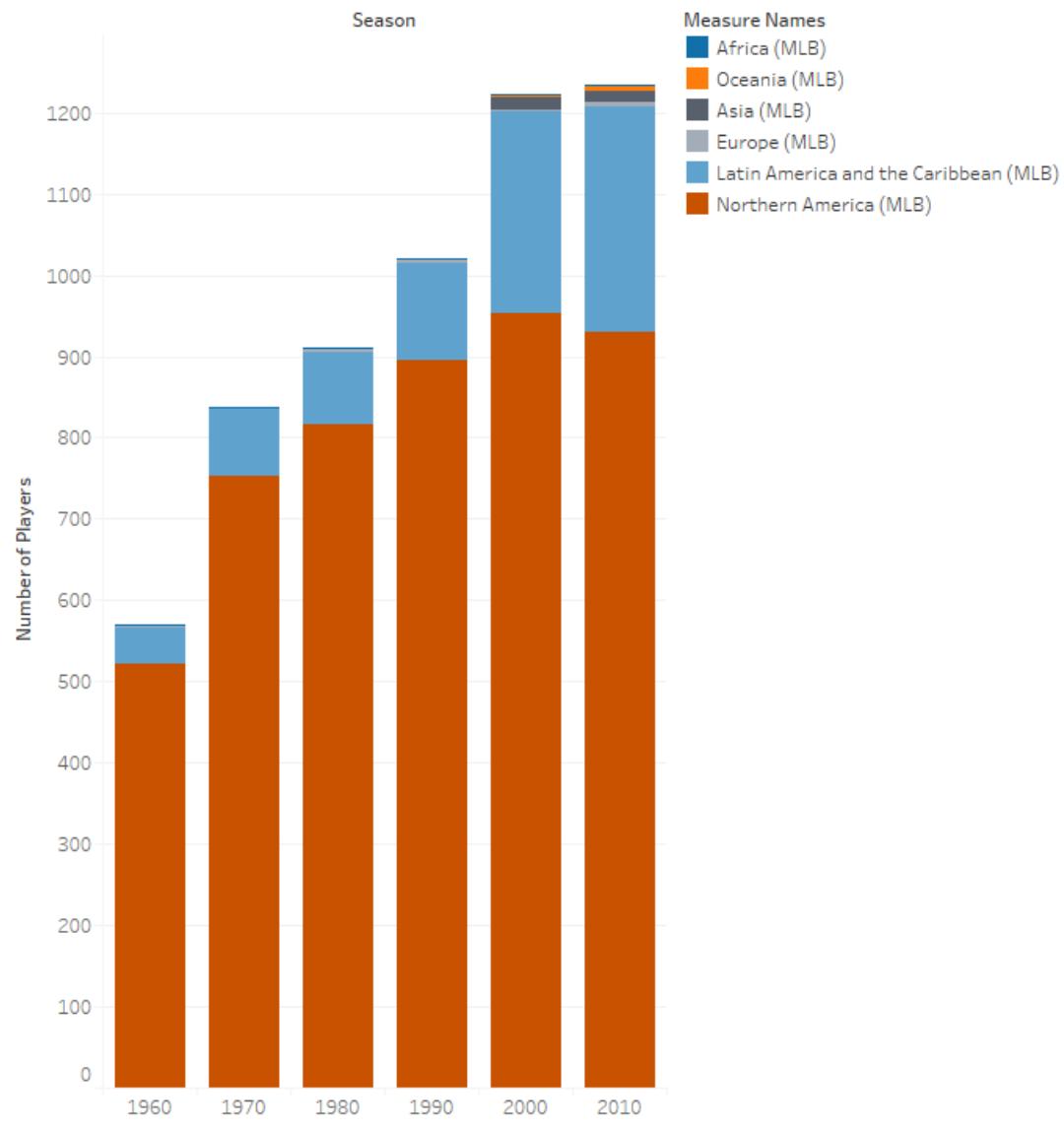


Figure 54. Number of Major League players by birthplace region, decade comparison.

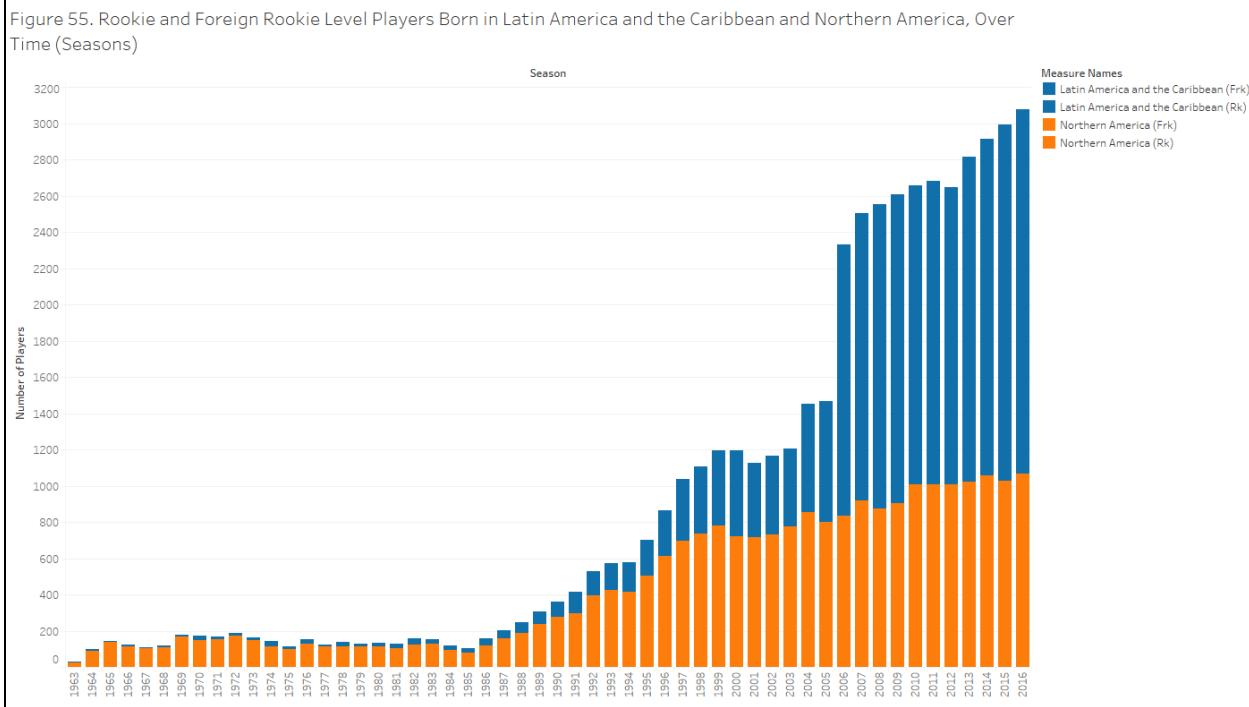


Figure 55. Number of Rookie and Foreign Rookie level players born in Latin America and the Caribbean and North America, over time (seasons).

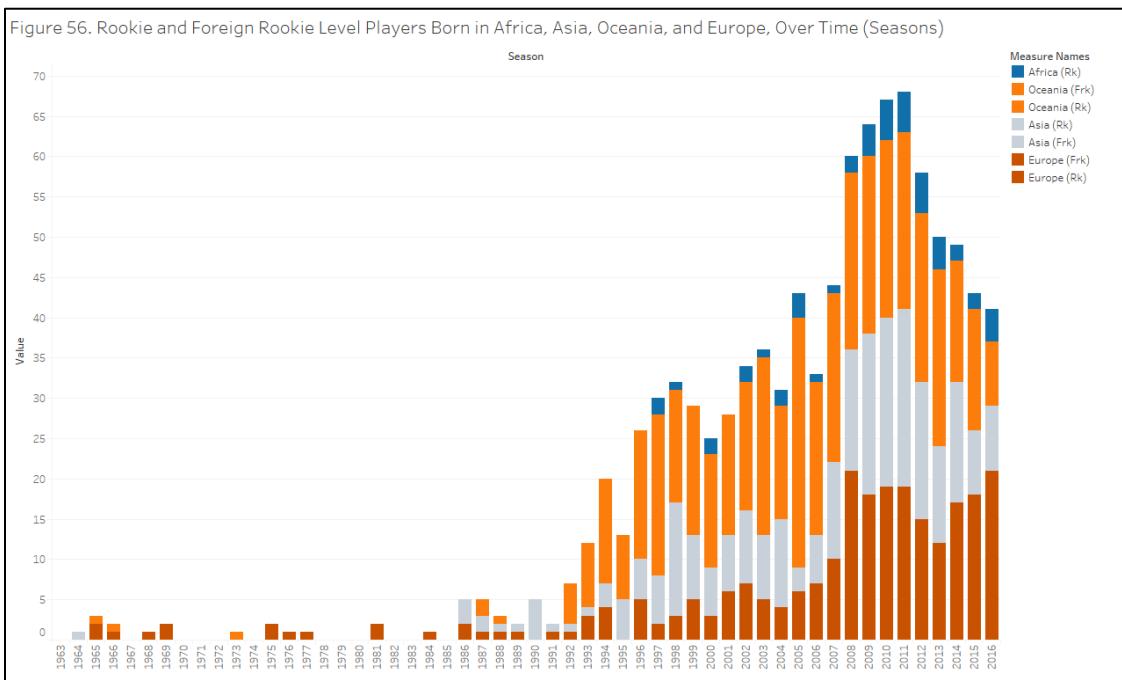


Figure 56. Number of Rookie and Foreign Rookie level players born in Africa, Asia, Oceania, and Europe, over time (seasons).

Figure 57. Combined A Level Players Born in Latin America and the Caribbean and Northern America, Over Time (Seasons)

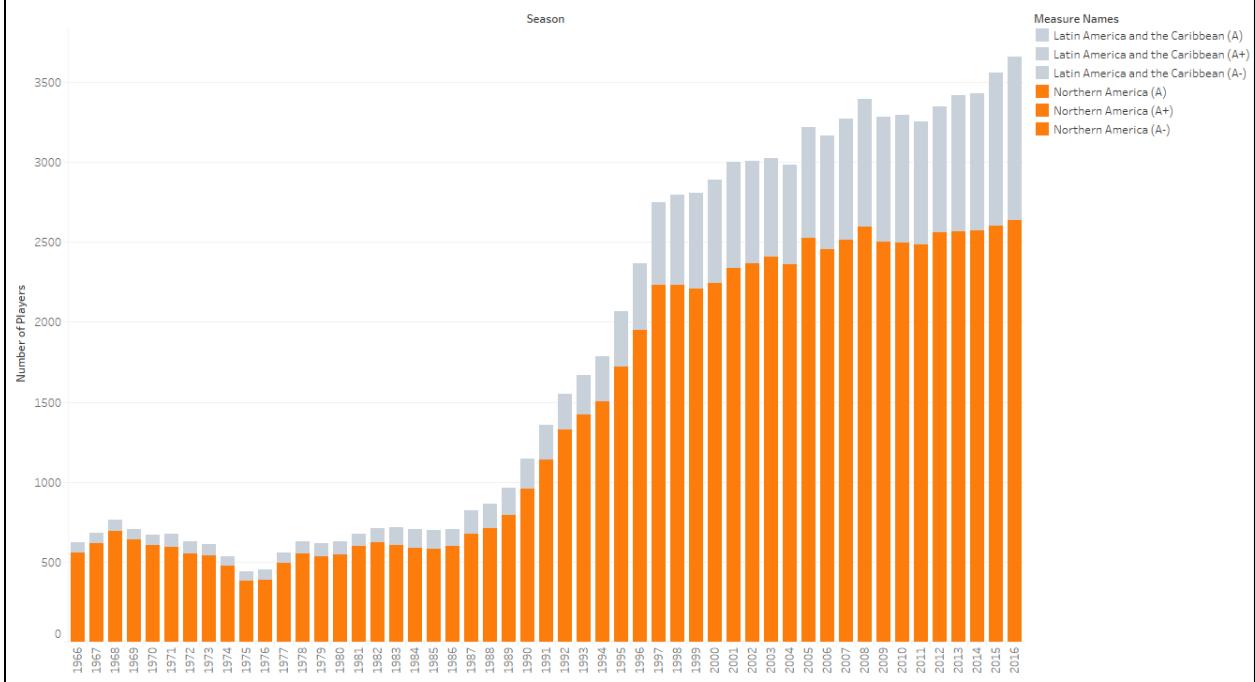


Figure 57. Number of combined A level players born in Latin America and the Caribbean and North America, over time (seasons).

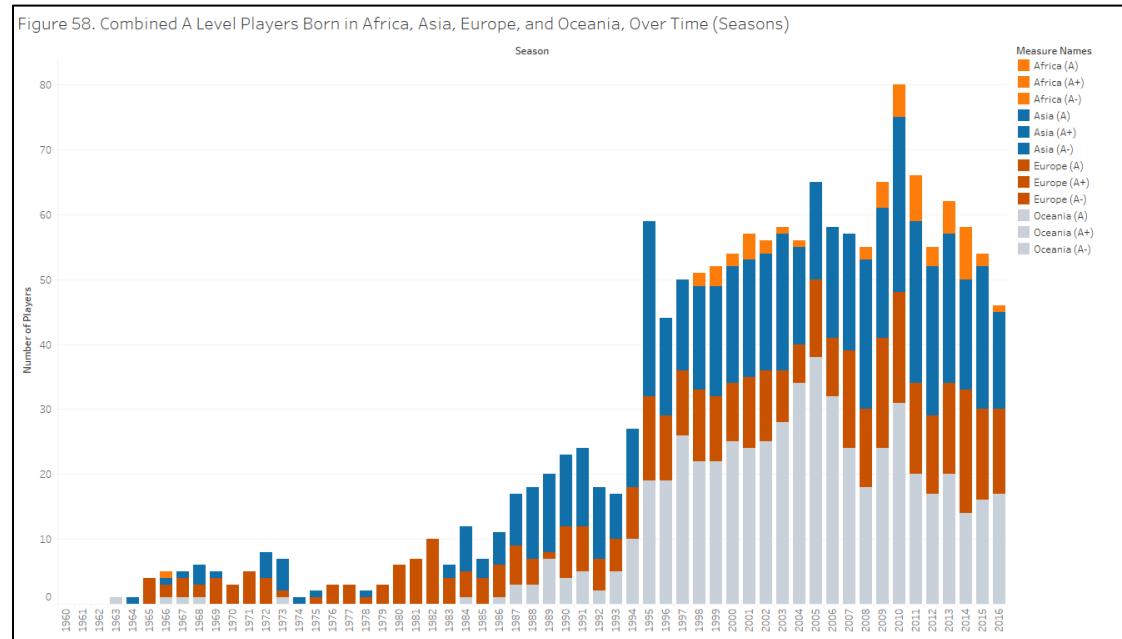


Figure 58. Number of combined A level players born in Africa, Asia, Europe, and Oceania, over time (seasons).

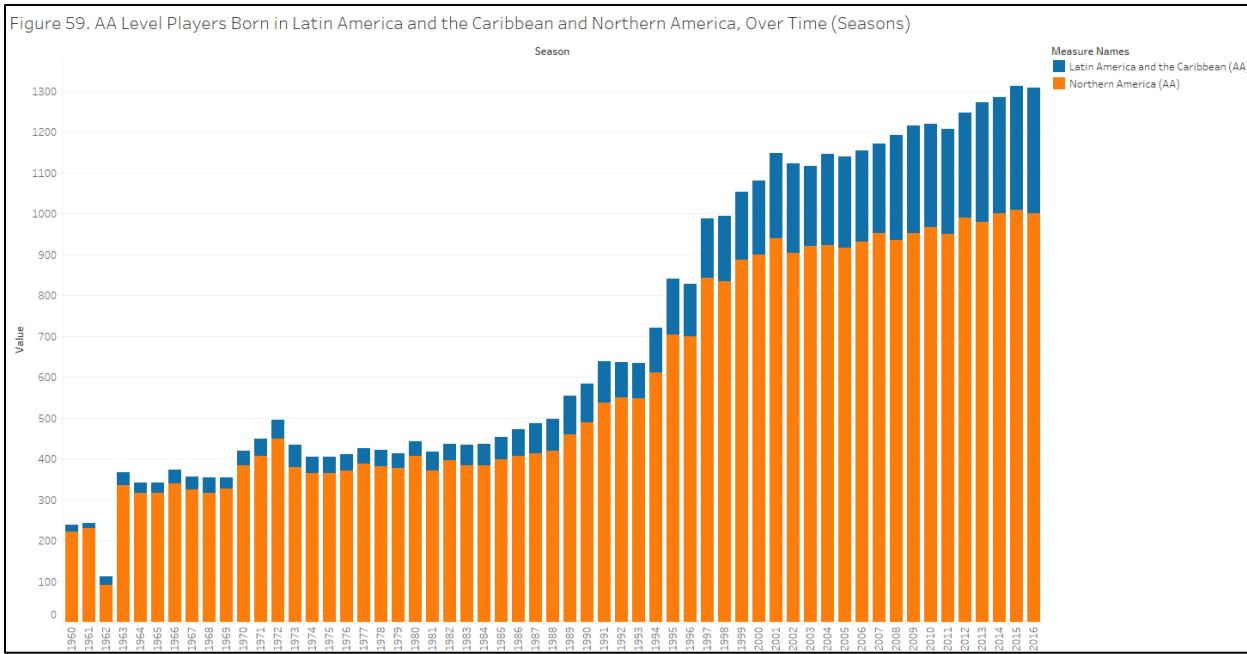


Figure 59. Number of AA level players born in Latin America and the Caribbean and North America, over time (seasons).

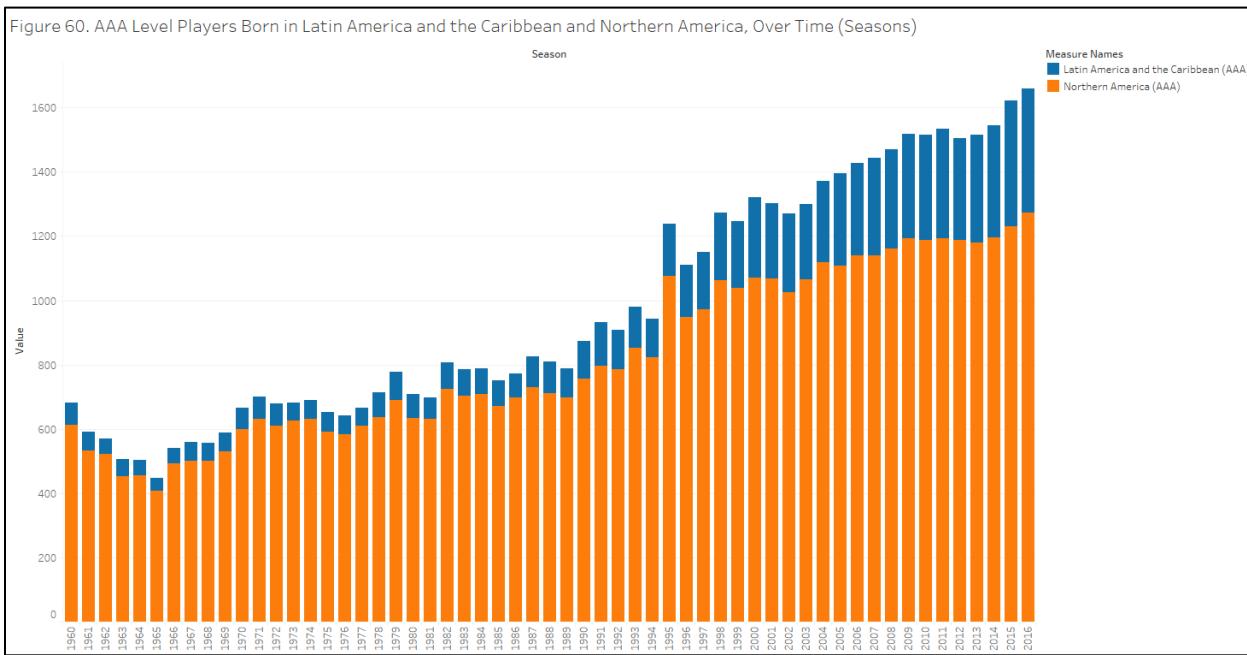


Figure 60. Number of AAA level players born in Latin America and the Caribbean and North America, over time (seasons).

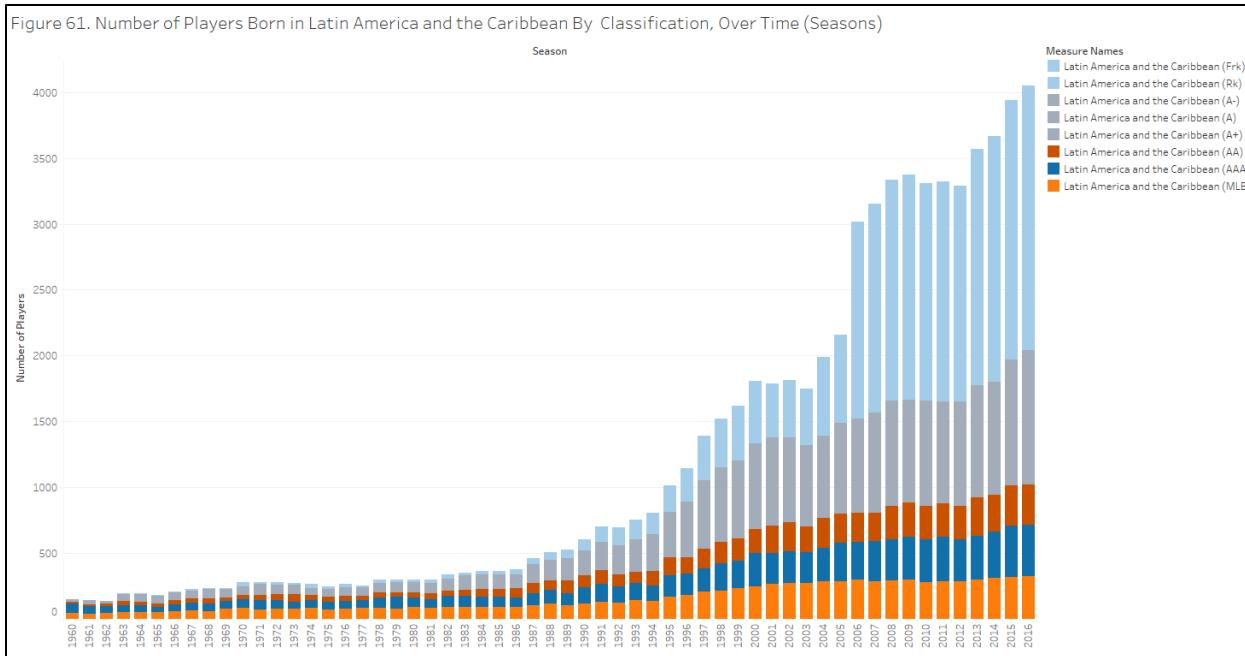


Figure 61. Number of players born in Latin America and the Caribbean by classification, over time (seasons).

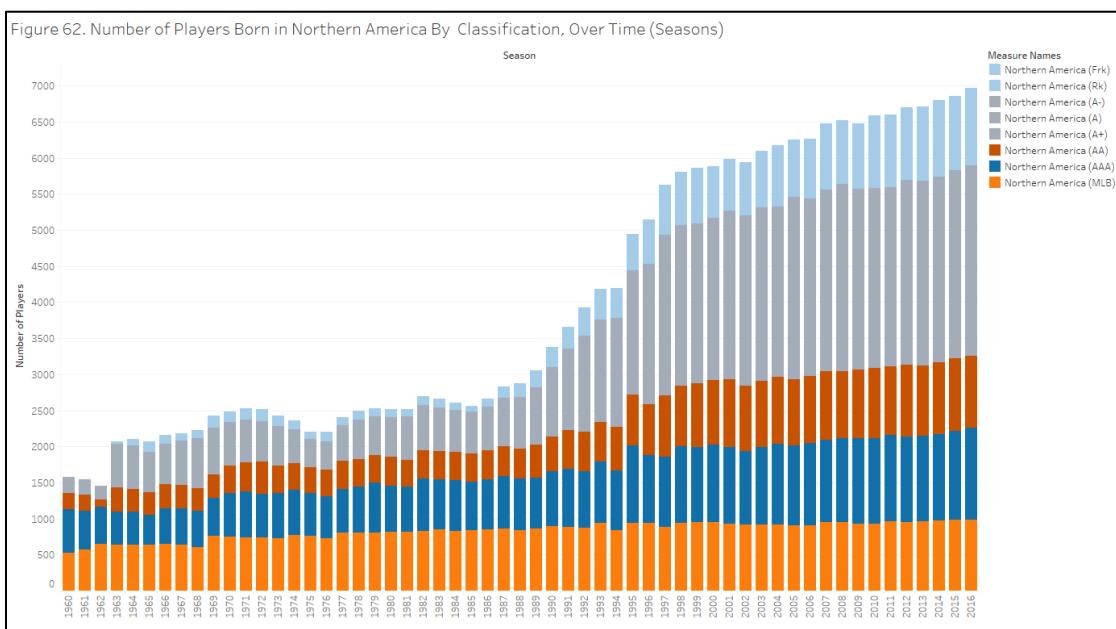


Figure 62. Number of players born in Northern America by classification, over time (seasons).

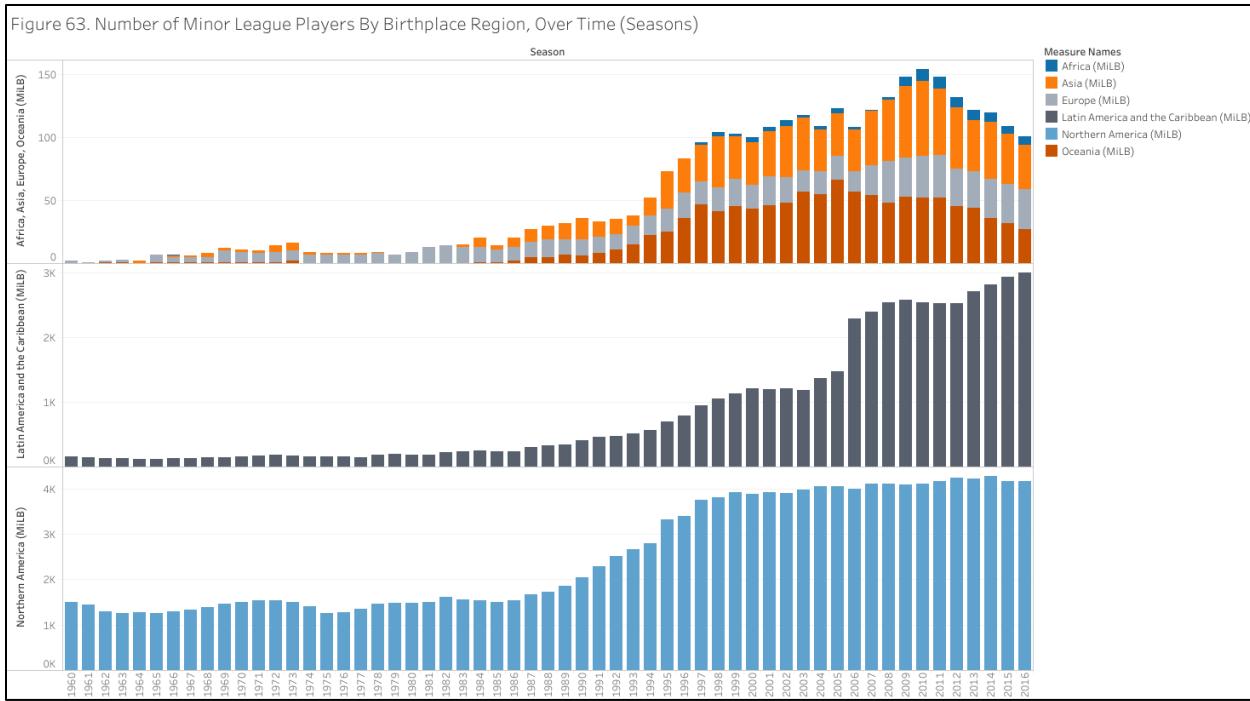


Figure 63. Number of Minor League players by birthplace region, over time (seasons).

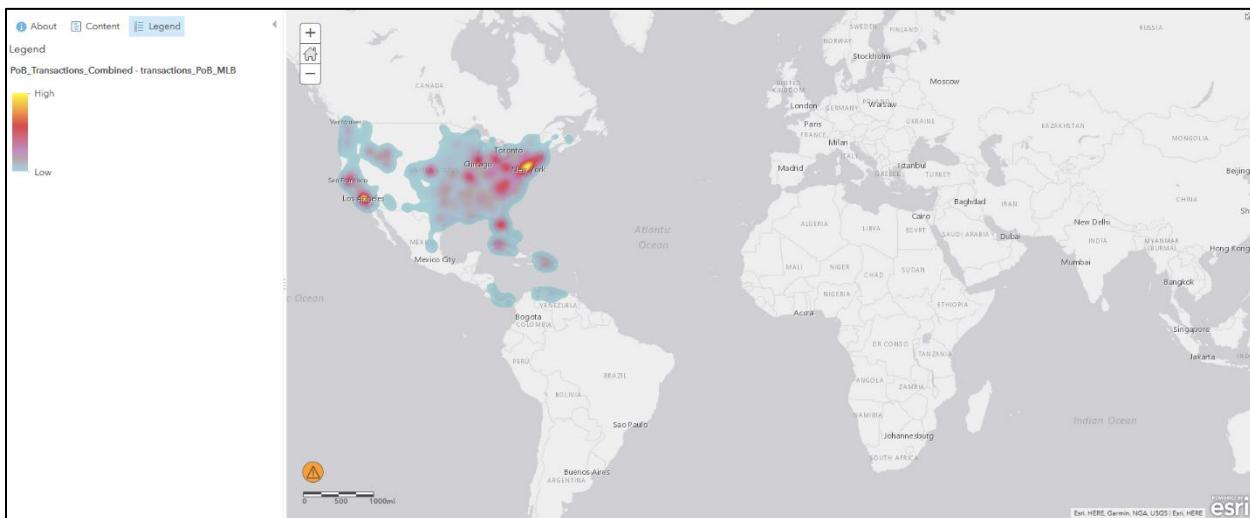


Figure 64. Heatmap of Major League player birthplaces from 1960 season.

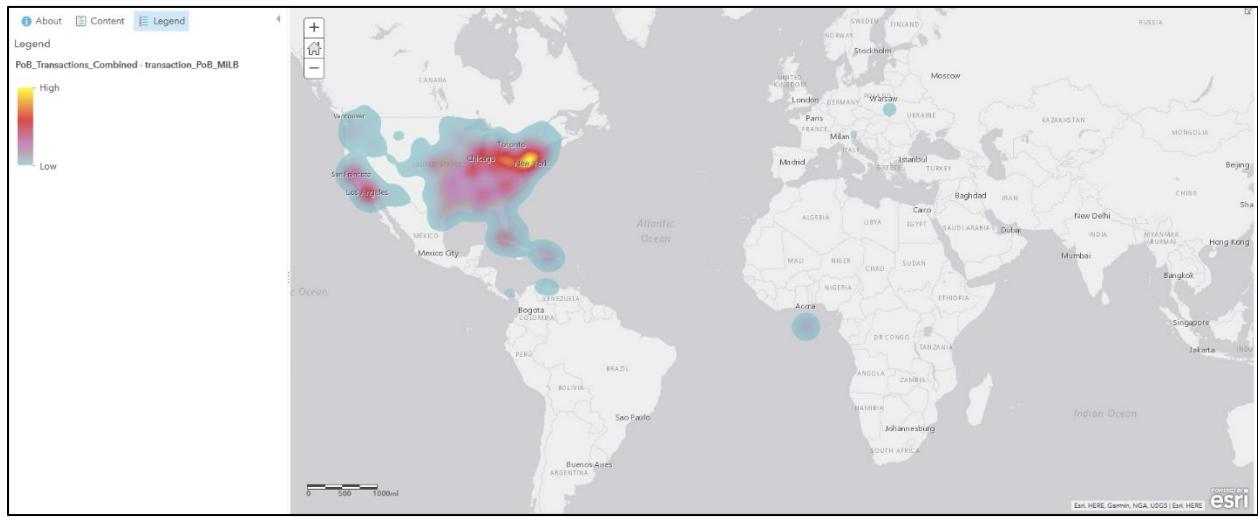


Figure 65. Heatmap of Minor League player birthplaces from 1960 season.



Figure 66. Heatmap of Major League player birthplaces from 2016 season.

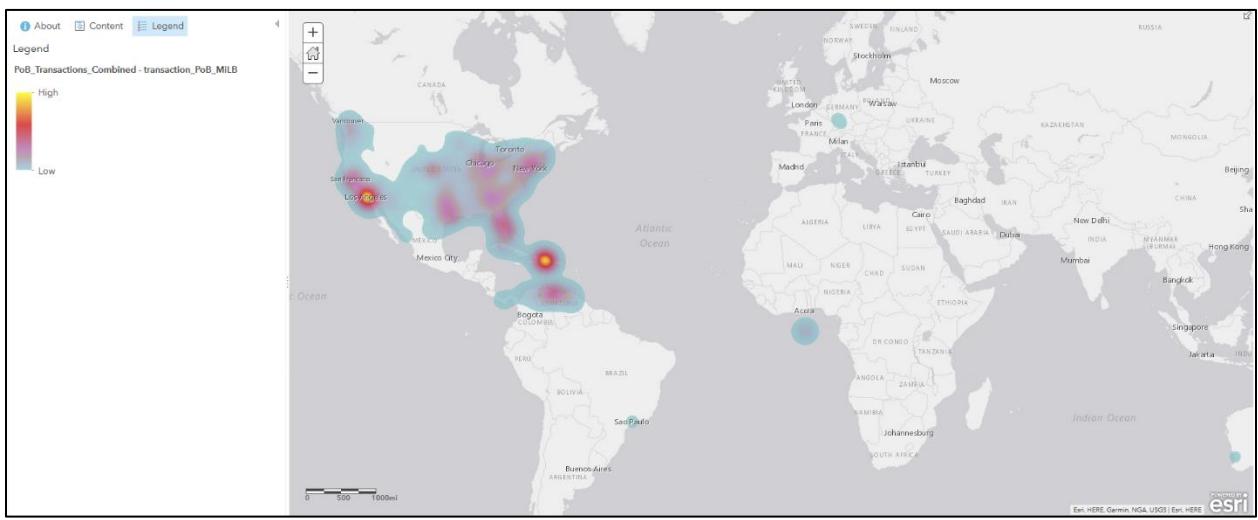


Figure 67. Heatmap of Minor League player birthplaces from 2016 season.

PLAYING THE NATIONAL GAME: MINOR LEAGUE BASEBALL, CULTURAL PRODUCTION, AND REPRESENTATION

Introduction

This section of the dissertation returns full circle to questions of labor and power.

Elsewhere, this dissertation takes up those questions by looking labor structures and practices directly shaping U.S. professional baseball's working conditions. But, U.S. professional baseball's labor practices are fundamentally connected with issues of ideology and representation. As Nathanson, Butterworth, and Nathan argue, U.S. professional baseball's dominant cultural narratives often obscure or misrepresent the sport's complex history and reality.¹⁰¹ This dissertation grapples with those complex realities by focusing on Minor League Baseball—an aspect of U.S. professional baseball often marginalized or overlooked. In presenting a labor history of Minor League Baseball and undertaking an analysis of Minor League Baseball and globalization, this dissertation emphasizes the complex structures that shape Minor League labor, arguing the labor victories achieved through collective action have largely failed to significantly improve working conditions for the majority of U.S. professional baseball players.

This section of the dissertation explores the intersection of player agency and cultural representation. It does so by addressing out three aspects of that intersection. First, it looks at how cultural representation systems often frame Minor League Baseball as representing a rural, agrarian idyll, addressing those narratives are complicated by the actual contours of U.S. professional baseball as played at the Major and Minor League levels. Second, it looks at how

¹⁰¹ Daniel A. Nathan, *Saying It's So: A Cultural History of the Black Sox Scandal* (Urbana, IL: University of Illinois Press, 2006). Michael Butterworth, *Baseball and Rhetorics of Purity: The National Pastime and American Identity During the War on Terror* (Tuscaloosa, AL: University of Alabama Press, 2010); Nathanson.

Major and Minor League teams use digital media platforms as a form of cultural representation. By doing so, it points out how these digital representation mechanisms most often work to reinforce dominant narratives. Third, it looks at how Minor League players use those same structures to push back on dominant representations and exert agency by presenting alternate perspectives on Minor League working conditions.

By doing so, this section of the dissertation highlights the severe limitations of dominant understandings and representations of Minor League Baseball. Previous sections of the dissertation have shown those limitations through taking up a labor history of Minor League Baseball and analyzing globalized labor practices. This section of the dissertation looks at the cultural representation structures and practices that also work to reinforce those dominant narratives, and highlights how the same structures and mechanisms can work to present alternate perspectives and experiences.

The Magical (Imagined) Minor League Baseball

Popular culture representations of U.S. professional baseball have a long history of situating the game in a quasi-rural imagined space. The previous section of the dissertation pointed out how fixating on a curated version of U.S. professional baseball's desegregation limits attention to other complex structures of race and racialization. Similarly, reinforcing a rural, agrarian idyll for U.S. professional baseball limits attention to the sport's complex labor history and international presence. That rural idyll manifests in several dominant narratives about U.S. professional baseball's cultural significance. For example, the long-standing debate about U.S. baseball's origin story persists despite significant historical evidence which places early U.S. baseball in northeastern metropolitan centers like New York and Boston. Even so, the narrative that the game of baseball in the U.S. was originally played in the rural New York

village of Cooperstown persists. That imagined origin story led to the National Baseball Hall of Fame and Museum being built in the village of Cooperstown, which had no significant role in early U.S. baseball history. Cooperstown is frequently cited as a bucket-list destination for baseball fans and carries significant cultural weight as a site where U.S. professional baseball's history and cultural significance are communicated to a broad range of audiences.

Similarly, popular baseball films since the 1980s have also reinforced that rural idyll. The idyllic, nostalgic representations of the national pastime communicated in these films revitalized perception and branding of American baseball (especially Minor League teams) which, through a strategic ideological connection with rural spaces, came to represent a “pure” form of the national pastime, promoting conventional values of family, tradition, and community. Film studies scholar Jim Collins describes films during this period as epitomizing “a ‘new sincerity’...obsessed with recovering some sort of missing harmony, where everything works in unison.”¹⁰² According to Collins, these ‘new sincerity’ films “purposely evade the media-saturated terrain of the present in pursuit of an almost forgotten authenticity...fixing this recoverable purity in an impossible past...in which the problems of the present are symbolically resolved in a past that not only did not, but could not exist.”¹⁰³

Such baseball films range from films based on novels (*The Natural* and *Field of Dreams*) to sweeping historical biopics (*The Babe*, *Eight Men Out*, and *Cobb*). Plot lines for a number of other films, including *The Bad News Bears* or *The Sandlot*, reinforce the connections between baseball, boyhood, and small-town Americana. These films also feature themes of traveling, road trips, or other types of physical or metaphorical journeys. Across the films, a distance or

¹⁰² Jim Collins, “Genericity in the Nineties: Eclectic Irony and the New Sincerity” in *The Film Cultures Reader*, edited by Graeme Turner (New York: Routledge, 2002), 276.

¹⁰³ Ibid., 287.

separation from urban spaces (and the racial/ethnic heterogeneity, poverty, and criminality stereotypically linked with urban spaces) further reinforces the “rural” as an ideal space for baseball. With the exception of *Bull Durham* (which carries its own problematic sexual politics), all of these films are told from the perspective of a white male character.¹⁰⁴ Heteronormative and patriarchal relationships abound, as do conservative Judeo-Christian values—albeit with varying degrees of explicitness. Even films like *Bull Durham*, *Bad News Bears*, or later *The Pitcher and the Pin-Up* that pushed against those sexual boundaries with plot lines, themes, or characters that could be progressive, end up supporting a dominant masculine narrative.

Although characters with non-white racial or ethnic identities do appear in some of these films, their marginal status is reinforced by caricatured representations. In *Bull Durham*, the character of Jose, a Latino baseball player, speaks only in broken English and is a superstitious but devout Catholic. Later baseball films like including *42* and *Million Dollar Arm* also provide limited agency for non-white characters, reinforcing white savior tropes or colonial power structures. The films that come out during these decades also feature an uptick in historical films from the pre-desegregation era, reinforcing whiteness as the norm in idealized baseball history. Describing baseball’s cultural connotations, Tudor talks about how popular culture representations of baseball are often designed to “transport spectators back to their childhood years, before the loss of innocence that accompanies adolescence. ‘Pure’ spectators will watch ‘pure’ baseball. Disturbingly, this purity has been linked to race.”¹⁰⁵ From *The Babe* to *The Natural* to *Cobb*, *Eight Men Out*, and *A League of Their Own*, these films collectively reinforce a

¹⁰⁴ As Deborah Tudor describes, “when women characters occupy a more central position in the narrative, increasingly complex articulations of gender relations occur.” From Tudor, *Hollywood’s Vision of Team Sports*, 102.

¹⁰⁵ Tudor, 169.

narrow vision of what baseball history should be remembered and who is allowed to participate in the “official” version of baseball history. Although Ken Burns’ 1994 *Baseball* documentary does include an episode on black baseball and the Negro Leagues, that history doesn’t get equal treatment or recognition in Hollywood cinema. As Pellom McDaniels points out, “African American male athletes...are regarded as heroic...become lionized examples of manhood, dignity, and nobility. Yet the big screen lacks fair and appropriate representations of African American male athletes as well-rounded, multidimensional men.”¹⁰⁶

Sport films as a genre have been critiqued for their glorification of white American masculinity, but films about baseball are particularly glaring, “highlighting the sports’ nostalgic significance...the transfixing and mythologized essence of what a simple, hard-working, family-minded, clean-cut All-American boy could achieve.”¹⁰⁷ Literary critic and critical theorist Fredric Jameson used the term “nostalgia films” to describe historical films in which “the desperate attempt to appropriate a missing past is now refracted through the iron law of fashion change and the emergent ideology of the generation.”¹⁰⁸ Building on Jameson, George Lipsitz points out that realness or complete accuracy may not even be desirable for commercial film,

¹⁰⁶ McDaniels, Pellom, III, "As American as Apple Pie: Filling in the Gaps and Recovering the Narratives of America's Forgotten Heroes," In *All Stars and Movie Stars: Sports in Film and History*, edited by Ron Briley, Michael K Schoenecke and Deborah A. Carmichael (Lexington, KY: University Press of Kentucky, 2008), 134. As Richard Dyer details, “Trying to think about the representation of whiteness as an ethnic category in mainstream film is difficult, partly because white power secures its dominance by seeming not to be anything in particular... making it hard, especially for white people and their media, to ‘see’ whiteness.” From Richard Dyer, “White” in *The Film Cultures Reader*, edited by Graeme Turner (New York: Routledge, 2002), 457-459. Originally published in *Screen* 29 (1988), 44-65.

¹⁰⁷ Ibid., 134.

¹⁰⁸ Fredric Jameson, “The Cultural Logic of Late Capitalism” from *Postmodernism, or The Cultural Logic of Late Capitalism* (Durham, NC: Duke University Press, 1991). <https://web.archive.org/web/20180730022947/http://xroads.virginia.edu/~drbr/jameson/jameson.html>.

which “generally do not claim to present historical truth. Even when films are set in the past, artists and audiences understand that the function of the movies is to entertain.”¹⁰⁹ He goes a step further, describing how audiences give film-makers “permission to tell fanciful lies” but also “insist that they make those lies moderately credible.”¹¹⁰ According to Lipsitz, audiences “require ‘true’ lies, depictions of the past and present that are comprehensible to us and that locate our own private stories within a larger collective narrative.”¹¹¹

Based on W.P. Kinsella’s 1982 novel *Shoeless Joe*, Universal Pictures’ 1989 film *Field of Dreams* according to Ron Briley was a safe haven for a beleaguered Reagan-era middle class, using the baseball diamond as “a metaphor for reconciliation...reaffirm[ing] the domestic security of an earlier, more innocent America.”¹¹² Ray Kinsella’s (played by Kevin Costner) opening monologue from the film provides a compelling example of how these films craft strategic messages about baseball’s history and cultural significance. The film’s plot is built around the restoration of Ray Kinsella’s relationship with his deceased father. In this opening monologue, Kinsella’s words communicate a version of his family history in which his father was broken or permanently marred by both time spent in urban industrial factory work and the corruption of urban baseball in the form of the 1919 Chicago Black Sox scandal. Noticeably absent in the opening monologue (and the rest of the film) is the widespread devastating impact of the 1980s farm crisis that impacted rural communities across the Midwest, including towns

¹⁰⁹ George Lipsitz, *Time Passages: Collective Memory and American Popular Culture* (Minneapolis, MN: University of Minnesota Press, 1990), 163.

¹¹⁰ Ibid.

¹¹¹ Ibid.

¹¹² Ron Briley, “Basketball’s Great White Hope and Ronald Reagan’s America” in *All Stars and Movie Stars: Sports in Film and History* edited by Ron Briley, Michael K. Schoenecke, Deborah A. Carmichael, (Lexington, KY: University Press of Kentucky, 2008), 164.

like Dyersville. Instead, redemption comes through the younger Kinsella's return to the rural, agrarian life. Placing baseball in that space is the key to helping Kinsella restore his relationship with his father.

As much as *Field of Dreams* is about baseball, it's also about the ideological power of the Midwest as a space removed from urban corruption and steeped in rhetorics of purity and conservatism, a version of the Midwest that appears elsewhere in novels like *The Great Gatsby*. The crowded city spaces featured in the opening monologue with still images and later in the film with Kinsella's travels contrast sharply with the wide open spaces of Iowa farmland. The sweeping landscape shots of Iowa farmland are also depicted aurally by James Horner's Copland-esque Americana soundtrack that is eerily similar to the "American sound" in Copland's *Appalachian Spring* and *Our Town*.¹¹³ What has made *Field of Dreams* a classic, if not the classic baseball film, is how it links baseball with an imagined vision of rural agrarian American life that is described as a panacea to urban ills. A vision that has more to do with the "American-ness" of particular race, class, and gender intersections than spatial geographies.

The other iconic *Field of Dreams* scene, Terrence Mann's (played by James Earl Jones) "People Will Come" speech, communicates similar themes. Jim Collins describes this scene as connecting "America of the late teens and the late 1960s...both periods are collapsed into mere passing moments alongside the eternal game that represents an eternal childhood."¹¹⁴ The staging of Mann's speech against the backdrop (and interjecting) protestations of Kinsella's banker brother-in-law highlights the film's reductive class politics. White collar work—and by

¹¹³ Anthony Bushard, "The Very Essence of Tragic Reality: Aaron Copland and Thomas Newman's Suburban Scoring" in *Anxiety Muted: American Film Music in a Suburban Age*, edited by Stanley C. Pelkey and Anthony Bushard (New York: Oxford University Press, 2015).

¹¹⁴ Collins, "Genericity in the Nineties," 290.

extension the more developed cities and metropolitan spaces they are associated with—are seen as antithetical to the rural agrarian vision, and the physical staging of the scene highlights these tensions. The scene begins with Kinsella, his brother-in-law Mark (played by Timothy Busfield), and Mann all sitting on the first base bleachers. As the scene unfolds and Mann's speech drowns out Mark's objections, Mann moves from the bleachers to stand in front of the field and players, while Mark remains on the bleachers, and Kinsella's gaze shifts between Mann, Mark, and the field. The camera shots in the scene focus on either Mann delivering the speech, Mark interrupting to threaten mortgage and foreclosure, or Kinsella looking torn between Mann and Mark. The scene never frames Mann and Mark together, further illustrating the tension and distance between the redemptive Midwestern imaginary and more pressing “real world” concerns.¹¹⁵

Mann's speech also casts a vision of baseball history that ignores the American pastime's repeated (and sometimes violent) marginalization and exclusion of identities that fall outside a white masculine norm. As Tudor describes, “Baseball becomes a gateway to innocence, transcendence and an uncomplicated social and personal past for the spectators. The social past evoked by this field refers to a time of national innocence apparently associated with the early part of the Twentieth Century...Pre-scandal baseball recalls the image of unregulated white major league sport, unregulated because everyone is honest and good.”¹¹⁶ The return to the rural becomes inevitable and imminently desirable, reinforcing the ideological power and sway of

¹¹⁵ Tudor describes this scene as “a crude opposition between materialism and dreaming. Capitalism is antithetical to the personal healing power of dreams. This opposition aligns baseball with dreaming instead of capitalism and disguises the economic nature of baseball, creating a misrecognition of baseball’s relationship with the spectator.” From Tudor, *Hollywood’s Vision of Team Sports*, 166-167.

¹¹⁶ Ibid., 169.

baseball in this imagined space, applying the dominant ideology of Manifest Destiny and American Exceptionalism to baseball. The reductive history Mann's speech outlines also highlights the nostalgia and memory politics at work in baseball films from this era. With the frontier conquered through franchise relocation and expansion and urban cities now corrupt, baseball reigns triumphant through a return to the imagined rural, reflecting broader neo-conservative ideologies.¹¹⁷

From the 1988 romantic comedy *Bull Durham* to the classic 1989 drama *Field of Dreams*, the films voted most popular by U.S. professional baseball fans reinforce the notion that the ideal version of the "national pastime" is played in rural, agrarian spaces.¹¹⁸ Those representations also tend to reinforce white masculinity as the norm within U.S. professional baseball—for players and for fans. Alternate representations that more accurately reflect the actual state of U.S. professional baseball labor fail to garner the same level of popularity and visibility as baseball films that reinforce white masculinity and a rural idyll.¹¹⁹ Under the guise of

¹¹⁷ According to George Lipsitz, "the city became an enemy of history, or at least of historical narratives. Its energies and pluralities suggested many stories not just one. Its injustices and exploitations called into question the inevitability (or even the reality) of progress. Finally, the real city of mutability and accommodation rebuked both the dark city of the imagination and the unrealistically bright countryside of pastoralism." From Lipsitz, *Time Passages*, 180.

¹¹⁸ Cut4 Staff, "The MLB Movie Bracket has spoken, and 'Field of Dreams' has taken home the title," *Cut4*, 26 February 2016.

<https://web.archive.org/web/20190228185221/https://www.mlb.com/cut4/mlb-movie-bracket-finals-vote-for-your-favorite-flick-of-all-time/c-165500160>.

¹¹⁹ Ron Briley, *The Baseball Film in Postwar America: A Critical Study, 1948-1962* (Jefferson, NC: McFarland & Company, Inc., Publishers, 2011). *All-Stars and Movie Stars: Sports in Film and History* (Lexington, KY: University Press of Kentucky, 2008). Latham Hunter, "'What's Natural About It?': A Baseball Movie as Introduction to Key Concepts in Cultural Studies," *Film and History: An Interdisciplinary Journal of Film and Television Studies* 35, no. 2 (2005). <https://doi.org/10.1353/flm.2005.0042>. Pellom McDaniels, III, "As American as Apple Pie: Filling in the Gaps and Recovering the Narratives of America's Forgotten Heroes," in *All Stars and Movie Stars: Sports in Film and History*, ed. Ron Briley, Michael K Schoenecke, and Deborah A. Carmichael (Lexington, KY: University Press of Kentucky, 2008).

celebrating the “national pastime,” popular baseball films avoid grappling with the complex multi-racial and multi-cultural realities of U.S. professional baseball’s past and present.

The myth of the imagined (white) rural baseball idyll is just that—a myth. But its persistence demonstrates the power of dominant ideology in despite a wealth of complicating and contradicting evidence.¹²⁰ According to David Leonard, films like *Field of Dreams* retain popularity through their “ability to codify ideologies of whiteness, masculinity, and nostalgia” and their “deployment of conservative ideologies under the guise of emotional story telling.”¹²¹ The popularity of narratives presented in such films manifest in other representational spheres, such as the baseball tourism industry in which baseball fans visit ideologically-significant sites that may not have actual historical importance.¹²²

Rather than grapple with the limitations of these dominant narratives, U.S. professional baseball largely reinforces them. For example, Major League Baseball actively mobilizes *Field of Dreams*’ popularity and embedded nostalgia, as evidenced by a 2015 YouTube video in which Major League players of a variety of ethnicities and nationalities deliver the film’s iconic

¹²⁰ Aaron Baker, *Contesting Identities: Sports in American Film* (Urbana, IL: University of Illinois Press, 2006); Caroline M. Cooper, "'Field of Dreams': A Favorite of President Clinton - but a Typical Reaganite Film?", *Literature-Film Quarterly* 23, no. 3 (1995); Jaime Schultz, "The Truth About Historical Sport Films," *University of Illinois Press* 41, no. 1 (2014). <https://doi.org/10.5406/jsporthistory.41.1.29>; "Glory Road (2006) and the White Savior Historical Sport Film," *Journal of Popular Film and Television* 42, no. 4 (2014). <https://doi.org/10.1080/01956051.2014.913001>.

¹²¹ David J. Leonard, "Do You Believe in Miracles?," in *All Stars and Movie Stars: Sports in Film and History*, ed. Ron Briley, Michael K Schoenecke, and Deborah A. Carmichael (Lexington, KY: University Press of Kentucky, 2008).

¹²² Bill Plaschke, "They Built It for a Movie, and People Keep Coming to Field of Dreams," *Los Angeles Times*, 2014, <https://web.archive.org/web/20181124043113/https://www.latimes.com/sports/la-sp-field-of-dreams-plaschke-20140803-column.html>.

“People Will Come” speech.¹²³ In a similar vein, a 2013 MLB Network promotional video took place at the *Field of Dreams* movie site.¹²⁴ According to the 2013 video’s narrator, the game of baseball has a “special place...place built by tradition and lit by the warm glow of memory.” As the video sequence unfolds, players emerge from the outfield corn and begin to play on the field. The narrator explicitly mentions the nostalgia at work, stating “Every generation has their chance to rewrite the mythology. To add the present to our pastime.” According to the narrator, baseball in this rural space is “as pure as the smile on a face and as powerful as history in the making.” “If you build it, they will come” is no longer just a line in an iconic Kevin Costner film. It’s an apt description of how U.S. professional baseball continues to operate as homogenized white masculine space. And those dominant narratives actively influence how Minor League Baseball is represented to a broader public audience.

Dominant Narratives and Digital Representation

As previously mentioned, Major League Baseball Advanced Media (MLBAM) emerged in the early twenty-first century as an attempt to strategically position U.S. professional baseball at the forefront of emerging digital markets and potential revenue streams. On one hand, MLBAM’s efforts have increased U.S. professional baseball’s visibility and made information about Major and Minor League teams more readily available. Minor League teams now have their own websites, which feature game updates, player profiles, and other types of publicity content. Those websites are often accompanied by Minor League team presence on a variety of

¹²³ MLB, “MLB players recite famous ‘Field of Dreams’ speech,” 4 April 2015, YouTube video, <https://youtu.be/x9XFV4pXRcI>. The video features Venezuelans Pablo Sandoval and Félix Hernández, Dominican Carlos Gómez, and Puerto Rican Yadier Molina, alongside U.S.-born Major League players.

¹²⁴ MLB Network, “MLB Network’s NLDS Game Two Introduction,” 4 October 2013, YouTube video, <https://youtu.be/DICdtr7KmrY>.

social media outlets, most often including Facebook, Instagram, and Twitter. Sport media scholars like David Sutera often argue that social media platforms increase fan engagement by giving fans greater access to “behind-the-scenes” information about their favorite players and teams.¹²⁵ While that remains true, this subsection of the dissertation focuses on the ways in which the social media (specifically Twitter) content produced by U.S. professional baseball actually limits access to alternate perspectives that challenge dominant narratives. As a micro-blogging platform, Twitter is well-suited to communicating discrete pieces of content about players and teams. But that focus on the achievements and experiences of specific players, teams, and seasons limits attention to the large-scale structures and labor practices that are an equally significant part of U.S. professional baseball.

The Twitter accounts harvested in this include the verified team accounts for all Major and Minor League teams, as well as other available verified accounts affiliated with U.S. professional baseball. A full table of the accounts harvested is provided in Appendix H. While Twitter is merely one of the social media platforms used by U.S. professional teams, the challenge of harvesting reliable back-end data for Instagram or Facebook made Twitter a feasible choice for consistent data collection. The Twitter data presented in this section was gathered between March 2018 and November 2018 and represents 1,284,982 unique Tweets. The information gathered from Twitter works as both a dataset and an archive. It illustrates the “official” messages U.S. professional baseball communicates using digital platforms, while also illustrating how U.S. professional baseball uses Twitter as a platform to increase fan engagement and public visibility.

¹²⁵ David M. Sutera, *Sports Fans 2.0: How Fans Are Using Social Media to Get Closer to the Game* (Lanham, MD: Rowman and Littlefield, 2013).

Founded in 2006, Twitter grew quickly in popularity before a 2013 IPO valued at \$1 billion.¹²⁶ While MLB Advanced Media began in 2000, no Major or Minor League teams joined the new social media platform until June 2006, when a single Minor League team joined the platform. While some branding initiatives like standardized official websites were top-down directives, Minor League Baseball's limited national visibility allows teams some flexibility and autonomy in crafting their digital identity. Six other Minor League teams followed suit in 2008. MLB Advanced Media joined the platform in December 2008, followed by the first Major League team (Los Angeles Angels) in May 2009. The Colorado Rockies were the final Major League team to join the platform, creating their official account in June 2010. This timeline for Twitter adoption provides further evidence that new practices or trends originate in Minor League Baseball before being implemented at the Major League level.

Given their national profile, Major League teams have the highest number of followers; the 30 most-followed Twitter accounts are those of the 30 Major League teams (see Table 3).¹²⁷ Outside those top spots, the next most-followed teams are at the AAA level, in which teams are most often located in metropolitan markets like Nashville, Memphis, and New Orleans. However, Liga Mexicana de Béisbol, the group of AAA teams that are not affiliated with Major

¹²⁶ Claudine Beaumont, "Twitter Users Send 50 Million Tweets Per Day," *Telegraph*, 2010, <https://web.archive.org/web/20190228185646/https://www.telegraph.co.uk/technology/twitter/7297541/Twitter-users-send-50-million-tweets-per-day.html>; SG, "Big Goals, Big Game, Big Records," *Twitter*, 2010, https://web.archive.org/web/20190228185725/https://blog.twitter.com/official/en_us/a/2010/big-goals-big-game-big-records.html; New Statesman, "Twitter Registers 1,500 Per Cent Growth in Users," *New Statesman America*, 2010, <https://web.archive.org/web/20190228185743/https://www.newstatesman.com/digital/2010/03/twitter-registered-created>.

¹²⁷ These follower counts were calculated as of December 30, 2018. The table of account follower totals reflects the number of followers for those accounts as of December 30, 2018.

League teams, has follower totals equal to the AAA teams affiliated with Major League teams.

To put these numbers in perspective, the Twitter accounts for less-advanced Minor League teams tend to have fewer 5,000 followers, while AAA teams like the Memphis Redbirds and Nashville Sounds have anywhere from 55,000 to 70,000 followers. As a point of comparison, the least-followed Major League Twitter account (belonging to the Florida Marlins) has over 530,000 followers.

Comparing the number of Twitter followers across different Major and Minor League classification levels supports the larger argument made in this dissertation about the lack of public attention and wide-spread awareness for Minor League Baseball. While social media marketing and promotion efforts have increased access for geographically-disparate fans, comparing the number of followers for Major and Minor League teams suggests that the fans that engage with Major League Twitter accounts do not follow affiliated Minor League teams in equal numbers.

The Twitter content produced by official team accounts less than surprising, as game updates, team performances, and upcoming promotions dominate the Twitter content generated by teams during the 2018 season (see Figure 68). However, the circulation of these Tweets and the overall large following for team-run Twitter accounts makes clear the degree to which social media platforms like Twitter are an important mechanism used by U.S. professional baseball to communicate messages about its significance with a broader public audience. Those representations largely avoid wading into complex conversations or potentially ideologically-fraught topics. Team-generated Twitter content promotes a celebratory, optimistic vision of the game as it's being played by Major and Minor League teams and players.

However, the digital platforms used by U.S. professional baseball teams have recently moved toward initiatives that recognize the sport's increasingly global dimensions. For example, Major League Baseball's primary website (mlb.com) is available in Spanish, Japanese, and Korean, as well as English. Those multi-lingual options have been available at least February 2007, according to the Internet Archive's WayBack machine.¹²⁸ As another example, in 2018, Minor League Baseball launched *Copa de la Diversión*, a promotional campaign designed to increase Minor League Baseball's engagement with Latinx communities. According to Minor League Baseball's website, "'Copa de la Diversión,' or 'Fun Cup,' is a season-long event series specifically designed to embrace the culture and values that resonate most with participating teams' local U.S. Hispanic/Latino communities."¹²⁹ According to the webpage for *Copa 2019*, "'Copa serves as the cornerstone of MiLB's expanding Latinx fan engagement initiative to engage, entertain and delight the largest, youngest and most financially influential community in the U.S. today.'"¹³⁰

On the surface, these shifts attempt to recognize and celebrate U.S. professional baseball's relationship with global fan communities. An event like *Copa* celebrating Latin American culture creates space for alternate types of cultural representations. However, even public descriptions for *Copa* emphasize U.S. professional baseball's interest in using multi-cultural fan engagement to secure additional revenue streams. More pointedly, "the largest, youngest, and most financially influential community in the U.S. today" does not constitute a

¹²⁸ "MLB.com," WayBack Machine, Internet Archive. Accessed 20 December 2018. <https://web.archive.org/details/http://mlb.mlb.com/index.jsp>.

¹²⁹ "Copa," *MiLB.com*. 2019. <https://web.archive.org/web/20190228185829/https://www.milb.com/fans/copa>.

¹³⁰ "Copa Schedule," *MiLB.com*. 2019. <https://web.archive.org/web/20190228185842/https://www.milb.com/fans/copa/schedule>.

significant effort to challenge existing dominant narratives about U.S. professional baseball. Nor does it offer a direct acknowledgement of the exploitative Minor League labor practices that increasingly impact Latinx players. Instead, Latinx communities are valuable to U.S. professional baseball only to the degree that they represent or offer affordable labor sources and new fan revenue streams.

Complicating Dominant Narratives

Narratives that reinforce U.S. professional baseball's white masculine ideal and connection with rural, agrarian geographic spaces become increasingly untenable when faced with the developments taking place in those purportedly rural spaces, as well as the developments taking place in U.S. professional baseball. Increased globalization and corporatization within agriculture as well as shifting geographies of production have drastically reshaped purportedly rural, agrarian cultural spaces.¹³¹ Additionally, conflating Minor League Baseball and rural geographic spaces ignores the Minor Leagues' shifting geography. The Minor League affiliate system originally conceived by Branch Rickey focused explicitly on maximizing potential return on investment in player development initiatives. That mindset created vast Minor League operations coordinated by the Major League team. During the 1980s and 1990s, attitudes toward Minor League teams' financial viability shifted. Rather than solely being about player development, Minor League teams also began to prioritize financial sustainability. Thus, Minor League teams shifted toward being strategically located in cities and regional markets that might be able to support a professional sport team. As Figures 69 and 70 illustrate, Minor League

¹³¹ Rubén O. Martínez, ed., *Latinos in the Midwest* (East Lansing, MI: Michigan State University Press, 2011). Ann V. Millard and Jorge Chapa, *Apple Pie and Enchiladas: Latino Newcomers in the Rural Midwest* (Austin, TX: University of Texas Press, 2004). Sujev Vega, *Latino Heartland: Of Borders and Belonging in the Midwest* (New York: New York University Press, 2015).

baseball is played throughout the United States (and even outside the United States in Mexico), making it hardly exclusive to the rural, agrarian regions. The smallest community to host a Minor League team in the 2018 season (Burlington, Iowa) recorded a population of 26,700 in the most-recent U.S. census, questioning the degree to which Minor League teams are located in truly rural spaces.

The globalization of U.S. professional baseball has radically reshaped Minor League teams, even those playing in quasi-rural spaces like eastern Iowa. With increased numbers of players born outside the U.S., the degree to which the “national pastime” reflects a white agrarian idyll bears further scrutiny. First, as outlined in the previous section of the dissertation, U.S. professional baseball has not shied away from establishing Minor League teams and player development operations outside the U.S. Second, U.S. professional baseball also includes increasing numbers of players born outside Northern America, specifically players from Latin America and the Caribbean. Dominant cultural narratives or representations that place Minor League Baseball in quasi-rural spaces are at odds with the reality of where teams are actually located. Additionally, representations or narratives that reinforce white U.S.-born players as the norm are increasingly at odds with the sport’s global labor force.

Focusing on Minor League Baseball and its labor force frames U.S. professional baseball as a dynamic, contested borderland site. Looking at the global dimensions of U.S. professional baseball’s labor force further emphasizes how dominant cultural representations often fail to accurately reflect that nuance and complexity. Instead, many of these representations reinforce U.S. professional baseball as a sport played by white, U.S.-born men, for other white, U.S.-born men. The power of ideology allows these dominant narratives to persist. However, players and

fans have increasingly begun to use digital platforms to communicate alternate perspectives and interpretations of U.S. professional baseball's cultural significance.

As one example, in 2015, actor and comedian Chris Rock appeared on HBO's *Real Sports with Bryant Gumbel* and presented an entire seven-minute segment on the limited presence and visibility of African Americans in baseball.¹³² Rock describes U.S. professional baseball as "old fashioned and stuck in the past...Baseball wants everything to stay the way things used to be." Rock points out how U.S. professional baseball's reliance on "tradition" is rife with racial politics—"there's a right way to play the game. The white way. The way it was played 100 years ago, when only whites were allowed to play." Rock isn't alone in pointing out the whiteness of U.S. professional baseball's traditions and codes of conduct. He mentions the backlash Cuban born Yasiel Puig experienced for his playing style after he joined U.S. professional baseball. Dominican Major League outfielder José Bautista faced similar criticism for the playing style he exhibited during a 2014 game. In a *Player's Tribune* piece titled, "Are You Flipping Kidding Me?," Bautista describes his actions as an emotional response to a significant moment, saying, "I didn't plan it... It wasn't because I don't respect the unwritten rules of the game. I was caught up in the emotion of the moment."¹³³ Bautista also points out how U.S. professional baseball's unwritten rules—like those that govern the degree to which players can celebrate during a game—are invoked far more often for Latinx players. "Nowadays, when a player flips his bat, especially a guy who wears his emotions on his sleeve, a small section of people always seem to turn it into a debate about the integrity of the game." Like

¹³² HBO, "Chris Rock's Take on Blacks in Baseball: Real Sports (HBO)," 22 April 2015, YouTube video, <https://youtu.be/oFFQkQ6Va3A>.

¹³³ José Bautista, "Are You Flipping Kidding Me?," *Player's Tribune*, 2015, <https://web.archive.org/web/20180316110027/https://www.theplayerstribune.com/jose-bautista-bat-flip/>.

Rock, Bautista argues many of U.S. professional baseball's traditions and unwritten rules are in fact culturally-specific and not universal across global baseball.

Major League outfielder Bryce Harper made a similar argument in a 2016 *ESPN The Magazine* profile. "Sorry, Not Sorry," made waves for critiquing U.S. professional baseball's inflexible adherence to a narrow vision of appropriate conduct.¹³⁴ According to Harper, "Baseball's tired...It's a tired sport, because you can't express yourself. You can't do what people in other sports do." For Harper, increasing U.S. professional baseball's popularity with new generations of audiences requires taking inspiration from the types of spectacle and celebration on display in other U.S. professional sports and in baseball as played outside the U.S. The *New York Times Magazine*'s Jay Caspian Kang offered similar arguments in his 2016 article, "The Unbearable Whiteness of Baseball."¹³⁵ Kang admits that while U.S. professional baseball is financially stable, its "cultural relevance has been in a steady decline."¹³⁶ In a telling indictment, Kang emphasizes how U.S. professional baseball's marketing efforts have become increasingly separated from the actual, real-world dimensions of the game, an argument made repeatedly in this section of the dissertation.

Kang critiques owners and executives for white-washing U.S. professional baseball, but he also criticizes sport media's role in perpetuating this imagined history. "The source of baseball's diminished hold on our imaginations runs much deeper than social-media strategy.

¹³⁴ Tim Keown, "Sorry Not Sorry," *ESPN The Magazine*, ESPN, 2016, https://web.archive.org/web/20181215162308/http://www.espn.com/espn/feature/story/_/id/14935765/washington-nationals-bryce-harper-wants-change-baseball-forever.

¹³⁵ Jay Caspian Kang, "The Unbearable Whiteness of Baseball," *New York Times Magazine*, New York Times, 2016, <https://web.archive.org/web/20181021063450/https://www.nytimes.com/2016/04/10/magazine/the-unbearable-whiteness-of-baseball.html>.

¹³⁶ Ibid.

The problem lies in the demographics of baseball's rosters, and the shameful way in which the majority of its media has failed to pay anything approaching adequate attention to the Latino players who have entered the game over the last two decades.”¹³⁷ Some more recent media coverage has drawn attention to the shifting demographics of U.S. professional baseball labor, and more recent films like *Sugar* (2008) and *Ballplayer: Pelotero* (2011) grapple with the lived experiences of Minor League players and the significant barriers faced by players of color and players born outside Northern America. However, that increased attention has not yet substantively challenged the sport’s existing labor structures. As outlined elsewhere in the dissertation, lawsuits attempting to revise Minor League Baseball’s legal status have not been successful. In fact, lobbying efforts by Minor League Baseball’s executive office have succeeded in rewriting federal law to foreclose legal alternatives for Minor League player action.

Conclusion: Minor League Players and Digital Advocacy

As previously mentioned, Minor League players have few legal avenues for labor action. However, the same digital media platforms used by U.S. professional baseball to reinforce dominant narratives have increasingly been used by Minor League players to raise awareness about their labor precarity and often less than desirable working conditions. In doing so, Minor League players are using digital platforms’ affordances to exercise agency, voice dissent, and advocate on behalf of their own interests. As a prime example of this phenomenon, Minor League Grinders is an Instagram account started by former Minor League player Blake McFarland (see Figure 71). Publishing crowd-sourced submissions and content, the account provides an insider’s perspective on lived experiences of Minor League Baseball players.¹³⁸ In

¹³⁷ Ibid.

¹³⁸ Jef Passan, "How an Instagram Account Goes for Laughs While Showing the Underbelly of Minor League Baseball," *Yahoo Sports*, 2018,

doing so, the account offers perspectives on Minor League working conditions that otherwise might not be accessible to a broader public audience.

For example, the account highlights the often sparse and crowded living conditions players adopt to minimize housing expenses. For example, the Instagram post in Figure 72 illustrates a single room filled with mattresses used by Minor League players, and Figure 73's post shows how a group of Minor League players converted a studio apartment into sleeping space for four players. The Instagram post in Figure 74 shows an inflatable pool flotation bed being used as a bed. Unfurnished or minimally-furnished apartments are the norm (see Figures 75-78), and Minor League players bemoan the impact these living conditions have on their playing ability and physical health (see Figure 79). This genre of social media content also highlights the often poorly-maintained facilities at Minor League stadiums. Figure 80's Instagram post shows a player showering outside in the rain because the ballpark's shower facilities were not operational, and the Instagram post in Figure 81 features a player sleeping in a makeshift locker erected in the ballpark's shower facilities. Figures 82-84 illustrate the creative measures players use to avoid contamination exposure, given the negative impact an illness or infection would have on their playing ability. While Minor League teams are required to have a trainer or medical assistant with some level of professional medical training, the nutrition and dietetics resources provided at the Major League level (as well as resources that Major League players can personally afford) are noticeably absent at the Minor League level. As illustrated in Figures 85-87, team-provided meals are minimally appetizing and lack the nutrition required by elite professional athletes.

<https://web.archive.org/web/20180815205315/https://sports.yahoo.com/instagram-account-goes-laughs-showing-underbelly-minor-league-baseball-005918740.html>.

On the surface, much of this social media content is presented in a humorous fashion. However, it provides key insights into how Minor League players experience their precarious labor conditions and adapt in less-than-ideal working conditions. Whether dealing with living situations, sleeping arrangements, or food sources, Minor League players who do not have substantial personal wealth, family support, or other income sources face a range of challenges. While some players have those additional support mechanisms and resources, many do not. And, as previously mentioned, Minor League players born outside the U.S. face significant additional challenges beyond those shared across the Minor League player community. With salaries that are below a living wage and playing conditions that are not significantly regulated, Minor League players have a long history of using creative measures to adapt and function.¹³⁹ Social media advocacy efforts like the Minor League Grinders Instagram account use digital platforms to communicate those tactics in new ways to broader public audiences. From sleeping on travel buses to dealing with broken equipment, this genre of social media content directly speaks to Minor League players' working conditions (see Figures 88-102).

However, as the conversation around the Save America's Pastime bills and class-action lawsuits

Miranda v. Selig and *Senne v. MLB* lawsuits has drawn attention to the working conditions of Minor League players, some current and former players have used social media to directly draw attention to their working conditions. In the Tweet presented in Figure 103, former Minor League player Colin Young says "Minor League Baseball bus rides have prepared for any

¹³⁹ Jim Bouton and Leonard Shecter, *Ball Four; My Life and Hard Times Throwing the Knuckleball in the Big Leagues* (New York: World Pub. Co., 1970). Dirk Hayhurst, *Bigger Than the Game: Restitching a Major League Life* (New York: Citadel Press, 2014). *The Bullpen Gospels: Major League Dreams of a Minor League Veteran* (New York: Citadel Press, 2010). *Out of My League: A Rookie's Survival in the Bigs* (New York: Citadel Press, 2012).

type of travel length of snafu. I can handle just about anything. I'm just glad that 9 year career has something to show for it besides the massive debt when I retired. Cheers!”¹⁴⁰ Some Minor League players are drawing attention to the discrepancy between their working conditions and those experienced in the player development systems of other U.S. professional sports. After a sports journalist Tweeted about the salaries earned by players in the National Basketball Association’s player development G-League, current Minor League player Austin Warner responded with the following Tweet: “Early connecting flights, long bus rides, dumpy stadiums. Welcome to Minor League Baseball. Except G-League select contracts are \$125,000. Guess how much us MiLB-er’s make?” (see Figure 104). These posts and similar messages (see Figure 105) represent new strategies for digital activism used by Minor League players to increase awareness and visibility for their working conditions.

As another example, current Minor League player Kaleb Earls received his W-2 earnings statement in the mail and posted the following Tweet in response: “I just received my W2 and I made a whopping \$3,712.05 during the entire baseball season. I feel bad for the players who have a family and can't pursue their dreams because they can't afford to take care of their families. People wonder why players have to get a job in the off-season” (see Figure 106).¹⁴¹ On a more humorous note, current Minor League player Jordan Minch Tweeted “I make more

¹⁴⁰ Colin Young (OleGreyBeard), "Minor League Baseball Bus Rides Have Prepared for Any Type of Travel Length of Snafu. I Can Handle Just About Anything. I'm Just Glad That 9 Year Career Has Something to Show for It Besides the Massive Debt When I Retired. Cheers!," Twitter, 2016.

<https://web.archive.org/web/20190228190233/https://twitter.com/OleGreyBeard/status/1078155909099077632>.

¹⁴¹ Kaleb Earls (K_Earls32), "I Just Received My W2 and I Made a Whopping \$3,712.05 During the Entire Baseball Season. I Feel Bad for the Players Who Have a Family and Can't Pursue Their Dreams Because They Can't Afford to Take Care of Their Families. People Wonder Why Players Have to Get a Job in the Off-Season.," Twitter, 2018.

https://twitter.com/K_Earls32/status/955645803334438913.

money a month driving for uber [sic] than I do during the season” (see Figure 107).¹⁴² As mentioned previously, Major League salary levels have a required minimum established via collective bargaining. For players who reach free agency and sign with a Major League club, their ability to negotiate large multi-year contracts is made possible by the salary protections and free agency provisions of the Collective Bargaining Agreement. Lacking the same avenues for negotiating on the free market, Minor League players’ salary levels and other forms of benefits are all dictated by team management. The Instagram post in Figure 108 shows the \$183.00 earned by a Minor League player during a single earning period, and Figure 109’s Instagram post shows the \$14.00 daily per diem a Minor League player received for food and other expenses. As a point of reference, the per diem rate used by the Internal Revenue Service for tax purposes is approximately \$50 per day.¹⁴³

This genre of social media content has yet to have a substantive impact on Minor League labor structures and working conditions. But, its emergence over the last few years follows a longer tradition of U.S. professional baseball players using their “insider’s perspective” to challenge dominant or mainstream perceptions of the “national pastime.” For example, Jim Bouton experienced significant backlash after publishing his irreverent *Ball Four* in 1970.¹⁴⁴ Jackie Robinson’s 1972 autobiography *I Never Had It Made* draws on Robinson’s playing career

¹⁴² Jordan Minch (Jordan_Minch), "I Make More Money a Month Driving for Uber Than I Do During the Season," Twitter, 2018.

https://web.archive.org/web/20190228190422/https://twitter.com/Jordan_Minch/status/1075830132215083010.

¹⁴³ "Per Diem Rates," GSA.gov, 2018,
<https://web.archive.org/web/20190216102550/https://www.gsa.gov/travel/plan-book/per-diem-rates>.

¹⁴⁴ Bouton.

to provide an incisive reflection on the intersection of race, sport, and politics.¹⁴⁵ Former Minor League veteran Dirk Hayhurst's *The Bullpen Gospels* series provides a sardonic, if at times humorous, perspective on life in the Minor Leagues. The shifting conversation around professional sport as a full-time occupation is reflected in the attitudes of Minor League players toward the value of their labor. As evidenced by the player development structures and practices used in the National Basketball Association and National Hockey League, elite professional sport organizations have a range of options and models to employ when building minor league or affiliated player development systems. That Major and Minor League Baseball persist in maintaining the current Minor League structure and system suggests concentrated, strategic action by players will be required to enact substantive structural change.

In the twenty-first century digital media landscape, the labor represented by digital forms of cultural production constitutes a key strategy used by U.S. professional baseball to communicate specific, strategic messages about the institution's cultural meaning and significance. This section of the dissertation looks at how the many of those dominant cultural narratives associated U.S. professional baseball tend to overlook the material realities, historical conditions, and structures of power that shape the experiences of the sport's labor force. Additionally, this section of the dissertation demonstrates the ways in which Minor League players use social media channels to draw attention to issues of labor and equity that have been largely otherwise overlooked. In doing so, this section of the dissertation points out the expanded notion of labor, production, and representation that may be needed for Minor League players to effect change in their working conditions and labor structures.

¹⁴⁵ Jackie Robinson and Alfred Duckett, *I Never Had It Made: An Autobiography of Jackie Robinson* (New York: HarperCollins, 1994).

Tables

Table 3. Table of Major and Minor League Twitter accounts, with number of followers and date joined. Data gathered December 30, 2018.

| Team | Number of Followers | Date Joined |
|---------------------|----------------------------|--------------------|
| Marlins | 326342 | 2009 |
| Padres | 383232 | 2009 |
| RaysBaseball | 537648 | 2009 |
| Mariners | 539076 | 2009 |
| Athletics | 542847 | 2009 |
| Rockies | 546025 | 2010 |
| Dbacks | 574668 | 2009 |
| Brewers | 576733 | 2009 |
| Twins | 604306 | 2009 |
| Nationals | 693590 | 2009 |
| Pirates | 732419 | 2009 |
| Orioles | 779761 | 2009 |
| Reds | 819966 | 2009 |
| whitesox | 903455 | 2009 |
| Indians | 1025411 | 2009 |
| Mets | 1035603 | 2009 |
| Royals | 1041934 | 2009 |
| Angels | 1065441 | 2009 |
| Cardinals | 1188351 | 2009 |

| | | |
|-----------------|---------|------|
| Braves | 1242573 | 2009 |
| Rangers | 1415498 | 2009 |
| astros | 1430608 | 2009 |
| tigers | 1445069 | 2009 |
| SFGiants | 1770548 | 2009 |
| Phillies | 1778564 | 2009 |
| RedSox | 2076470 | 2009 |
| Dodgers | 2091423 | 2009 |
| BlueJays | 2234945 | 2009 |
| Cubs | 2514101 | 2009 |
| Yankees | 3343328 | 2009 |

Figures



Figure 68. Word cloud generated using twarc from all harvested Tweets.



Figure 69. Ben's Biz Blog, MiLB.com, April 2014.

<https://web.archive.org/web/20190228190623/https://mlblogsbensbiz.files.wordpress.com/2014/04/map.jpg?w=555&h=464>.



Figure 70. Ashley Marshall, "Planning the Ultimate Minor League Baseball Road Trip: An Exercise in Patience," Ben's Biz Blog: Exploring America Through Minor League Baseball, MiLB.com. April 8, 2015.

<https://web.archive.org/web/20180129090116/https://mlblogsbensbiz.files.wordpress.com/2015/04/map.jpg>.

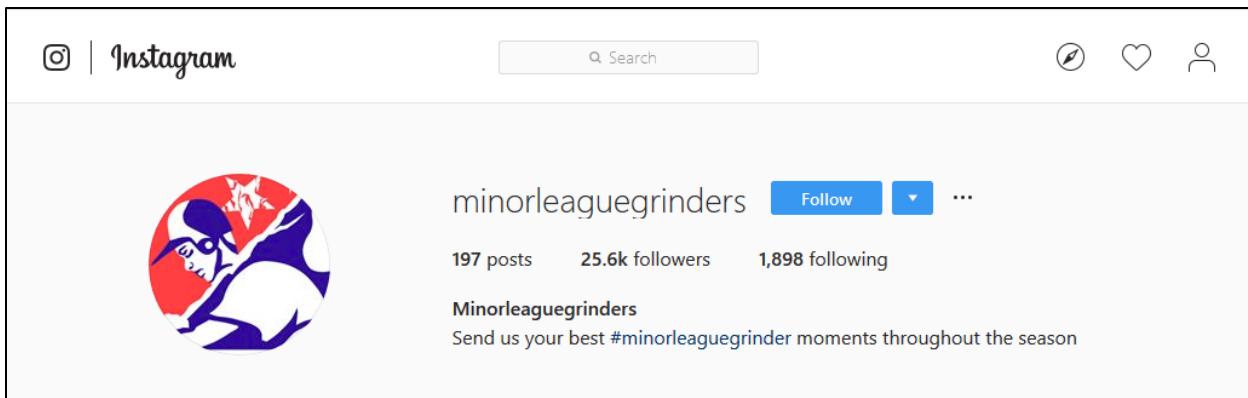


Figure 71. Minor League Grinders Instagram banner.

<https://web.archive.org/web/20190228190700/https://www.instagram.com/minorleaguegrinders/>.



Figure 72. Minor League Grinders Instagram post (17 April 2018).

<https://web.archive.org/save/https://www.instagram.com/p/BhrMqO6nEN6/>.



Figure 73. Minor League Grinders Instagram post (15 August 2017).
<https://web.archive.org/web/20190228191026/https://www.instagram.com/p/BX0VndrFdZq/>.



Figure 74. Minor League Grinders Instagram post (3 July 2018).
<https://www.instagram.com/p/BkyCbYjdSU/>.



Figure 75. Minor League Grinders Instagram post (5 April 2018).
<https://www.instagram.com/p/BhLUVqelzv8>.



Brandon Lawson

@B_Lawson1213

Follow



The minor league life is luxurious when you make \$1180 a month 😂 I made a kitchen into my bedroom for the season... Using a coat rack as my closet, air mattress, a box fan, and a handcrafted sheet wall for privacy 🤪
#MinorLeagueGrinder #KitchenBedroom
#MiLBprobz



12:38 PM - 5 Apr 2018

823 Retweets 2,742 Likes



104

823

2.7K

✉

Figure 76. Tweet by Brandon Lawson (5 April 2018).

https://web.archive.org/web/20190228191358/https://twitter.com/B_Lawson1213/status/981949317979279360.

Wade Wass
@WadeWass_10

The official @milb apartment

kat hasty @kathasty
guys really live in apartments like this and don't see any issue
Show this thread

11:17 AM - 13 Dec 2018

340 Retweets 4,144 Likes

72 340 4.1K

Figure 77. Tweet by Wade Wass (13 December 2018).
https://web.archive.org/web/20190228191457/https://twitter.com/WadeWass_10/status/1073265584685703169.

 **Wade Wass** @WadeWass_10 · 13 Dec 2018
The official @milb apartment


kat hasty @kathasty
guys really live in apartments like this and don't see any issue
[Show this thread](#)

Q 72 RT 340 ❤ 4.1K 📧

 **Brittany Callahan**
@BrittCallie

Follow

Replying to @WadeWass_10 @MiLB

I once walked into one where the whole living room/dining room was mattresses. Two of the inhabitants went on to win 5 Gold Gloves between them.

5:09 PM - 13 Dec 2018 from Mobile, AL

11 Likes 

Q 1 RT 1 ❤ 11 📧

Figure 78. Tweet by Wade Wass and reply by Brittany Callahan (December 2018).
<https://web.archive.org/web/20190228191539/https://twitter.com/BrittCallie/status/1073354293959450627>.



Figure 79. Tweet by Kaleb Earls (1 September 2015).
https://twitter.com/K_Earls32/status/638592793343041536.



Figure 80. Minor League Grinders Instagram post (4 July 2018).
<https://www.instagram.com/p/Bk0xMUNjgjS>.



Figure 81. Minor League Grinders Instagram post (18 July 2018).
<https://www.instagram.com/p/BIYdfPLJxvt>.



Figure 82. Minor League Grinders Instagram post (11 August 2018).
<https://www.instagram.com/p/BmU6Ej6Dsqx>.



Figure 83. Minor League Grinders Instagram post (11 June 2017).
<https://www.instagram.com/p/BVNfR0CFRD3>.



Figure 84. Minor League Grinders Instagram post (2 May 2017).
https://www.instagram.com/p/BTmu8V_FIfS.

 **Kyle Burger**
@kyle_burger

Follow ▾

Barons pre-game meal... PB&J. Gotta love minor league baseball @sugarstevem
@colecubelic



4:46 PM - 10 Jul 2013

3 Retweets 2 Likes

1 3 2

Figure 85. Tweet by Kyle Burger (10 June 2013).

https://web.archive.org/web/20190228192202/https://twitter.com/kyle_burger/status/355080723935420416.



Figure 86. Minor League Grinders Instagram post (28 April 2017).
https://www.instagram.com/p/BTc_iALFSFT.



Figure 87. Minor League Grinders Instagram post (23 July 2017).
<https://www.instagram.com/p/BW4-6DyFIXe>.



Figure 88. Tweet by David Fine (18 July 2015).

<https://web.archive.org/web/20190228192320/https://twitter.com/DavidFineTweets/status/622419610399285249>.



Figure 89. Tweet by Ben Heller (22 August 2014).

<https://web.archive.org/web/20190228192351/https://twitter.com/BenHeller21/status/502834917655736320>.

Blair Lakso  @BlairLakso

Follow

Another Minor League Baseball road trip where we decided to take a full bus through the mountains of Tennessee to Virginia. Will keep everyone updated when my anxiety has peaked.

10:54 AM - 16 Aug 2018

42 Likes 

1 Retweet 

42 Favorites 



Tweet your reply

Blair Lakso  @BlairLakso - 16 Aug 2018
Seems as though the bus driver is playing a game called "Let's see how long I can stay on the speed bumps".

2 Retweet 

17 Favorites 



Blair Lakso  @BlairLakso - 16 Aug 2018
Was woken up by the bus driver slamming on the brakes, never felt so powerless in my life. Roads are decreasing in width resting heart rate has to be 170/100.

5 Retweet 

23 Favorites 



Blair Lakso  @BlairLakso - 16 Aug 2018
Good news we made it to La Fiesta. Looks like a party to me. – at La Fiesta Mexican Grill



10 Favorites 

Figure 90. Tweet thread by Blair Lasko (16 August 2018).

<https://web.archive.org/web/20190228192431/https://twitter.com/BlairLakso/status/1030142323785646080>.

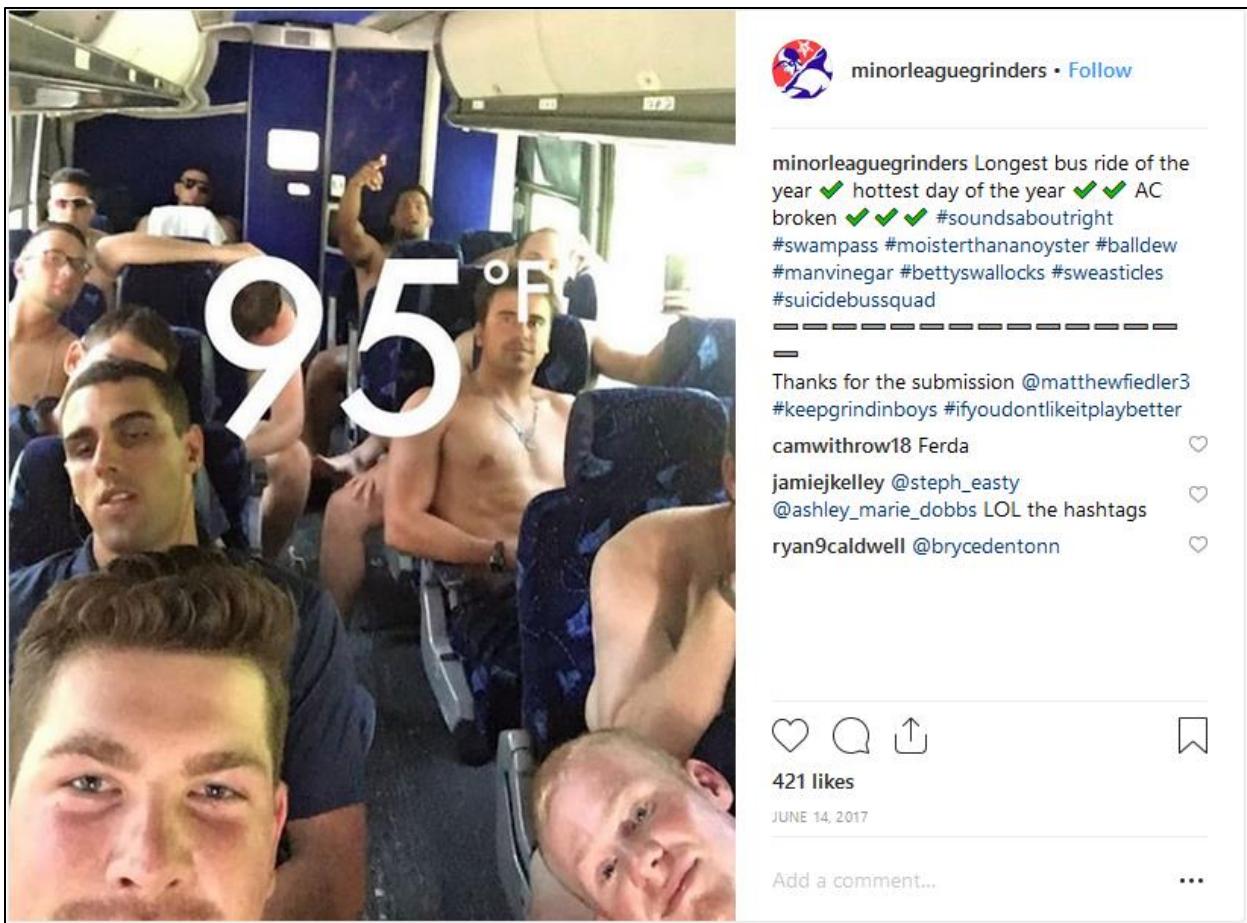


Figure 91. Minor League Grinders Instagram post (14 June 2017).
https://www.instagram.com/p/BVVPPUYIP_b/.



Figure 92. Minor League Grinders Instagram post (13 August 2017).
https://www.instagram.com/p/BXvIW_UlwOh.



Figure 93. Minor League Grinders Instagram post (8 August 2018).
<https://www.instagram.com/p/BmOkbIDD0pn/>.



Figure 94. Tweet by Trevor Oaks (17 August 2018).
<https://web.archive.org/web/20190228192636/https://twitter.com/trevoaks/status/1030468599306014720>

 **James Ziembra**
@jameslikesbball

Follow ▾

Nothing says minor league baseball like blowing a 2 run lead in the 9th, losing on a walkoff, and then the bus breaking down in the middle of Iowa!!!
@BurlingtonBees



▶ 40K views 0:03 / 0:05 🔍 ↗

9:30 PM - 29 Apr 2018

85 Retweets 489 Likes

20 85 489

Figure 95. Tweet by James Ziembra (29 April 2018).

<https://web.archive.org/web/20190228192740/https://twitter.com/jameslikesbball/status/990780406189514753>.

James Ziembra @jamedlikesball - 29 Apr 2018
Nothing says minor league baseball like blowing a 2 run lead in the 9th, losing
on a walkoff, and then the bus breaking down in the middle of Iowa!!!
@BurlingtonBees



0:05 40K Views

0 20 13 35 489 5

James Ziembra
@jamedlikesball

Follow

UPDATE: 2 and a half hours later and our savior has arrived! Back to Burlington we go... off day here we come!!! @BurlingtonBees @MiLB



0:15 6,242 Views

12:11 AM - 30 Apr 2018

6 Retweets 42 Likes

0 13 8 42 5

Figure 96. Tweet thread by James Ziembra (29 April 2018).

<https://web.archive.org/web/20190228192740/https://twitter.com/jamedlikesball/status/990780406189514753>.



Figure 97. Tweet by Tyler Watson (7:59 PM, 11 July 2016).
https://web.archive.org/web/20190228193148/https://twitter.com/TyWatson_35/status/752668780979978240.

 **Tyler Watson**
@TyWatson_35

Follow ▾

Update..still screwed.



8:04 PM - 11 Jul 2016 from Illinois, USA

1 Retweet 12 Likes



1 1 12 1

 Tweet your reply

Kenton Cole @kentoncole · 11 Jul 2016
Replying to @TyWatson_35
meanwhile, I'm patiently waiting at the ballpark.....

1 1 1 1

Figure 98. Tweet by Tyler Watson (8:04 PM, 11 July 2016).

https://web.archive.org/web/20190228193224/https://twitter.com/TyWatson_35/status/752669943909482496.



Figure 99. Tweet by Tyler Watson (8:14 PM, 11 July 2016).
https://web.archive.org/web/20190228193250/https://twitter.com/TyWatson_35/status/752672550421983232.



Figure 100. Tweet by Tyler Watson (8:18 PM, 11 July 2016).
https://web.archive.org/web/20190228193321/https://twitter.com/TyWatson_35/status/752673345938853888.

Todd Van Steensel (@toddvs35) • 10 Apr 2018
 If you ever wondered why minor leaguers love rain outs, just check out their schedule.
 Today we will be spending our only scheduled off day this month on a six hour bus ride to Mobile.
 Be nice to your local MiLBers. You never know what struggle they're going through.

| April 2018 | | | | | | |
|----------------------|----------------|----------------|-----------------|---------------|---------------|----------------|
| S | M | T | W | Th | F | Sa |
| BIR Double header | BIR W 5-2 | | | BIR L 6-5 | BIR W 9-0 | BIR W 2-0 |
| PNS 2-09 p | JAX 7-10 p | JAX 7-10 p | JAX 7-10 p | JAX 7-10 p | JAX 7-10 p | JAXN 7-10 p |
| JAXN 3-09 p | JAXN 7-09 p | JAXN 7-09 p | JAXN 12-09 p | TNS 7-10 p | TNS 7-10 p | TNS 7-10 p |
| TNS 2-10 p | TNS 10-10 p | | | | | |

Q 11 T 100 L 424

Todd Van Steensel (@toddvs35) • 10 Apr 2018
 If you ever wondered why minor leaguers love rain outs, just check out their schedule.
 Today we will be spending our only scheduled off day this month on a six hour bus ride to Mobile.
 Be nice to your local MiLBers. You never know what struggle they're going through.

| July 2018 | | | | | | |
|---------------|----------------|---------------|----------------|---------------|---------------|---------------|
| S | M | T | W | Th | F | Sa |
| TNS L 3-5 | TNS L 3-5 | TNS L 3-5 | BIR W 6-2 | BIR L 2-3 | BIR L 1-0 | BIR W 3-2 |
| JAX L 3-5 | JAX L 3-3 | JAX L 3-7 | JAX L 1-0 | MTG W 7-6 | MTG L 7-0 | MTG L 2-5 |
| MTG L 1-11 | vs MTG 2 pm | | MOB 7-10 p | MOB 7-10 p | MOB 8-10 p | MOB 8-10 p |
| MOB 8-09 p | PNS 7-10 p | PNS 7-10 p | PNS 10-10 p | PNS 7-10 p | PNS 7-10 p | TNS 7-10 p |
| TNS 8-09 p | TNS 7-10 p | TNS 7-10 p | | | | |

Q 11 T 100 L 424

Figure 101. Tweet thread by Todd Van Steensel (April 2018).
<https://web.archive.org/web/20190228193413/https://twitter.com/toddvs35/status/983686177432760320>.

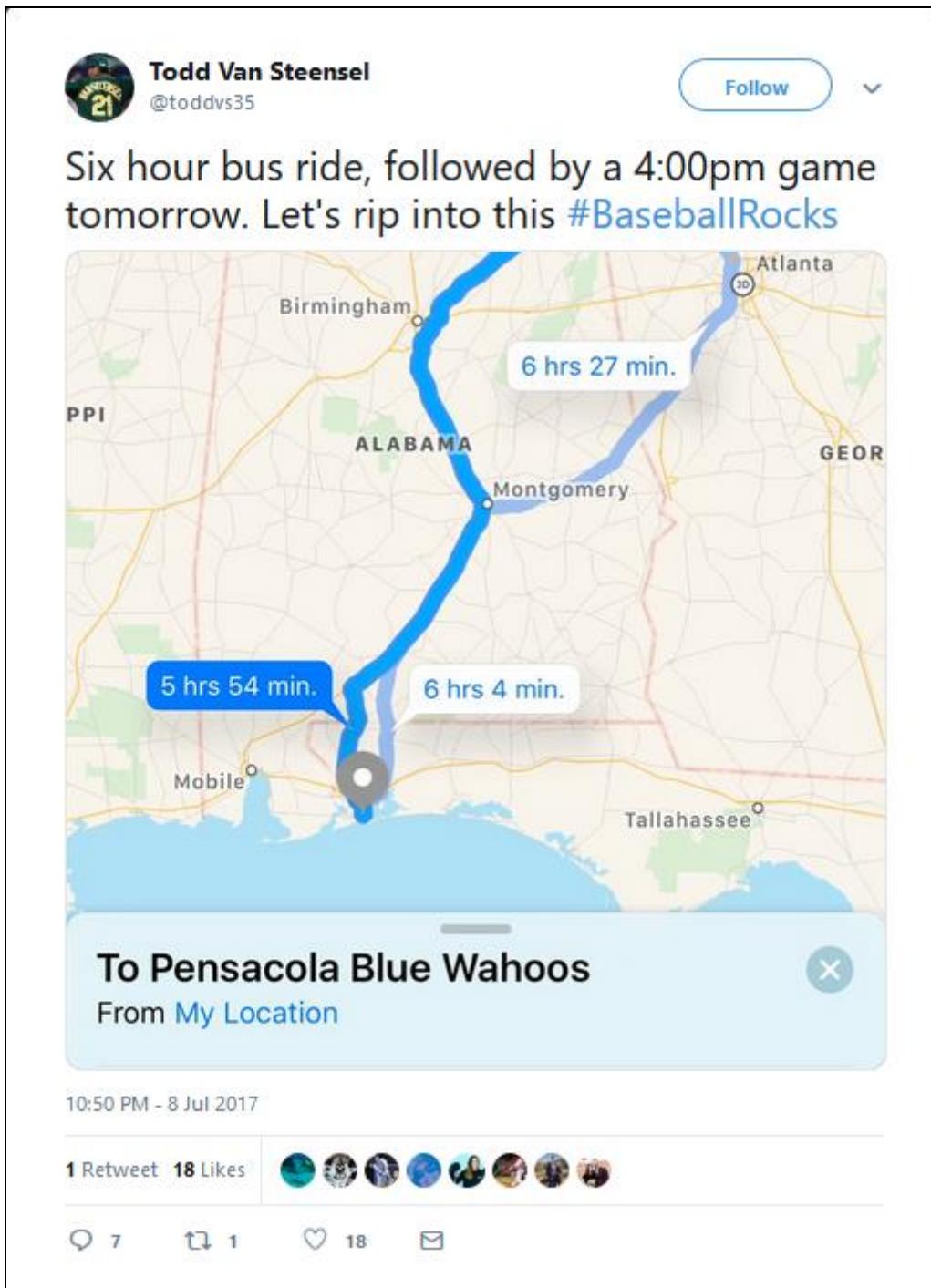


Figure 102. Tweet by Todd Van Steensel (8 July 2017).
<https://web.archive.org/web/20190228193457/https://twitter.com/toddvs35/status/883896220384714753>.

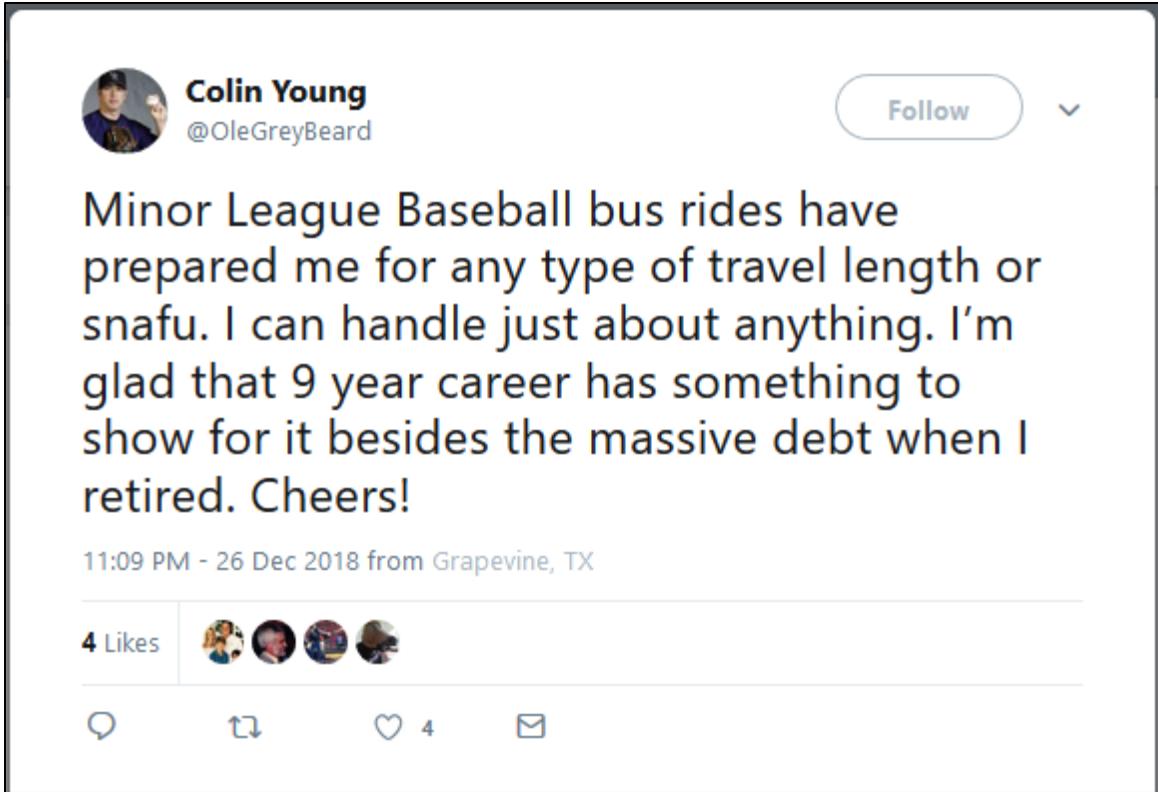
A screenshot of a Twitter post by user Colin Young (@OleGreyBeard). The tweet content is: "Minor League Baseball bus rides have prepared me for any type of travel length or snafu. I can handle just about anything. I'm glad that 9 year career has something to show for it besides the massive debt when I retired. Cheers!" The tweet was posted at 11:09 PM - 26 Dec 2018 from Grapevine, TX. It has 4 likes and 4 retweets. The interface shows a 'Follow' button and a dropdown menu.

Figure 103. Tweet by Colin Young (26 December 2018).

<https://web.archive.org/web/20190228190233/https://twitter.com/OleGreyBeard/status/1078155909099077632>.

Austin Warner (@AustinWarner_)

Follow

Early connecting flights, long bus rides, dumpy stadiums. Welcome to Minor League Baseball. Except G-League select contracts are \$125,000. Guess how much us MiLB-er's make?

Adrian Wojnarowski @wojespn

I have doubts about how many top players will go this route. Some, yes. But G-League is full of early connecting flights, long bus rides, small gyms. It isn't glamorous. Big-time NCAA ball still has the trappings of exposure, packed houses, private jets. You'll get paid there too

11:40 AM - 18 Oct 2018

1 Retweet 21 Likes

1 21 21

Figure 104. Tweet by Austin Warner (18 October 2018).

https://web.archive.org/web/20190228193608/https://twitter.com/AustinWarner_/status/1052962649787502593.

 **Swilson** 
@johnny_beisbol8

Follow 

Minor league baseball is 100% worth it and you're living the dream. Kids around the world would do it for free given the chance.

Having said that, you're usually required to be at the field 2-10 six times a week not counting bus trips or extra work.

 **Bill Baer**   @Baer_Bill
appalling comments from minor league president Pat O'Conner
(via baseballamerica.com/business/baseball-leagues/minor-league-baseball-is-a-workday-for-kids)
[Show this thread](#)

8:12 PM - 19 Dec 2017

2 Retweets 26 Likes 

  2  26 

Figure 105. Tweet by Swilson (19 December 2017).

https://web.archive.org/web/20190228193642/https://twitter.com/johnny_beisbol8/status/943302974830465026.



Kaleb Earls  @K_Earls32

Follow ▾

I just received my W2 and I made a whopping \$3,712.05 during entire baseball season. I feel bad for the players who have a family and can't pursue their dream because they can't afford to take care of their families. People wonder why players have to get a job in the off-season.

9:38 PM - 22 Jan 2018

863 Retweets 2,429 Likes



106 863 2.4K

Figure 106. Tweet by Kaleb Earls (22 January 2018).
https://twitter.com/K_Earls32/status/638592793343041536.



Jordan Minch
@Jordan_Minch

Follow ▾

Replies to @cubprospects

I make more money a month driving for uber than I do during the season 😭😭

1:07 PM - 20 Dec 2018

33 Retweets 79 Likes



5 33 79

Figure 107. Tweet by Jordan Minch (20 December 2018).
https://web.archive.org/web/20190228190422/https://twitter.com/Jordan_Minch/status/1075830132215083010

The image consists of two side-by-side screenshots. On the left is a scanned copy of an ADP Earnings Statement for a baseball player. The statement shows earnings of \$50.00 per hour for 183.33 hours, totaling \$183.33. Deductions include Federal Income Tax (\$8.75), Social Security Tax (\$11.37), Medicare Tax (\$2.66), and Housing (\$75.00), leaving a Net Pay of \$85.55. A large watermark across the document reads "THIS IS NOT A CHECK". On the right is an Instagram post from the account "minorleaguegrinders". The post features a profile picture of a baseball player and the text "minorleaguegrinders Welcome to the #grind new signees. Don't spend it all at one place 😂😂😂 #makeittrain #welcometothegrind #ifyoudontknownowyouknow #realpaystubs #whensthelawsuit #minorleaguebudget #lessthanminimumwage #howisthislegal #ifyoudontlikeitplaybetter @mlb @mlb @mlbtrashtalkers @_mlb_memes_ @mlblaugh @mlb_players". It has received 553 likes and was posted on July 1, 2017.

Figure 108. Minor League Grinders Instagram post (1 July 2017).
<https://www.instagram.com/p/BWA5WUvlIRw/>.



minorleaguegrinders • Follow

minorleaguegrinders It's payday bitches!!!!

#cupofnoodleseverymeal #rollininthedough
#makeitrain #cashmoney
#itsgoingtobeagoodweek #starvationstation
#minorleaguegrinders

lukejax77 @jreyes3789 @friendpresto
jreyes3789 @lukejax77 @friendpresto
throw it on black

friendpresto Headed to the Beau
tomorrow @jreyes3789 @lukejax77

c_christensen2 @kellypat9

144 likes

APRIL 6, 2017

Add a comment...

Figure 109. Minor League Grinders Instagram post (6 April 2017).
<https://www.instagram.com/p/BSjCzPAB8te/>.

CONCLUSION

More broadly, the issue of globalized professional baseball labor raises questions about the legal frameworks, diplomatic relationships, and foreign policy structures by which players born outside the United States become eligible to participate in “the national pastime.” If Major League Baseball’s relationship with the Negro Leagues and Latin American professional leagues during the 20th century is any indication, exploitative relationships and extractive models of capital development may continue to shape how Major League Baseball relates to other professional baseball entities and organizations.

Far from an abstract conversation about organizational structures and transaction procedures, those relationships between MLB and other professional leagues and between MLB and international player labor sources directly impact the lived experience of increasing numbers of Minor League players. As outlined by Gilbert, free agency restrictions, salary protections, and draft procedures that empowered players in the 1960s and 1970s also inspired a Minor League labor system in which players exist in poorly-defined, fundamentally-precarious labor conditions. Pointing out the widespread erasure of Minor League labor across a range of cultural domains highlights how centering Minor League Baseball as an object of study provides an entry point for broader discussions of labor, power, and ideology.

The arguments and evidence presented in this dissertation take up a sustained analysis of specific aspects of Minor League Baseball. In doing so, this dissertation emphasizes the need to consider Minor League Baseball when attempting to fully understand the full dimensions of U.S. professional baseball. This dissertation also highlights the ways in which Minor League labor is often obscured or misrepresented. The analysis taken up in this dissertation underscores four central arguments. First, that the labor structures governing Minor League Baseball have

developed in ways that strategically disenfranchise Minor League players. Despite efforts to frame U.S. professional baseball as an inclusive, fraternal space, this dissertation points out how the interests of team owners and executives are most often at odds with laborers' concerns and priorities, as evidenced by protracted labor battle free agency in the 1970s and more recent lobbying efforts undertaken to secure passage for the Save America's Pastime.

Second, that the labor organizing efforts that have been largely successful in advocating for Major League players have failed to consistently, thoroughly, and effectively advocate on behalf of Minor League players, which represent 90% of the overall labor pool purportedly represented by the MLBPA. While labor activism and organizing efforts have been largely successful in securing workplace protections and other benefits like free agency for Major League players, issues related to professional baseball's global workforce and presence, as well as the precarity experienced by Minor League players, have not been topics of discussion and negotiation deemed worthy of serious pursuit and debate.

Third, that substantively considering the impact of globalization on U.S. professional baseball requires looking at Minor League teams and players, which represent roughly 90% of U.S. professional baseball teams and players. Shaped by U.S. imperialist attitudes and sport as a transnational commodity, Minor League Baseball emerges as a dynamic, global site that complicates attempts to frame U.S. professional baseball as a strictly "national" pastime. This dissertation argues that Minor League labor constitutes the clear majority of U.S. professional baseball labor and, in the second half of the twentieth century, has become a fundamentally global industry and commodity.

Fourth, that dominant cultural representations of U.S. professional baseball most often fail to accurately portray the game's cultural history and contemporary reality. Increasingly,

those messages are constructed and disseminated via digital media platforms. As U.S. professional baseball has built a significant digital marketing apparatus, those platforms are rarely used by teams and owners to grapple with more complex realities about the sport's meaning and cultural significance. By looking at alternate strategies for representation, this section of the dissertation emphasizes the ways players and fans have also used those same digital platforms to present alternate perspectives about the cultural significance of U.S. professional baseball and the lived experience of U.S. professional baseball players.

Class-action lawsuits like *Miranda v. Selig* and *Senne v. MLB* have proven largely unsuccessful in changing the material working conditions for Minor League players, and the lobbying efforts undertaken to secure passage of the Save America's Pastime Act clearly indicate the entrenched power structures that resist significant change to Minor League labor structures. However, the visibility and shifting conversation generated by the Save America's Pastime Act (both iterations) and the class-action lawsuits have brought increased attention to the working conditions of Minor League players. While historical precedent gives little reason for optimism in terms of changing the plight of Minor League laborers, the shifting conversation within the baseball community Minor League labor, the politics of free agency, and the management of baseball labor suggests some combination of those issues will animate negotiations around baseball labor in the coming years.

In the 2017-18 offseason, a significant number of veteran free agents (established Major League players over the age of thirty) remained unsigned free agents well into the spring training period. That unusual phenomenon prompted the MLBPA to hold its own spring training camp

for unsigned free agents.¹⁴⁶ According to the MLBPA, “‘upward of 30’ players” participated in the MLBPA-run camp. Similar concerns have animated the 2018-19 offseason, as several Major League free agents have gone unsigned, some choosing to accept Minor League contracts.

Additionally, the current free agency system has also raised significant concerns about the management of baseball labor. In the current system, the movement of players across Minor and Major League classifications is largely controlled by the Major League team. The current rules around free agency allow a Major League team to exclusively control a player’s labor until that player meets the minimum service time or number of years under contract to be eligible for free agency. To be eligible for free agency, a player must have accrued at least six years of service at the Major League level, and 172 days are considered a year of service. The rhetoric around Minor League Baseball as a meritocratic player development system might suggest that players move through the system based on their performance and merit. However, the way in which Major League teams have managed several recent high-profile cases indicates otherwise.

For example, by the end of the 2009 season, Rick Porcello had accrued 5 years and 170 days of service time, just 2 days shy of reaching free agency.¹⁴⁷ At the start of the 2010 season, the Detroit Tigers were able to assign Porcello to an affiliated Minor League team, to prevent him from earning the final two days of service time needed to be eligible for free agency. Similarly, in 2015, the Chicago Cubs assigned to an affiliated Minor League team for the first

¹⁴⁶ Mark Feinsand, "MLBPA Opens Camp for Unsigned Free Agents," *Major League Baseball*, 2018, <https://web.archive.org/web/20180308053941/https://www.mlb.com/news/mlb-players-association-opens-free-agent-camp/c-266475874>.

¹⁴⁷ FoxSports, "Chicago Cubs Kris Bryant and the Service-Time Game," *Fox Sports*, 2015, <https://web.archive.org/web/20180605125902/https://www.foxsports.com/mlb/just-a-bit-outside/story/chicago-cubs-kris-bryant-service-time-when-to-call-up-prospects-031115>; Jason P. Skoda, "Union Threatens Action after Cubs Send Kris Bryant to Minors," *McCall*, 2015, <https://web.archive.org/web/20190228194027/https://www.mcall.com/sports/mc-cubs-send-kris-bryant-to-minors-20150330-story.html>.

eight games of the season, to keep Bryant from becoming eligible for free agency that year.¹⁴⁸

Ronald Acuna experienced the same treatment—the Philadelphia Phillies assigned him to an affiliated Minor League team for the first three weeks of the season before having him rejoin the Major League team, just to be able to delay his free agency eligibility.¹⁴⁹

Where players are assigned at the start of the season is just mechanism teams use to manipulate free agency eligibility. However, how players move into the Major Leagues during the season has also increasingly come under fire. In the 2018, two Minor League players (Eloy Jiménez and Vladimir Guerrero Jr.) were experiencing successful seasons and were expected be promoted to their respective Major League teams toward the end of the season. However, neither player was promoted. As stated by Jiménez’s agent Nelson Montes De Oca, “I don’t see what boxes he needs to check to be called up … except for service time.”¹⁵⁰ According to Jiménez’s other agent Paul Kinzer, “It’s not about the money. It’s the extra year of control.”¹⁵¹

The MLBPA did speak publicly on Guerrero’s situation, making the following statement:

¹⁴⁸ Ibid.

¹⁴⁹ Mike Axisa, "Instituting a Free Agency Age Could Solve the MLBPA's Two Biggest Problems in the Next CBA," *CBS Sports*, 2018, <https://web.archive.org/web/20180908121159/https://www.cbssports.com/mlb/news/instituting-a-free-agency-age-could-solve-the-mlbpas-two-biggest-problems-in-the-next-cba/>; Matt Snyder, "Backlash Rightfully Growing over Service Time Manipulation by MLB Teams," *CBS Sports*, 2018, <https://web.archive.org/web/20181207134059/https://www.cbssports.com/mlb/news/backlash-rightfully-growing-over-service-time-manipulation-by-mlb-teams/>; , "MLBPA Backs Vladimir Guerrero Jr., Slams Blue Jays in Service Time Manipulation Battle," *CBS Sports*, 2018, <https://web.archive.org/web/20180908140656/https://www.cbssports.com/mlb/news/mlbpa-backs-vladimir-guerrero-jr-slams-blue-jays-in-service-time-manipulation-battle>.

¹⁵⁰ Jon Heyman, "Eloy Jimenez's Camp Unhappy He's Unlikely to Play for White Sox This Year," *Fan Cred Sports*, 2018, <https://web.archive.org/web/20190128043705/https://fancredsports.com/articles/jon-heyman-elyo-jimenezs-camp-unhappy-hes-unlike>.

¹⁵¹ .

"The union's position on service-time manipulation is clear, Vladimir Guerrero Jr. and other great young talents around baseball have earned the right to play on the field for a major-league team. The decision to not to bring him up is a business decision, not a baseball decision. It's bad for the Blue Jays, it's bad for fans, it's bad for players and it's bad for the industry."¹⁵²

While paying lip service to the issue of service time manipulation, the MLBPA has proven largely ineffective in helping impacted players successfully level labor grievances against their Major League teams. Major League owners consistently argue decisions about player labor management are made based on performance and readiness. Additionally, players still under contract with a Major League organization are ill advised to file a grievance against the individuals that control their professional trajectory. Bryant's grievance against the Cubs is still pending. Jiménez is one of the few players to publicly respond to the conversation about service time manipulation, writing a *Player's Tribune* piece titled "I'm Ready," which indirectly addressed the service time issue by talking about his desire and readiness to play in the Major Leagues.¹⁵³

With the current Collective Bargaining Agreement set to expire in 2021, the increased attention to free agency and service time manipulation will likely be central topics of discussion in negotiations for the next CBA. While the concerns raised by the MLBPA around those topics have focused on their impact on players who end up making a Major League roster and

¹⁵² Axisa; Snyder, "Backlash Rightfully Growing over Service Time Manipulation by MLB Teams"; "MLBPA Backs Vladimir Guerrero Jr., Slams Blue Jays in Service Time Manipulation Battle."

¹⁵³ Eloy Jiménez, "I'm Ready," *Player's Tribune*, 2018, <https://web.archive.org/web/20181210133419/https://www.theplayerstribune.com/en-us/articles/eloy-jimenez-white-sox-chicago-im-ready>.

achieving the protections and benefits outlined in the CBA, any potential changes to free agency structures and eligibility will have a significant and direct impact on the working conditions and lived experience of Minor League laborers.

The broader landscape of globalized professional baseball labor remains a more nebulous topic, with competing priorities and a wide range of motivating agendas for the parties involved. While the MLBPA may be poised to take on free agency and service time in the next round of CBA negotiations, the larger questions about an increasingly global baseball labor force have less clear next steps. The prospect of an international draft has been repeatedly tabled in CBA negotiations. The agreements that do exist around signing international players apply largely to players bypassing the Minor Leagues and going straight to a Major League team.¹⁵⁴

More broadly, the issue of globalized professional baseball labor raises questions about the legal frameworks, global structures, and labor practices by which players born outside the U.S. become eligible to participate in the “national pastime.” As evidenced by U.S. professional baseball’s history relationship with other organized baseball structures like the Negro Leagues, exploitative relationships and extractive models of capital development will likely continue to shape how U.S. professional baseball relates to and engages other existing baseball structures. The labor practices that have developed in U.S. professional baseball through the twentieth century have created a Minor League system in which an overwhelming majority of players exist in poorly-defined, fundamentally-precarious labor conditions. The labor activism efforts that

¹⁵⁴ Dave Sheinin and Karen DeYoung, "MLB and Cuban Baseball Federation Reach Agreement ; Trump Administration Signals It Has Issues with the Deal," *Chicago Tribune*, 2018, <https://web.archive.org/web/20190226210613/https://www.chicagotribune.com/sports/baseball/c-t-spt-mlb-cuba-defection-20181219-story.html>. Steve Adams, "MLB Ratifies New NPB Posting System, Formally Announces Shohei Ohtani Will Be Posted Today," *MLB Trade Rumors*, 2017, <https://web.archive.org/web/20181021232453/https://www.mlptraderumors.com/2017/12/mlb-ratifies-new-npb-posting-system-formally-announces-shohei-ohtani-will-be-posted-today.html>.

have given Major League players increased autonomy and agency have also continued to marginalize and disenfranchise Minor League players. This dissertation addresses the far-reaching implications of Minor League Baseball—its structures, history, teams, and players—and how those structures have been represented and interpreted across a range of cultural domains. Writing Minor League labor back into the narratives makes a compelling argument for U.S. professional baseball—and specifically Minor League Baseball—as a dynamic cultural site, in which labor, power, and ideology combine in ways that impact the lived experiences of thousands of players every day.

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Portland Baseball Club, Inc., a Corporation, Plaintiff, v. Bowie K. Kuhn, Individually and as Commissioner of Baseball, et al., Defendants (Two Cases). United States District Court for the District of Oregon.

Portland Baseball Club, Inc., Plaintiff-Appellant, v. Bowie K. Kuhn, et al., Defendants-Appellees. United States Court of Appeals for the Ninth Circuit.

Portsmouth Baseball Corp v. Frick, Commissioner of Baseball, et al. Supreme Court of the United States.

Portsmouth Baseball Corporation, a Corporation of Virginia, Plaintiff, v. Ford C. Frick, Commissioner of Baseball, et al., Defendants. United States District Court for the Southern District of New York.

Portsmouth Baseball Corporation, Plaintiff, v. Ford C. Frick, Commissioner of Baseball, et al., Defendants. United States District Court for the Southern District of New York.

Portsmouth Baseball Corporation, Plaintiff-Appellant, v. Ford C. Frick, Commissioner of Baseball; Baltimore Baseball Club, Inc., et al., Defendants-Appellees.. United States Court of Appeals for the Second Circuit.

Power Play 1 LLC, Et Ano., Plaintiffs, -Against- Norfolk Tide Baseball Club, LLC, et al., Defendants.. United States District Court for the Southern District of New York.

Professional Baseball Schools and Clubs, Inc., Plaintiff-Appellant, v. Bowie K. Kuhn, as Commissioner of Organized Baseball; National Association of Professional Baseball Leagues, and John H. Johnson, as President; The Carolina League of Professional Baseball Clubs, Inc., a North Carolina Corporation, and James B. Mills, as President, Defendants-Appellees.. United States Court of Appeals for the Eleventh Circuit.

Richard Alan Moran; Ernest Fazio, and Plaintiffs, Mike Colbern, Individually and on Behalf of All Similarly Situated Retired Major League Baseball Players, Plaintiff-Appellant, v. Allan H. Selig, Aka \Bud\ Selig, as Commissioner of Major League Baseball; New York Yankees Baseball Club, an Entity of Unknown Form; Atlanta Braves, Inc., a Delaware Corporation; Detroit Tigers, Inc., a Michigan Corporation; St. Louis Cardinal Baseball Club, an Entity of Unknown Form; Boston Red Sox Baseball Club, an Entity of Unknown Form; Florida Marlins Baseball Club, an Entity of Unknown Form; Anaheim Angels Lp, a California Limited Partnership; Arizona Diamondbacks Baseball Club, an Entity of Unknown Form; Baltimore Orioles, Inc., a Maryland Corporation; Chicago Cubs, Inc., an Illinois Corporation; Chicago White Sox Baseball Club, an Entity of Unknown Form; Cincinnati Reds Baseball Club, an Entity of Unknown Form; Cleveland Indians Baseball Company, Inc., an Ohio Corporation; Colorado Rockies Baseball Club,

an Entity of Unknown Form; Houston Astros Baseball Club, an Entity of Unknown Form; Kansas City Royals Baseball Corporation, a Missouri Corporation; Los Angeles Dodgers, Inc., a Delaware Corporation; Milwaukee Brewers Baseball Club, Inc., a Wisconsin Corporation; Minnesota Twins Baseball Club, an Entity of Unknown Form; Montreal Expos Baseball Club, an Entity of Unknown Form; New York Mets Baseball Club, an Entity of Unknown Form; The Phillies, a Pennsylvania Limited Partnership; Pittsburgh Pirates, Inc., a Pennsylvania Corporation; San Diego Padres Baseball Club, an Entity of Unknown Form; San Francisco Giants Enterprises LLC, a Delaware Limited Liability Company; Seattle Mariners Baseball Club, an Entity of Unknown Form; Tampa Bay Devil Rays Baseball Club, an Entity of Unknown Form; Texas Rangers Baseball Club, an Entity of Unknown Form; Oakland Athletics Limited Partnership, a Delaware Limited Partnership; Toronto Blue Jays Baseball Club, an Entity of Unknown Form, Defendants-Appellees. United States Court of Appeals for the Ninth Circuit.

Right Field Rooftops, LLC Et Al, Plaintiff, v. Chicago Cubs Baseball Club, LLC Et Al, Defendant. United States District Court for the Northern District of Illinois, Eastern Division.

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Ronald R. Jeffery, Plaintiff, v. Sarasota White Sox, Inc., Defendant. United States District Court for the Middle District of Florida, Tampa Division.

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Sergio Miranda, et al., Plaintiffs, v. Allan Huber Selig, et al., Defendants. United States District Court for the Northern District of California.

Sergio Miranda; Jeffrey Dominguez; Jorge Padilla; And Cirilo Cruz, Individually and on Behalf of All Those Similarly Situated, Plaintiffs-Appellants, v. Allan Huber Selig, Bud; Kansas City Royals Baseball Corp.; Miami Marlins, L.P.; San Francisco Baseball Associates, LLC; Boston Red Sox Baseball Club L.P.; Angels Baseball L.P.; Chicago White Sox Ltd.; St. Louis Cardinals, LLC; Colorado Rockies Baseball Club, Ltd.; Baseball Club of

Seattle, LLP; Cincinnati Reds, LLC; Houston Baseball Partners, LLC; Athletics Investment Group, LLC; Rogers Blue Jays Baseball Partnership; Cleveland Indians Baseball Co., L.P.; Cleveland Indians Baseball Co., Inc.; Padres L.P.; San Diego Padres Baseball Club, L.P.; Minnesota Twins, LLC; Washington Nationals Baseball Club, LLC; Detroit Tigers, Inc.; Los Angeles Dodgers Holding Co.; Sterling Mets L.P.; Atlanta National League Baseball Club, Inc.; Azpb L.P.; Baltimore Orioles, Inc.; Baltimore Orioles, L.P.; Phillies L.P.; Pittsburgh Baseball, Inc.; Pittsburgh Baseball P'Ship; New York Yankees P'Ship; Tampa Bay Rays Baseball Ltd.; Rangers Baseball Express, LLC; Rangers Baseball, LLC; Chicago Baseball Holdings, LLC; Milwaukee Brewers Baseball Club, Inc.; Milwaukee Brewers Baseball Club, L.P.; Office of Commissioner of Baseball, Dba Major League Baseball; Los Angeles Dodgers, LLC, Defendants-Appellees. United States Court of Appeals for the Ninth Circuit.

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State of Washington, etc., et al., Plaintiffs-Appellants, v The American League of Professional Baseball Clubs, et al., Defendants-Appellees. United States Court of Appeals for the Ninth Circuit.

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Steve Garvey, Petitioner-Appellant, v. Major League Baseball Players Association, Respondent-Appellee. United States Court of Appeals for the Ninth Circuit.

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APPENDIX A: TECHNICAL WHITEPAPER AND DATA MANAGEMENT PLAN

Data Sources, Forms, and Acquisition

The core dataset for this project includes both biographical and transactional information about the players who constitute U.S. professional baseball's workforce in the post-World War II era. While that core data is available publicly at Baseball Reference's website (run by Sport Reference, LLC), licensed by Hidden Game, its public-facing presence does not present the data in ways that facilitate or make possible the type of queries and research questions undertaken in this project. As shown in Figure 110, information about player birthplaces and dates does not exist publicly in tabular form, which prevents an analysis of the aggregate player biographical information, since the data about player birthplaces is not connected with the data about their playing careers and transactions. Additionally, the playing transaction information included on a specific player's page does not include enough descriptive information about the teams that player was a member of, like the classification level and team location, to support in-depth analysis of aggregate data trends (see Figures 112-117). Other site pages include roster information about a specific professional team in a specific season and do connect player birthplaces with the record of a specific team's roster (see Figures 116-117). However, the team-level data is isolated on season-specific pages, making it difficult to analyze change over time across teams and seasons. Additionally, the team-level data does not include additional relevant information like the team location and classification level, preventing or inhibiting an analysis of large-scale aggregate trends and change over time. While the data that supports this project is

publicly available, it is not publicly available or accessible in a way/form/structure that allows the type of large-scale aggregate analysis undertaken in this project.

Initially, data collection was done manually, copying and pasting online data into Excel and reformatting to enable cross-table links resembling a database structure (see Figures 118-119). Additionally, initial efforts were made by the University of Iowa's Digital Studio for Scholarship and Publishing toward developing a web crawling script that would automate the one data scraping, given the potential for error and the amount of labor and time necessary to manually collect the online data. However, a closer inspection of Sports Reference LLC's terms of use raised several questions about the legality of manually gathering the data or using an automated scraping method to compile the data. After further inspection of Sports Reference LLC's terms and conditions (see Appendix B), no further attempt was made to automate data gathering or gather the data manually until Baseball Reference, Sports Reference LLC, and Hidden Game Sports (third party data licensor and host) had been contacted to clarify the terms of use and gain permission to use the data for this project.

Given the fragmented, unstructured, and unconnected way much of that data lives online, collecting/gathering it manually would have been a time and labor-intensive process, delaying the overall progress of the project. Additionally, while scraping the data from the website would have addressed some of those time and labor concerns, doing so was a violation of the website's terms of service. And, since the facets of the data central to this research project were not uniformly structured, some degree of manual cleaning and data wrangling would be necessary to structure the data in a uniform way. The original goal of scraping data was to collect player biographical information, team transaction information, and team affiliation and location information. Again, given the labor and time necessary to gather the data manually, the Digital

Studio (and I) were interested in procuring a bespoke dataset customized to include the data points related to this project's research questions.

Original efforts to gather the data manually focused on the aspects of facets of the data needed to respond to the project's research questions, specifically player places and dates of birth, teams played for, team classifications and affiliations, and team locations. Initial efforts to gather this data manually utilized the data structure outlined in Figures 118 and 119. However, once the decision was made to move away from manual or automated data collection toward a bespoke licensed dataset, this original structure was abandoned, given the limited feasibility of significantly restructuring the licensed dataset. After reaching a licensing agreement with Hidden Game, the licensed dataset was delivered via email as a zipped folder with CSV three CSV files—Playing, Locations, and Affiliations. The data included in those three CSV files included the elements outlined in Appendix D. In the original data formation, there were multiple data redundancies, first with player biographical information being duplicated in the “Playing” table to correlate with multiple transaction records for specific players. Additionally, the “Locations” table includes location information for Major and Minor League Teams, but other relevant locations—specifically player birthplaces—are located elsewhere in the table data structure. A crucial needed piece of information—a unique identifiers for teams—is not included in the original dataset, and the affiliation level information is included in “Playing” table. See Figure 120 for a relational schema (RS) for the original data, and Appendix D for sample data structures and field descriptions.

Immediately, several choices were made to exclude certain data points deemed not statistically significant or of central relevance to the project's research questions. Specifically, the player ethnicity, death date, and death location information were removed, given the lack of

completeness and statistical significance for the data provided in this field. Ethnicity information was not provided or available for 70,486 players in the dataset, which represents 87.1% of the players in the dataset. Additionally, upon further conversations with the party who oversaw the curation and development of the dataset, ethnicity data was determined either by looking at a player's place of birth or phenotypical presentation (skin color). Given this dissertation's commitment to a cultural studies and American Studies orientation that frames identity as fluid, constructed, contingent, and inherently personal, a decision was made to remove the "Ethnicity" data field from future calculations, both due to the limited nuance in the methodology used to determine ethnicity as well as the lack of substantive data representation in this field.

Additionally, death date information was not provided or available for 78,226 distinct players in the dataset, which represents 96.6% of the players in the dataset, and death location information was not provided or available for 78,735 distinct players in the dataset, which represents 97.2% of the players in the dataset. While player lifespan and place of death would be an interesting, relevant, and related area of research for further study, the lack of substantive data in those fields within this dataset prompted the decision to not use those fields in the data analysis. Player ethnicity, death date, and death location information were removed, and the number of games played at specific positions was removed from the functional dataset, yielding the RS diagram in Figure 121.

In the original data formation, there were multiple data redundancies, first with player biographical information being duplicated in the "Playing" table to correlate with multiple transaction records for specific players. Additionally, the "Locations" table includes location information for Major and Minor League Teams, but other relevant locations—specifically player birthplaces—are located elsewhere in the table data structure. A crucial needed piece of

information—a unique identifiers for teams—is not included in the original dataset, and the affiliation level information is included in “Playing” table. Additionally, since the size and complexity of the “Playing” table was exacerbated by the duplicated player biographical information, a decision was made to separate the original “Playing” table into “Biographical” and “Transactional” tables that consolidated player biographical information and removed the duplicated biographical information from the transactional records.

While redundancies in the player biographical information had been removed, information about teams, affiliations, classifications, and team locations was not logically organized within the data-table structure. While the licensed data as originally delivered included the data points needed for the research questions undertaken in this project, the data did not exist in a structure or organized form that allowed or made possible the type of inquiry central to this project. While the primary motivation for many of these manipulations or restructurings was an attempt to wrangle the data into a structure that could be imported into a database, or at least allow for coherent cross-table connections, it is important to remember that manipulations of data or reconfiguring of data structure is predicated on or necessitates a position of authority over the data and what it represents. Determining what fields and data points are and are not significant is not a neutral or impersonal act—decisions about structuring data reflect a broader notion of knowledge and power in relation to what data (especially complex quantitative data) represents and communicates.¹⁵⁵ In these data manipulations, the goal of these manipulations

¹⁵⁵ Johanna Drucker, "Graphic Devices: Narration and Navigation," *Narrative* 16, no. 2 (2008). <https://doi.org/10.1353/nar.0.0004>; "Database Narrative in Book and Online."; "Graphical Approaches to the Digital Humanities."; "Non-Representational Approaches to Modeling Interpretation in a Graphical Environment."

was to preserve the fields that were statistically significant and central or useful for the central research questions driving the larger project.

To more fully understand the significant aspects of the data and their relationship, an entity-relationship diagram (see Figure 122) was made to help clarify what might work as a more logical table structure. See Appendix D for labels and definitions for the significant aspects of the data ~~t~~To help simplifies the data structure and Major League affiliations, I am using MLB's own abbreviations to describe the thirty MLB teams. This nomenclature constitutes a standardized or controlled vocabulary within the professional baseball and baseball research communities. However, a small number of Major League teams represented in the dataset relocated or changed names before evolving into or being replaced by the current list of professional teams. That nomenclature is outlined in Appendix F.

Having defined or articulated the key elements of the dataset to link and organize in tabular form, several significant restructuring decisions were made. In addition to separating player biographical and transactional information in separate tables (a change represented in the last relational diagram), the complexity of team attributes (location, classification, and affiliation information) suggested the utility of consolidating that information for all Major and Minor League teams in a single affiliation table. That change is reflected in the RS presented in Figure 123. While that change to the data structure helped consolidate the team attributes, the need to have three foreign keys in the affiliation table to match on the transactional table involved data redundancy that could be streamlined through a unique team identifier that replaced the three matching fields currently in the transactional table. Making that revision to the data structure yielded the RS outlined in Figure 124.

The only major remaining redundancy or illogical dimension to the data structure was the location information. In this iteration of the relational structure, location information existed in two tables—the “Biographical” table that included player birthplace locations, and the “Locations” table that included team location information. Since all locations would need to be geocoded for spatial analysis, a decision was made to create a master location table and create unique location identifiers that would connect to the “Biographical” and “Affiliation” tables.

Georeferencing the data was accomplished using GPSVisualizer and a MapQuest API.¹⁵⁶ The advantage of using the automated API tool for georeferencing was the limited amount of manual labor required to georeferenced the over 11,000 locations represented in the dataset. GPSVisualizer’s capacity to batch code large numbers of global addresses relatively quickly with minimal hands-on oversight required. However, that automation and limited oversight does increase the potential for errors in the georeferencing, which when noticed require manual correction. The ease of automated georeferencing belies a more complex and nuanced discussion of digital labor and the (often uncompensated) labor required to create or generate effective automated tools like GPSVisaulizer.¹⁵⁷ Using an automated georeferencing system also raises questions about where scholarly labor is situated or who is responsible for the labor needed to accomplish the various components of a digital project.

That shift yielded the (final) data structure represented in Figure 125. Some redundancies were kept in the data structure to facilitate faster queries and easier visualizations, specifically

¹⁵⁶ MapQuest Inc., "Mapquest Developer: A Verizon Company," *MapQuest, Inc.*, 2018, <https://web.archive.org/web/20190224014224/https://developer.mapquest.com/>; "Gps Visualizer: Do-It-Yourself Mapping," Adam Schneider, 2003-2018, 2018, <https://web.archive.org/web/20190225120855/http://www.gpsvisualizer.com/>.

¹⁵⁷ Elaine Butcher and Fieseler, "The Flow of Digital Labor," *New Media and Society* 19, no. 11 (2017); Adam Fish and Ramesh Srinivasan, "Digital Labor Is the New Killer App," *New Media and Society* 14, no. 1 (2012).

the birth_country field in the “Biographical” table and the classification field in the “Transactional” table. Additionally, given the significant number of players and birth countries represented, a decision was made to additionally code country locations by region to facilitate more meaningful macro-level analysis of location trends, specifically for player birthplaces. The United Nations’ “Standard Country or Area Codes for Statistical Use,” Series M, No. 49, was used to organize countries into regions and groups according to the UN taxonomy, which is provided in Appendix F.¹⁵⁸ With the region and group information added to the “Locations” table, the final data schema adheres to the structure outlined in Figure 1215 (RS) and Figure 126 (entity relationship diagram). Sample data tables can be found in Appendix D.

Additional Section 1 data:

While the dataset described previously is the foundation for the overall dissertation project, additional datasets have been gathered, harvested, or procured from other sources to supplement the foundational dataset. The first content section of the dissertation focuses on animating and making visible labor structures around U.S. professional baseball labor, with a focus on Minor League Baseball and the structures and forces that govern its conditions of labor. In addition to information about the numbers of players and teams, and the change over time in those numbers, this section of the dissertation also addresses representation in the labor structures and organizations that impact or shape professional baseball conditions of labor. While the history of the MLBPA has been written elsewhere and is discussed more fully in the first content section, another focus of the argument in this the composition of the Player Relations Committee that negotiates collective bargaining agreements and other labor negotiation terms

¹⁵⁸ United Nations Department of Economic and Social Affairs, "Standard Country or Area Codes for Statistics Use, 1999 (Revision 4)" (United Nations Statistics Division, 1999).

and agreements. While this body has been discussed in scholarly literature and some degree of mainstream press coverage, no in-depth analysis has focused on the composition of this committee in relation to the larger pool of U.S. professional baseball players.

Portions of the data analysis and visualization in this section look at the members of the PRC, their roles on the Committee, and for the Player Representatives, their biographical and transactional histories—a similar kind of analysis undertaken of the larger pool of players using the foundational dataset. The data for this analysis is taken from the Collective Bargaining Agreement documents, that list the members of the Player Relations Committee, along with the other bodies and organizations involved in negotiating the Agreement and bound by its terms. Represented in tabular form, the PRC includes the fields defined in Appendix D.

Section 3: social media analysis

As mentioned in the project introduction, the third content section of the project examines questions of cultural production and representation in the digital content and communicates created by and for communities and users affiliated with or connected to U.S. professional baseball. This section of the dissertation accomplishes those goals through a time-bounded social media analysis of the Tweets and other digital content produced or generated by official MLB or MiLB-branded Twitter accounts. While the earlier content sections of the dissertation look at player biographical and transactional data, the focus in this third content section is questions of ideology, meaning, commodity, and cultural production, which required moving beyond the biographical and transactional data to include or incorporate additional data sources and forms of analysis. While the analysis undertaken in the first two content sections lays bare demographic shifts and globalization within baseball labor structures, this third section builds on that foundation to look at the branded content professional teams produce about themselves to

explore to what degree the shifting dimensions of professional baseball labor are being considered in the messages teams communicate or present about themselves.

While a sustained analysis of the social media content generated by professional baseball players at the Major and Minor League levels would be of great relevance to the questions explored in this section, the challenge of gathering a comprehensive list of Twitter ids for thousands of professional baseball players presents several logistical and practical challenges. Additionally, the question of player privacy and agency raises serious questions about the ethics of using personal social media content to address questions of identity, power, and representation. While professional baseball teams are themselves public entities that do not and cannot have a reasonable expectation of privacy or confidentiality in their social media activity, the liminal space which many Minor League players occupy raises significant questions about the degree to which they are public figures or celebrities who are not guaranteed or afforded the same level of privacy given to private individuals. However, Major and Minor League Baseball's use of player-generated social media content to promote their own social media identity, content, and networks raises several significant, relevant questions about the labor of digital production and structures of labor and compensation for labor that takes place in a digital space.

The decision to uses Twitter data as a representative of the larger social media ecosystem and content generated by professional teams was largely based on the accessibility of Twitter data and the ability to store Twitter data in stable preservation formats via json and csv files. While a number of curation, search, and visualization tools exist for digital media platforms, other social media platforms offer limited access to back-end metadata or the ability to collect digital content in a stable preservation format. However, while the textual content and metadata information for Tweets is accessible, digital preservation questions persist around the ability to

collect and preserve multimedia objects contained within Tweets. Additionally, the frequent uses of emojis within Tweets raises questions about text-encoding, representation, and translatability, and collecting Tweet content does not necessarily guarantee ongoing access to internet content linked within a Tweet.

The first step in approach gathering Twitter data was determining or collecting a list of Twitter accounts associated with professional baseball teams, leagues, and organizations. The list of Twitter ids and accounts is included in Appendix H. The twarc “command line tool (and Python library) for archiving Twitter JSON” developed by Ed Summers and the Maryland Institute for Technology in the Humanities was used to execute Python scripts (excerpted in Appendix H) to gather timeline data for the previously-listed accounts.¹⁵⁹ These scripts were executed twice weekly from March through November 2018, to capture a relatively thorough snapshot of Twitter content produced by entities affiliated with professional baseball over the course of the regular baseball season. The output of those Twarc scripts was JSON files (sample output excerpted in Appendix H) including the data elements in the string, defined in Appendix E. A complete list of Twitter accounts harvested is presented in Appendix H.

Platform Choices

Section 1 platform and tool choices:

To backtrack somewhat, in addition to the data sources for content sections 1 and 2, several additional choices were made about data cleaning and management tools, as well as analysis and visualization tools and programs. Initially, the data was interacted with via Microsoft Excel, a spreadsheet program, and saved as an Excel workbook and individual CSV

¹⁵⁹ "Twarc," GitHub, 2017, 2018,
<https://web.archive.org/web/20190213155343/https://github.com/docnow/twarc>.

(comma-separated value) sheets. That process of exploring the data revealed the amount of duplication and overlap that was addressed through the data restructuring outlined in the previous section. Following the philosophy of minimal computing and minimalism in data structure and organization, consolidating, reorganizing, and streamlining the data made it possible to more effectively make connects across tables, describe various facets of the data, and undertake the analysis and visualization central to the research project. While the data was mostly clean, in the sense that it was largely structured and consistent, the need to generate unique cross-table IDs that were consistent and human-readable required a more hands-on grappling with some of the inconsistencies in the data. For example, players born in the same location may have varying levels of specificity provided for their birth place. While one player might have the city, state/province, and country provided, another player born in the same city might only have the city and country information. Additionally, while team locations were provided in the original “Locations” table, descriptive information about affiliations and classifications was provided in the “Affiliations” and “Playing” tables. A more logical structure for that data was to include descriptive information about teams all in one table, and isolate location information in a master locations table with the georeferenced latitude and longitude.

Through this process, some data was intentionally removed from the dataset (on a field level, as outlined previously), a small number of errors in spelling of city locations were also corrected and standardized. Additionally, in its original form, team names were described by either a city or team name, yielding duplicates within and across specific seasons that were addressed by generating unique team identifiers. Somewhat similarly, Major League teams that occupy the same city had duplicate team name information, and franchises that remained the same franchises across Major League team name change were not connected in the dataset. For

example, Chicago was used as the team name for both the Chicago Cubs and the Chicago White Sox, and New York was used for both the New York Yankees and New York Mets. As an example of the other data limitation, the Los Angeles Angels of Anaheim franchise were represented by a range of names in the team name and parent team fields. Cleaning the data involved converting original Major League team names to the controlled team vocabulary listed earlier.

Although the project in its final form did not utilize a back-end database for the data, the goal in this stage of the project was to standardize and organize the data to a degree that it could be effectively imported into a database. Once the data was more fully understood and the amount of data cleaning and restructuring needed to make the data usable for analysis and visualization, other options for data cleaning and wrangling were explored using Open Refine, before going back to Excel to use both automated and manual operations/functions to standardize/clean and reorganize/restructure the data. Once the data had gone through the restructuring and reformatting operations outlined in previous sections, preliminary analysis was begun using Microsoft Excel's charts and Pivot Tables functionality to analyze data within specific tables and analyze data through making connections across tables. While the original plan for the data had involved using a back-end database to drive front-end visualizations, initial attempts to migrate the data into MySQL and PostgreSQL ran into frequent and numerous join errors. Additionally, the labor of coding SQL queries to join tables and output specific datasets and the learning curve required to effectively write and execute the SQL queries made working in Excel a more feasible, viable option, although the back-end data base would have been a more stable hosting and preservation solution for the larger dataset and limited the capacity for error and data loss in the calculations that yielded the CSVs for front-end visualizations. Additionally, the decision to

use generated CSVs to drive front-end visualizations and interactives was driven by the terms of the licensing agreement, which stipulated that the dataset in full would not be made publicly available. Although stringent digital privacy and information security protocols would have likely addressed the concerns around data privacy and the licensing agreement, visualizing from created CSVs limited or restricted the possibility of someone accessing or acquiring the full back-end dataset.

Since the goal of the data analysis and visualization in this section was interactive visualizations, Microsoft Excel and the Pivot Tables functionality would be limited for generating the desired interactive visualizations. Additionally, Microsoft Excel offered limited functionality for quickly moving between types of visualizations to explore different models for visualizing various facets or aspects of the data. To move toward generating more complex interactive visualizations, R and RStudio with additional packages Plotly and ggplot. However, after working more with R and encountering problems with completing appropriate joins across tables, the decision was made to move away from R as a platform for generating CSVs and visualizations, since those efforts had been working in Excel and Pivot Tables, and the additional advanced statistical calculations provided by R were not required for the project. Had more advanced statistical analysis been necessary for the project, R would have been a suitable platform, but the relatively basic operations of counts and averages did not necessitate R's advanced statistical capabilities.

To again explore what type of visualizations might be possible or illuminating or useful with the data and imagine what type of interactivity or labeling might be possible or desirable, a combination of Tableau Public and Tableau Professional was used to explore more complex visualizations of the dataset, while also imagining what type of mathematical operations would

be desirable to conduct on the dataset. Additionally, Tableau functionality was used to explore preliminary mapping questions and explorations before making a significant investment in a mapping or visualization technology. While Tableau was useful for more rapidly moving toward potential and desired visualizations, the limitations of Tableau Public in terms of handling large, complex datasets and pushing those visualizations to the web (and hosting them on the web via the Tableau public server) made Tableau Public not a feasible long-term platform choice for visualizing or hosting the data or visualizations. Additionally, the project's commitment to using stable preservation formats and open-source or transparent code and platforms whenever possible prompted a shift away from Tableau as a platform.

That said, the data availability and interactivity provided by Tableau was a goal and the testing or experimental use of Tableau highlighted the desired functionality of visualization. From a preservation perspective, a proprietary platform like Tableau, particularly with the limited functionality of Tableau Public, also does not output stable format that would conform to best practices for digital preservation and long-term storage. Additionally, concerns about the transparency of data visualization and access to back-end data, as well as the cost of long-term use of Tableau as a hosting platform, led to a movement away from an “out of the box” tool like Tableau, toward something based on open-source systems, specifically open-source tools that would yield stable output files types that could be used for long-term digital preservation for the project.

One step toward this goal was the discussion of using an SQL database or back-end database to link content across CSV sheets and drive or push data for front-end visualizations. However, attempts to migrate the data to an SQL database encountered problems with key relationships and creating connections across various tables and fields. Since linking the data in

Microsoft Excel via Pivot Tables functionality had been successful in the past and did not produce the same kind of key relationship errors that were continually appearing in the SQL database migration project, the decision was made to keep the back-end data in CSV files, use Pivot Table functionality to output discrete CSV files that would then be used to drive or push to front-end visualizations.

Section 2: mapping + spatial analysis

As noted in the project introduction and overview, the second content section of the dissertation looks at questions of mapping, spatial analysis, and visualization to explore questions of labor, movement, and place. Given the complexity of the dataset and desired spatial analysis, a robust mapping tool was needed to adequately represent or communicate nuances in the data analysis. Several mapping tools were explored to see what platform, software, or tool might be best situated to execute the spatial analysis dimensions of the project. Initially, because the project originated in an Archives and Media Library Science class, the structure of that class governed the tools that were considered and explored. That class was initially structured around using Palladio as a mapping and visualization tool.¹⁶⁰ However, even with the dataset in a limited and preliminary state, the complexity in the data's structure and the need to form or generate additional connections across tables and fields, combined with Palladio's in-browser loading and operations, caused repeated, significant, and frequent problems and complications when attempting to use Palladio to analyze and visualize the underlying dataset. Additionally, Palladio raised several concerns about generating interactive web visualizations that could be exported and underlying data and code in stable formats for long-term preservation.

¹⁶⁰ Stanford Humanities and Design Lab, "Palladio: Visualize Complex Historical Data with Ease," *Stanford Humanities and Design Lab*, N.d., <https://web.archive.org/web/20180706034451/http://hdlab.stanford.edu/palladio/>.

Given the challenges found in using Palladio, other platforms were explored for spatial analysis and visualization, starting with Google Fusion Table's mapping and analysis functions, which quickly were found to be too limited in their strength, customizability, and flexibility to adequately address the needs and priorities of the project. At this point in the project's timeline, Carto and CartoDB offered free web-hosted versions that also included a range of robust data analysis and customizable interactive visualization tools.¹⁶¹ The pilot maps for the project were accomplished in Carto, which provided a model for what type of spatial analysis and visualization would be useful for the project. However, additional exploration of Carto as a platform/tool was halted as other means of accessing, acquiring, and procuring the data were explored. By the time the larger dataset had been procured via a licensing agreement, Carto had shifted its business model to no longer offer a free or relatively affordable site-hosted option for complex spatial data analysis and visualization.

Given the multiple dimensions of the dataset that the project was interested in exploring, analyzing, and visualizing using spatial analysis, the functionality and capacity of ArcGIS quickly became the most useful platform/program for creating an underlying database structure for the dataset, while also generating rich interactive visualizations for the digital platform. Since ArcGIS is a proprietary platform and does not provide open-source back-end code, the preservation solution for these components of the larger project will involve saving stable format, archival quality images of the map visualizations, while also storing as CSV files the back-end data used to generate the visualizations, as well as when available the scripts or queries performed on the back-end data to generate the visualizations used in the project.

¹⁶¹ "Carto," Carto, 2018,
<https://web.archive.org/web/20190227020504/https://carto.com/>.

Deposit, Preservation, Access

Given the infrastructure needed to successfully execute a large-scale digital project, accomplishing this project without significant collaborative, administrative, and logistical support would not have been possible. The acquisition of the underlying dataset was facilitated by individuals at Baseball Reference, Sports Reference LLC, and Hidden Game Sports. The University of Iowa's Digital Studio for Scholarship and Publishing facilitated the licensing agreement and purchase of the data, including a review of the licensing agreement, which is provided in Appendix C.

Ongoing consultation and advisory support for the digital and data driven components of the project were provided by members of the Studio for Digital Scholarship and Publishing staff, in addition to committee members who are DH specialists. Specifically, Nikki White provided consultation and advisory support for the data analysis, structuring, and visualization undertaken in the first content section of the dissertation. GIS specialist Rob Shepard provided advisory and consultation support for the second content section of the dissertation, which focused on mapping and spatial analysis. In addition to providing consulting and advisory support for mapping platform choices and data structures to facilitate spatial analysis and effective mapping. The Digital Humanities Summer Institute's Geographical Information Systems in the Digital Humanities course taught by Ian Gregory (Lancaster University) was taken in the summer of 2018 to facilitate skill acquisition with the ArcGIS platform. Advanced knowledge of database management, data structuring, data visualization, and digital preservation was acquired through enrollment in Public Digital Humanities Certificate courses, as well as courses that were part of the Library and Information Science degree program.

After the proposal for this dissertation had been approved by an interdisciplinary committee and the Department of American Studies graduate handbook requirements for the

dissertation had been altered to allow for an alternative dissertation project, University of Iowa Graduate College academic affairs staff were consulted to articulate what deposit and preservation procedures would look like for an alternative digital dissertation. Specifically, Sarah Larsen (Senior Associate Dean for Academic Affairs and Student Development) was consulted as the American Studies Department moved through the handbook language revision process. Assistant Dean of Academic Affairs Heidi Arbisi-Kelm and Academic Affairs Coordinator Erin Kaufman were key administrative partners in determining what thesis and deposit procedures would for the digital components of the project. Additionally, Tom Keegan, Head of the Digital Scholarship and Publishing Studio, Matthew Butler, Senior Developer of Media Production and Design at the Studio, and Paul Soderdahl, Associate University Librarian at the University of Iowa were also part of the conversation around long-term digital preservation for the project. Procedures for copyright, fair use, licensing, and access were determined in consultation with University of Iowa Counsel's Office and members of the University of Iowa Libraries' Scholarly Impact Team, Sarah Scheib and Mahrya Burnett.

The collaborative, workflow, and preservation components of the project were modeled after or shaped by documentation produced by several other large-scale digital projects or guidelines for digital work. Specifically, Amanda Visconti's documentation for her "Infinite Ulysses" digital dissertation project (University of Maryland, English) was a core model for the project. Additionally, the digital approaches used by other large-scale digital projects, including the grant documentation produced for projects funded by the National Endowment for the Humanities' Office of Digital Humanities. The larger conversation taking place in forums like HASTAC, led by individuals like Cathy Davidson, was also a useful resource for developing

documentation, procedures, and conventions for the project.¹⁶² While several scholarly organizations have generated documentation for digital projects, at the time this project was under development, the only documentation available for large-scale digital dissertation projects came from George Mason University's History and Art History Department.¹⁶³

The long-term preservation plan for the project focuses on describing, preserving, and providing access to discrete components of the dissertation. The core components of the dissertation include the following:

- Text-based narrative content (what constitutes the bulk of this PDF document)
- The licensed dataset acquired from Baseball Reference and Hidden Game Sports
- The harvested data acquired from primary source documents and Twitter
- The static images and figures generated by analyzing and visualizing the underlying data
- The interactive digital visualizations based on the underlying data
 - The data that drives those visualizations

Each of those components has a unique and distinct preservation plan, based on the terms of data access, flexibility of available platforms, and institutional resources available for ongoing digital project support.¹⁶⁴

¹⁶² Cathy Davidson, "Writing and Defending Your Digital Dissertation: Join the Conversation!," *HASTAC: Changing the Way We Teach and Learn*, HASTAC, 04/30/2014, 20014, <https://web.archive.org/web/20160526001812/https://www.hastac.org/blogs/cathy-davidson/2014/04/30/writing-and-defending-your-digital-dissertation-join-conversation>.

¹⁶³ George Mason University Department of History and Art History, "Digital Dissertation Guidelines," *George Mason University*, 2018, <https://web.archive.org/web/20170707155610/http://historyarthistory.gmu.edu/graduate/phd-history/digital-dissertation-guidelines>.

¹⁶⁴ "Esri Shapefile," Sustainability of Digital Formats: Planning for Library of Congress Collections, Library of Congress, 2017, <https://web.archive.org/web/20170824233615/https://www.loc.gov/preservation/digital/formats/f>

The licensed dataset is preserved in the University of Iowa’s “dark archive,” the version of the institutional repository that is not publicly accessible and does not interact with any public-facing systems. The licensed dataset is linked to the public-facing project via a DOI unique identifier. That identifier does not provide access to the full dataset but does provide a description and overview of the archived object. The licensed dataset in its full original form is not publicly-available, and those terms of access will not change, barring a renegotiated licensing agreement that provides for a different level of access. Sample data structures and relevant field descriptions for the licensed dataset are included in this technical whitepaper.

The additional data harvested from primary source documents (information on Collective Bargaining Agreements and members of the Player Relations Committee) does not include any licensing restrictions. That dataset is included in full in the ProQuest deposit and Iowa Research Online deposit as a supplementary data file. That dataset includes a descriptive metadata file that follows Open Data conventions. This dataset is licensed under a Creative Commons 4.0 license. This dataset is linked to the public-facing project via a DOI unique identifier, which provides a description and overview for and access to the archived object.

The data harvested from Twitter is covered by Twitter’s terms of service and API restrictions, which do not allow full Tweet datasets to be published or shared in their originally-

dd/fdd000280.shtml; "Geojson," Sustainability of Digital Formats: Planning for Library of Congress Collections, Library of Congress, 2017,
<https://web.archive.org/save/https://www.loc.gov/preservation/digital/formats/fdd/fdd000382.shtml#sustainability>; "Kml, Version 2.2," Sustainability of Digital Formats: Planning for Library of Congress Collections, Library of Congress, 2017,
<https://web.archive.org/web/20190228203331/https://www.loc.gov/preservation/digital/formats/fdd/fdd000340.shtml>; "Sustainability of Digital Formats: Planning for Library of Congress Collections," Library of Congress, 2017,
<https://web.archive.org/web/20181206133829/https://www.loc.gov/preservation/digital/formats/index.html>.

harvested form. A “dehydrated” list of unique Tweet IDs is included in full in the ProQuest deposit and Iowa Research Online deposit as a supplementary data file. That list of unique Tweet IDs is also accompanied by a list of the specific Twitter accounts scraped during the data collection period. Both the dehydrated Tweet IDs and Twitter account information are also publicly available via a GitHub repository. That dataset includes a descriptive metadata file that follows Open Data conventions.

That list of unique IDs The full Twitter dataset of the “rehydrated” Tweets lives in the University of Iowa Libraries’ “dark archive,” along with the licensed dataset. The Twitter dataset is linked to the public-facing project via a DOI unique identifier. That identifier does not provide access to the full dataset but does provide a description and overview of the archived object. The full Twitter dataset is not publicly-available, barring a change in Twitter’s terms of service and API restrictions. Such a change could also result in the list of unique Tweet IDs no longer being publicly-available.

The static data visualizations and other two-dimensional representations of the data included in this PDF document are also available as high-resolution images in the ProQuest deposit and Iowa Research Online deposit as a supplementary file. That directory of images and figures also includes a Dublin Core XML document describing the inventory of images and figures. These materials are licensed under a Creative Commons 4.0 license. They are linked to the public-facing project via a DOI unique identifier, which provides a description and overview of and access to the archived objects.

With a few exceptions, the data used to create interactive online visualizations (spatial and non-spatial) is part of the licensed dataset. The CSV, KML, GeoJSON, and ESRI Shapefiles are preserved in the University of Iowa’s “dark archive,” along with the licensed dataset and full

Twitter dataset. These materials are linked to the public-facing project via a DOI unique identifier. That identifier does not provide access to any of the underlying data files but does provide a description and overview of the archived materials. These materials also include a Dublin Core XML document describing the inventory of underlying data files and file types.

The various digital components of the project will be collected and featured on an interactive website hosted by the Digital Studio for Scholarship and Publishing for a period of five years. At the end of that five-year period, the interactive data visualization components of the project, as well as the central digital project “home” site will no longer be actively supported by the University of Iowa, the University of Iowa Libraries, and the Digital Studio for Scholarship and Publishing. The University of Iowa Libraries’ partnership with the Internet Archive web crawling service will be used to preserve the site before sunsetting begins. At the end of the sunsetting period, the “home” site will redirect to the Iowa Research Online and ProQuest deposits for the project, as well as any other digital home the author (Katherine Walden) has established for the project at the time of sunsetting. While the static text, images, and some underlying data will remain available as part of the Iowa Research Online and ProQuest deposits, the interactive data visualizations (spatial and non-spatial) will no longer be supported and will no longer be operational in their original linked form.

As part of a larger conversation taking place within digital scholarship and digital humanities, this dissertation works to make visible the technological and human structures necessary to undertake large-scale digital scholarship projects. Rather than relegating the labor of organizing, describing, and transcribing to a monograph’s superfluous acknowledgements section, this dissertation builds on a robust body of literature in library and information science to argue those aspects of any scholarly project—in this case a digital project—are themselves a

form of intellectual labor and substantive scholarship. Through framing data curation, analysis, and visualization as scholarly activities, this dissertation takes up a truly interdisciplinary DH approach by engagement with a quantitative dataset to enrich how scholars understand and perceive connections between labor, power, and ideology in U.S. professional baseball.

Appendix A Figures:

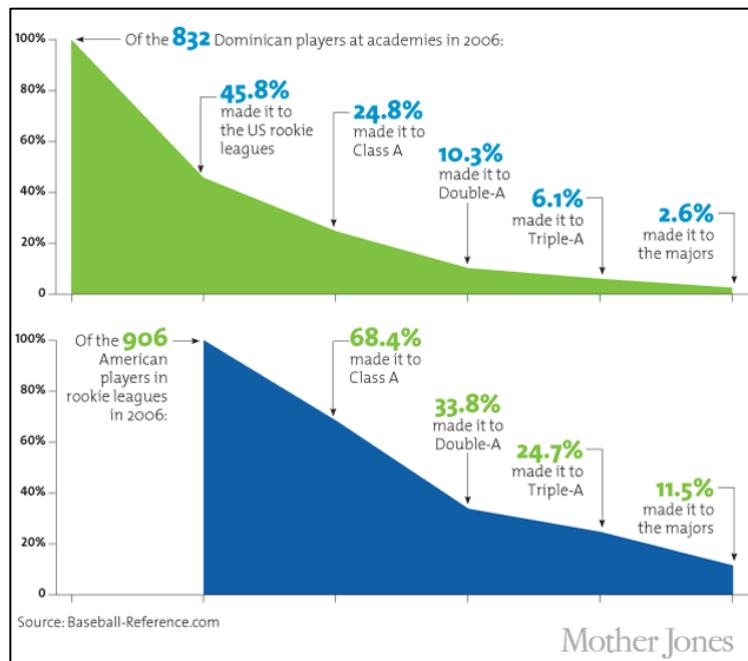


Figure 110. Ian Gordon, “Inside Major League Baseball’s Dominican Sweatshop System,” Mother Jones (March 2013), <https://web.archive.org/web/20180128121516/https://www.motherjones.com/politics/2013/03/baseball-dominican-system-yewri-guillen/>.

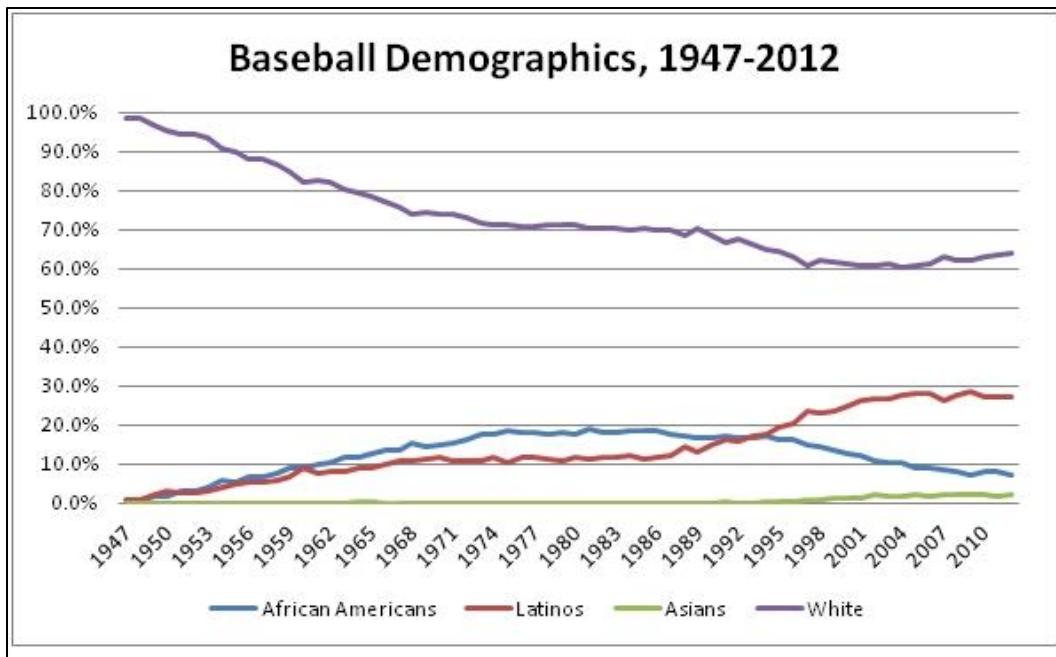


Figure 111. Armour, Mark, and Daniel R. Levitt, "Baseball Demographics, 1947-2012," Society for American Baseball Research,
<https://web.archive.org/web/20190228180259/https://sabr.org/bioproj/topic/baseball-demographics-1947-2012>.

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|--|-----------------------|-------------------------|-------------------------|--|------------------------------|
| Players | Teams | Seasons | Leaders | MLB Scores <small>15</small> | MLB Playoffs |
|  <h2>Clayton Kershaw</h2> <p>Position: Pitcher Bats: Left • Throws: Left 6-4, 228lb (193cm, 103kg) Team: Los Angeles Dodgers (majors) Born: March 19, 1988 (Age: 29-025d) in Dallas, TX Draft: Drafted by the Los Angeles Dodgers in the 1st round (7th) of the 2006 MLB June Amateur Draft from Highland Park HS (University Park, TX). High School: Highland Park HS (University Park, TX) Debut: May 25, 2008 (Age 20-067d, 16,930th in MLB history) vs. STL 6.0 IP, 5 H, 7 SO, 1 BB, 2 ER Rookie Status: Exceeded rookie limits during 2008 season 2017 Contract Status: Signed thru 2020, 7 yrs/\$215M (14-20) Service Time (01/2017): 8.105 • Free Agent: 2021 Agents: Excel Sports Management Full Name: Clayton Edward Kershaw Nicknames: The Claw, Kid K or The Minotaur Twitter: @ClaytonKersh22 </p> | | | | | |

Figure 112. Screenshot from
<https://web.archive.org/web/20190228182617/https://www.baseball-reference.com/players/k/kershcl01.shtml>.

| Teams Played For | | | | | | | | Share & more ▾ | Glossary |
|------------------|-----|---|-----------------------------------|-----|-----|-------|------------|------------------------------------|--------------------------|
| Year | Age | Tm | Lg | Lev | Aff | Stint | From | To | |
| 2006 | 18 | GCL Dodgers | Gulf Coast League | Rk | LAD | | 2006-06-30 | 2006-08-19 | |
| 2007 | 19 | Great Lakes Loons | Midwest League | A | LAD | | 2007-04-05 | 2007-08-04 | |
| 2007 | 19 | Jacksonville Suns | Southern League | AA | LAD | | 2007-08-09 | 2007-08-31 | |
| 2008 | 20 | Jacksonville Suns | Southern League | AA | LAD | | 2008-04-04 | 2008-07-17 | |
| 2008 | 20 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2008-05-25 | 2008-09-28 | |
| 2009 | 21 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2009-04-09 | 2009-10-03 | |
| 2010 | 22 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2010-04-07 | 2010-09-24 | |
| 2011 | 23 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2011-03-31 | 2011-09-25 | |
| 2012 | 24 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2012-04-05 | 2012-10-03 | |
| 2013 | 25 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2013-04-01 | 2013-09-27 | |
| 2014 | 26 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2014-03-22 | 2014-09-24 | |
| 2014 | 26 | Rancho Cucamonga Quakes | California League | A+ | LAD | | 2014-04-25 | 2014-04-25 | |
| 2014 | 26 | Chattanooga Lookouts | Southern League | AA | LAD | | 2014-04-30 | 2014-04-30 | |
| 2015 | 27 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2015-04-06 | 2015-10-04 | |
| 2016 | 28 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2016-04-04 | 2016-10-01 | |
| 2016 | 28 | Rancho Cucamonga Quakes | California League | A+ | LAD | | 2016-09-03 | 2016-09-03 | |
| 2017 | 29 | Los Angeles Dodgers | National League | MLB | LAD | 1 | 2017-04-03 | 2017-04-08 | |

Figure 113. Screenshot from
<https://web.archive.org/web/20190228182617/https://www.baseball-reference.com/players/k/kershcl01.shtml>.

The screenshot shows the Baseball Reference website's player profile for Salvador Perez. At the top, there is a navigation bar with links for Players, Teams, Seasons, Leaders, and MLB Scores. To the right of the navigation bar is a search bar with the placeholder text "Enter P...". The main content area features a portrait photo of Salvador Perez wearing a Kansas City Royals cap. Below the photo, his name "Salvador Perez" is displayed in a large, bold, black font. Underneath his name, several key statistics and details are listed: Position (Catcher and First Baseman), Bats (Right), Throws (Right), Height (6-3), Weight (240lb / 190cm / 108kg), and Team (Kansas City Royals). Further down, his birth date (May 10, 1990) and debut date (August 10, 2011) are provided, along with his rookie status (Exceeded rookie limits during 2011 season) and contract status (Not Updated, 5 yrs/\$52.5M (17-21)). Agents (Beverly Hills Sports Council), Previously (Morgan Advisors), Full Name (Salvador Johan Diaz Perez), and Twitter handle (@SalvadorPerez15) are also listed.

Figure 114. Screenshot from
<https://web.archive.org/web/20190228183051/https://www.baseball-reference.com/players/p/perezsa02.shtml>.

| Teams Played For | | Share & more ▾ | | Glossary | | | | |
|------------------|-----|---|--|----------|-----|-------|------------|------------|
| Year | Age | Tm | Lg | Lev | Aff | Stint | From | To |
| 2007 | 17 | AZL Royals | Arizona League | Rk | KCR | | 2007-06-22 | 2007-08-26 |
| 2008 | 18 | Burlington Royals | Appalachian League | Rk | KCR | | 2008-06-17 | 2008-08-18 |
| 2008 | 18 | Idaho Falls Chukars | Pioneer League | Rk | KCR | | 2008-08-22 | 2008-09-05 |
| 2009 | 19 | Burlington Bees | Midwest League | A | KCR | | 2009-04-09 | 2009-06-15 |
| 2009 | 19 | Idaho Falls Chukars | Pioneer League | Rk | KCR | | 2009-06-23 | 2009-09-11 |
| 2010 | 20 | Wilmington Blue Rocks | Carolina League | A+ | KCR | | 2010-04-08 | 2010-09-06 |
| 2010 | 20 | Surprise Rafters | Arizona Fall League | Fal | | | 2010-10-13 | 2010-11-18 |
| 2011 | 21 | Northwest Arkansas Naturals | Texas League | AA | KCR | | 2011-04-07 | 2011-07-26 |
| 2011 | 21 | Omaha Storm Chasers | Pacific Coast League | AAA | KCR | | 2011-07-27 | 2011-08-08 |
| 2011 | 21 | Kansas City Royals | American League | MLB | KCR | 1 | 2011-08-10 | 2011-09-28 |
| 2012 | 22 | Omaha Storm Chasers | Pacific Coast League | AAA | KCR | | 2012-06-07 | 2012-06-20 |
| 2012 | 22 | Kansas City Royals | American League | MLB | KCR | 1 | 2012-06-22 | 2012-10-02 |
| 2012 | 22 | Tiburones de La Guaira | Venezuelan Winter League | FgW | | | 2012-11-13 | 2012-12-27 |
| 2013 | 23 | Kansas City Royals | American League | MLB | KCR | 1 | 2013-04-01 | 2013-09-29 |
| 2013 | 23 | Tiburones de La Guaira | Venezuelan Winter League | FgW | | | 2013-11-16 | 2013-12-28 |
| 2014 | 24 | Kansas City Royals | American League | MLB | KCR | 1 | 2014-03-31 | 2014-09-28 |
| 2015 | 25 | Kansas City Royals | American League | MLB | KCR | 1 | 2015-04-06 | 2015-10-04 |
| 2016 | 26 | Kansas City Royals | American League | MLB | KCR | 1 | 2016-04-03 | 2016-10-02 |

Figure 115. Screenshot from
<https://web.archive.org/web/20190228183051/https://www.baseball-reference.com/players/p/perezsa02.shtml>.

The screenshot shows the Baseball Reference website's interface. At the top is the logo "BASEBALL REFERENCE" with a stylized baseball icon. Below the logo is a navigation bar with tabs: "Players", "Teams", "Seasons", and "League". The main title "2014 Johnson City Cardinals" is prominently displayed. Below the title are two buttons: "« 2013 Season" and "2015 Season »". To the left of the main content area, there is a sidebar with various team statistics and links.

Classification: Rookie
League: [Appalachian League](#) (West Division)
Record: 37-31
Pythagorean W-L: 33-35, 325 Runs, 340 Runs Allowed
Affiliation: [St. Louis Cardinals](#) (NL)
Manager: [Johnny Rodriguez](#)
Location: [Johnson City, TN](#)
Attendance: 40,351 (estim. 1,187/game)

Figure 116. Screenshot from
<https://web.archive.org/web/20190228183116/https://www.baseball-reference.com/bullpen/2014>.

| Team Roster | | | | | | | | | | |
|--------------------------------------|-----|---|---|--------|-----|--------------|--------------------------------------|-------|------------|------------|
| Name | Age | B | T | Ht | Wt | DoB | Birthplace | Stint | From | To |
| Jeff Barkley | 23 | R | R | 6' 5" | 210 | Jul 7, 1990 | Charlotte, NC, US | | 2014-07-11 | 2014-08-29 |
| Landon Beck | 21 | R | R | 6' 3" | 215 | Dec 9, 1992 | Hartwell, GA, US | | 2014-06-19 | 2014-08-24 |
| Ismael Brito | 21 | L | L | 5' 11" | 170 | Mar 23, 1993 | Tucupita, Delta Amacuro, VE | | 2014-06-22 | 2014-08-28 |
| Juan Caballero | 21 | R | R | 6' 4" | 175 | Aug 20, 1992 | Carolina, PR | | 2014-07-05 | 2014-08-27 |
| Kevin Carlow | 23 | L | R | 6' 2" | 190 | Aug 21, 1990 | Mystic, CT, US | | 2014-06-20 | 2014-08-29 |
| Jordan DeLorenzo | 21 | L | L | 6' 1" | 205 | Sep 8, 1992 | Winter Park, FL, US | | 2014-06-24 | 2014-07-27 |
| Blake Drake | 20 | R | R | 6' 1" | 175 | Jul 11, 1993 | Ramona, CA, US | | 2014-06-19 | 2014-08-28 |
| Adam Ehrlich | 21 | L | R | 6' 1" | 200 | Dec 13, 1992 | North Hollywood, CA, US | | 2014-08-13 | 2014-08-28 |
| Jhonatan Escudero | 20 | R | R | 6' 1" | 165 | Jul 7, 1993 | Cartagena, Bolivar, CO | | 2014-06-19 | 2014-08-28 |
| Steven Farnaro | 18 | R | R | 6' 0" | 170 | Aug 18, 1995 | Hayward, CA, US | | 2014-06-20 | 2014-08-29 |
| Bladimir Franco | 20 | R | R | 6' 0" | 170 | Oct 29, 1993 | San Cristobal, San Cristobal, DO | | 2014-06-19 | 2014-08-13 |
| Anderson Gerdel | 21 | R | R | 6' 4" | 204 | Mar 22, 1993 | Charallave, Miranda, VE | | 2014-06-21 | 2014-08-28 |
| Jose Godoy | 19 | L | R | 5' 11" | 180 | Oct 13, 1994 | Maracaibo, Zulia, VE | | 2014-06-19 | 2014-08-29 |
| Jose Gomez | 22 | R | R | 5' 11" | 185 | Jan 30, 1992 | Maracaibo, Zulia, VE | | 2014-06-21 | 2014-08-05 |
| Casey Grayson | 22 | L | L | 6' 1" | 215 | Aug 24, 1991 | Cypress, TX, US | | 2014-06-19 | 2014-08-29 |
| Sasha Kuebel | 21 | R | L | 6' 1" | 200 | Jul 28, 1992 | St. Louis, MO, US | | 2014-07-17 | 2014-08-27 |
| Devante Lacy | 20 | R | R | 5' 9" | 180 | Apr 20, 1994 | Grand Prairie, TX, US | | 2014-06-19 | 2014-08-29 |
| Cole Lankford | 21 | L | R | 6' 0" | 185 | Sep 3, 1992 | College Station, TX, US | | 2014-06-19 | 2014-08-29 |
| Dailyn Martinez | 21 | R | R | 6' 2" | 170 | Apr 19, 1993 | Santiago, Santiago, DO | | 2014-06-22 | 2014-08-25 |
| Julio Mateo | 18 | R | R | 6' 3" | 180 | Sep 29, 1995 | Los Llanos, DO | | 2014-07-28 | 2014-08-27 |
| Ian McKinney | 19 | L | L | 5' 11" | 185 | Nov 18, 1994 | Orlando, FL, US | | 2014-06-21 | 2014-07-22 |
| Rafael Medina | 22 | R | R | 6' 2" | 170 | Oct 24, 1991 | Santo Domingo, Distrito Nacional, DO | | 2014-06-19 | 2014-06-19 |
| Oscar Mercado | 19 | R | R | 6' 2" | 175 | Dec 16, 1994 | Tampa, FL, US | | 2014-06-19 | 2014-08-29 |
| Christian Muscarello | 22 | R | R | 5' 9" | 175 | Jun 16, 1992 | Tucson, AZ, US | | 2014-07-29 | 2014-08-29 |
| Charlie Nell | 24 | S | R | 6' 5" | 195 | Feb 1, 1990 | Dallas, TX, US | | 2014-06-19 | 2014-08-29 |
| Matt Pearce | 20 | R | R | 6' 3" | 205 | Feb 24, 1994 | Bonita Springs, FL, US | | 2014-06-23 | 2014-08-26 |
| Juan Perez | 18 | R | R | 6' 2" | 195 | Jul 22, 1995 | San Felipe, Yaracuy, VE | | 2014-06-19 | 2014-08-28 |
| Anthony Ray | 19 | L | R | 6' 1" | 165 | Mar 3, 1995 | Chicago, IL, US | | 2014-06-19 | 2014-08-23 |

Figure 117. Screenshot from
<https://web.archive.org/web/20190228183116/https://www.baseball-reference.com/bullpen/2014>.

| Player.ID | First Name | Last Name | DoB | PoB | City | State | Country |
|-------------------|------------|--------------|------------|------------------|------------|-------|---------|
| Jared.Mortensen | Jared | Mortensen | 1988-06-01 | Abbotsford.CA | Abbotsford | | CA |
| Owen.Schraufnagel | Owen | Schraufnagel | 04/12/05 | Abbotsford.WI.US | Abbotsford | WI | US |
| Terry.Francona | Terry | Francona | 04/10/79 | Aberdeen.SD.US | Aberdeen | SD | US |
| Christian.Cox | Christian | Cox | 1992-04-22 | Aberdeen.SD.US | Aberdeen | SD | US |

| Location ID | City | State/Province | Country | Geocoded Location |
|---------------|--------|----------------|---------|-------------------|
| Eureka.IL.USA | Eureka | IL | US | 40.7214, 89.2729 |

| Team | Season | Player.ID | Age | Start Date | End Date |
|----------------------|--------|------------------|-----|------------|----------|
| Aberdeen IronBirds | 2016 | Collin.Woody | 21 | 06/24/16 | 09/05/16 |
| Aberdeen IronBirds | 2011 | Mike.Wright | 21 | 07/06/11 | 08/08/11 |
| Aberdeen IronBirds | 2013 | Austin.Wynns | 22 | 06/19/13 | 09/02/13 |
| Aberdeen IronBirds | 2013 | Jimmy.Yacobonis | 21 | 06/17/13 | 09/02/13 |
| Aberdeen IronBirds | 2013 | Mike.Yastrzemski | 22 | 06/25/13 | 09/04/13 |
| Aberdeen IronBirds | 2016 | JeongHyeon.Yoon | 23 | 06/21/16 | 07/24/16 |
| Albuquerque Isotopes | 2015 | Cristhian.Adames | 23 | 04/09/15 | 08/29/15 |

Figure 118. Table created by author (Fall 2016).

| Team ID | Location ID | City | State | Country | Geocoded |
|----------------------|--------------------|-------------|----------------|--------------------------|------------------------|
| Altoona Curve | Altoona.PA.USA | Altoona | Pennsylvania | United States of America | 40.518681, -78.394736 |
| A.DelNorte | Monclova.MX | Monclova | | Mexico | 26.905722, -101.424266 |
| Auburn Doubledays | Auburn.NY.USA | Auburn | New York | United States of America | 42.93202, -76.567203 |
| Augusta Greenjackets | Augusta.GA.USA | Augusta | Georgia | United States of America | 33.470971, -81.974843 |
| Aberdeen IronBirds | Aberdeen.MD.USA | Aberdeen | Maryland | United States of America | 39.509556, -76.16412 |
| Albuquerque Isotopes | Albuquerque.NM.USA | Albuquerque | New Mexico | United States of America | 34.570817, -105.993007 |
| Akron RubberDucks | Akron.OH.USA | Akron | Ohio | United States of America | 41.083064, -81.518485 |
| Asheville Tourists | Asheville.NC.USA | Asheville | North Carolina | United States of America | 35.60095, -82.554016 |
| Arkansas Travelers | LittleRock.AR.USA | Little Rock | Arkansas | United States of America | 34.746481, -92.289595 |
| ARI | Phoenix.AZ | Phoenix | Arizona | United States of America | 33.446768, -112.075672 |
| ATL | Atlanta.GA | Atlanta | Georgia | United States of America | 33.749099, -84.390185 |
| AZL Angels | Tempe.AZ.USA | Tempe | Arizona | United States of America | 33.414631, -111.909376 |
| AZL Athletics | Tempe.AZ.USA | Tempe | Arizona | United States of America | 33.414631, -111.909376 |

| Team ID | MLB | Level | Level ID |
|----------------------|-----|-------|-----------|
| Aberdeen IronBirds | BAL | A- | NYPenn.lg |
| Akron RubberDucks | CLE | AA | East/lg |
| Albuquerque Isotopes | COL | AAA | PCL |
| Altoona Curve | PIT | AA | East/lg |
| Arkansas Travelers | SEA | AA | Texas/lg |
| Asheville Tourists | COL | A | SAL |

Figure 119. Table created by author (Fall 2016).

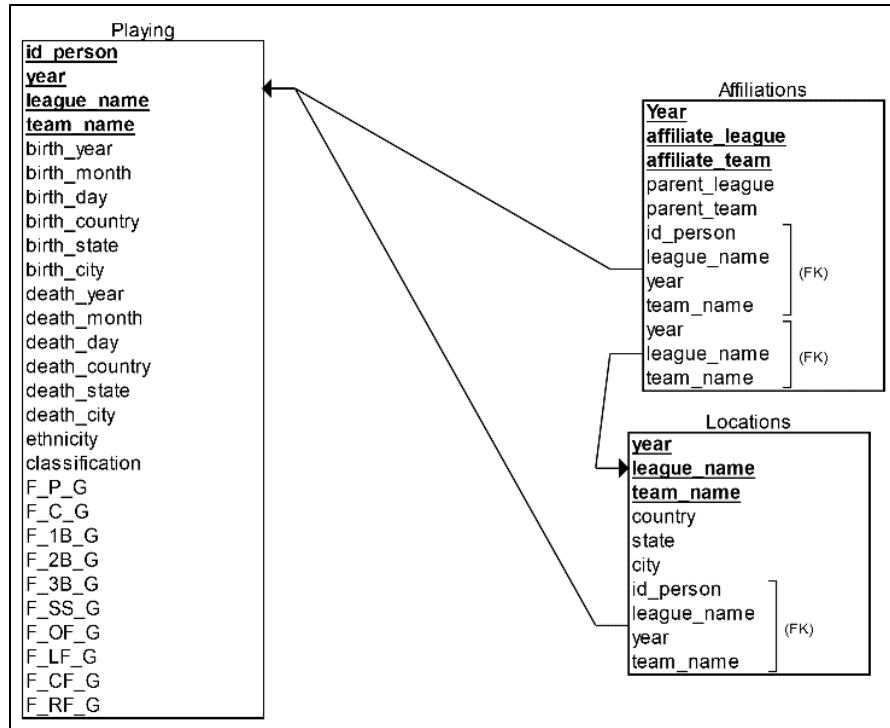


Figure 120. Relational schema for original dataset (created by author).

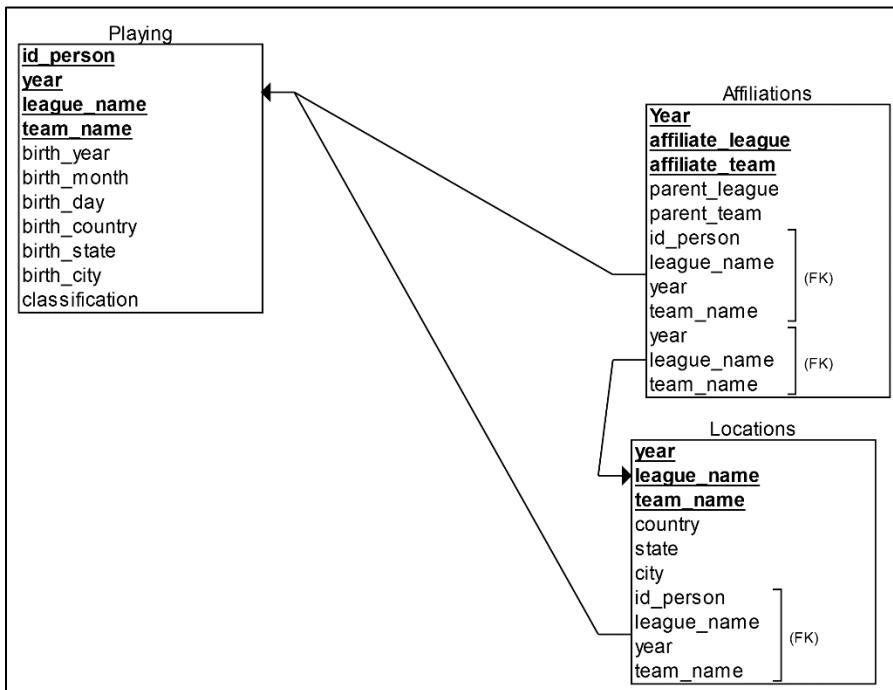


Figure 121. Relational schema after initial revisions (created by author).

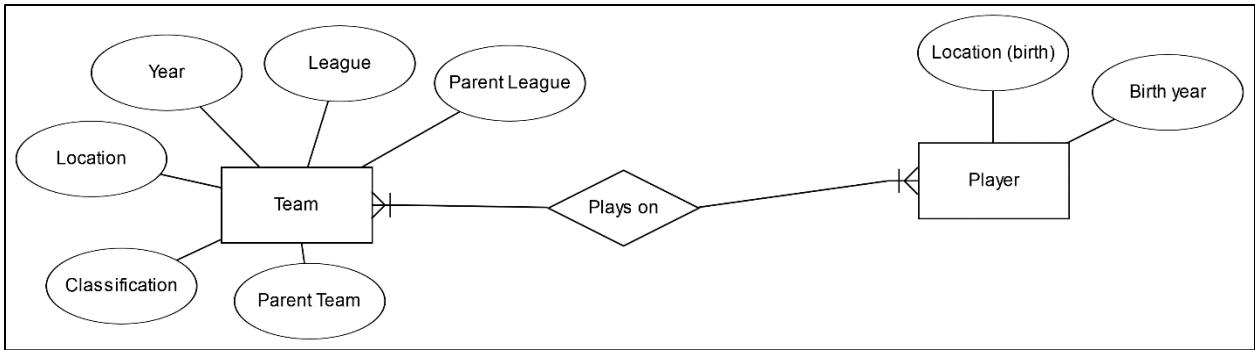


Figure 122. Entity relationship diagram for key aspects of dataset.

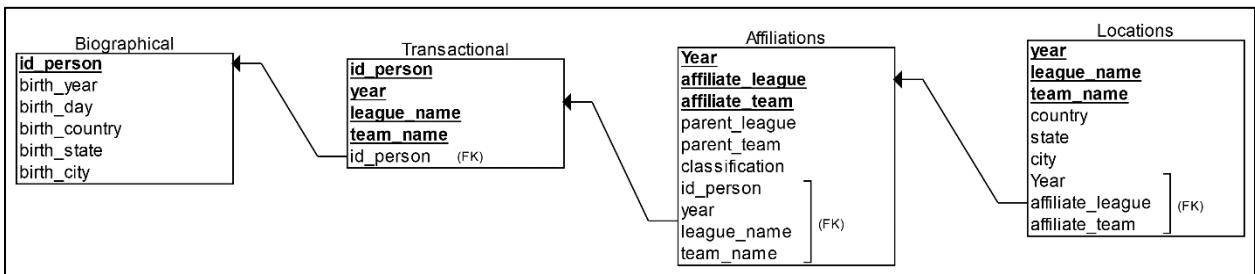


Figure 123. Relational schema after second round of revisions (created by author).

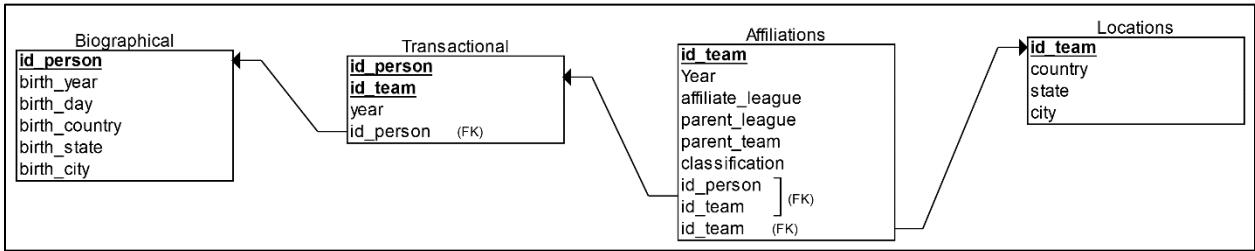


Figure 124. Relational schema after third round of revisions (created by author).

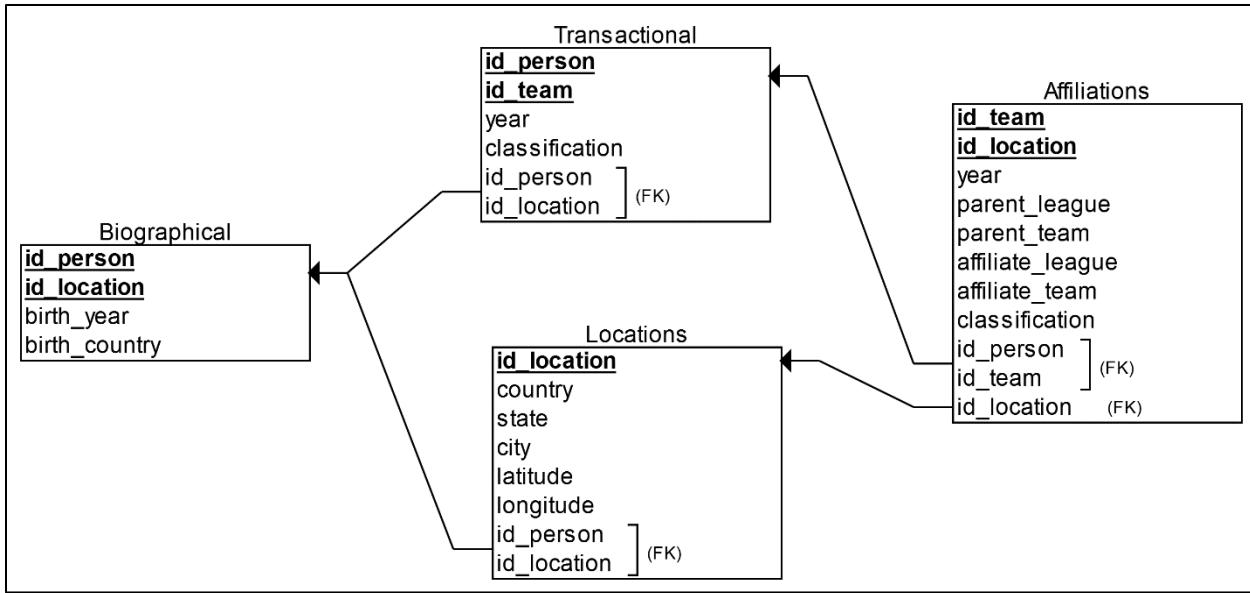


Figure 125. Relational schema after last round of revisions (created by author).

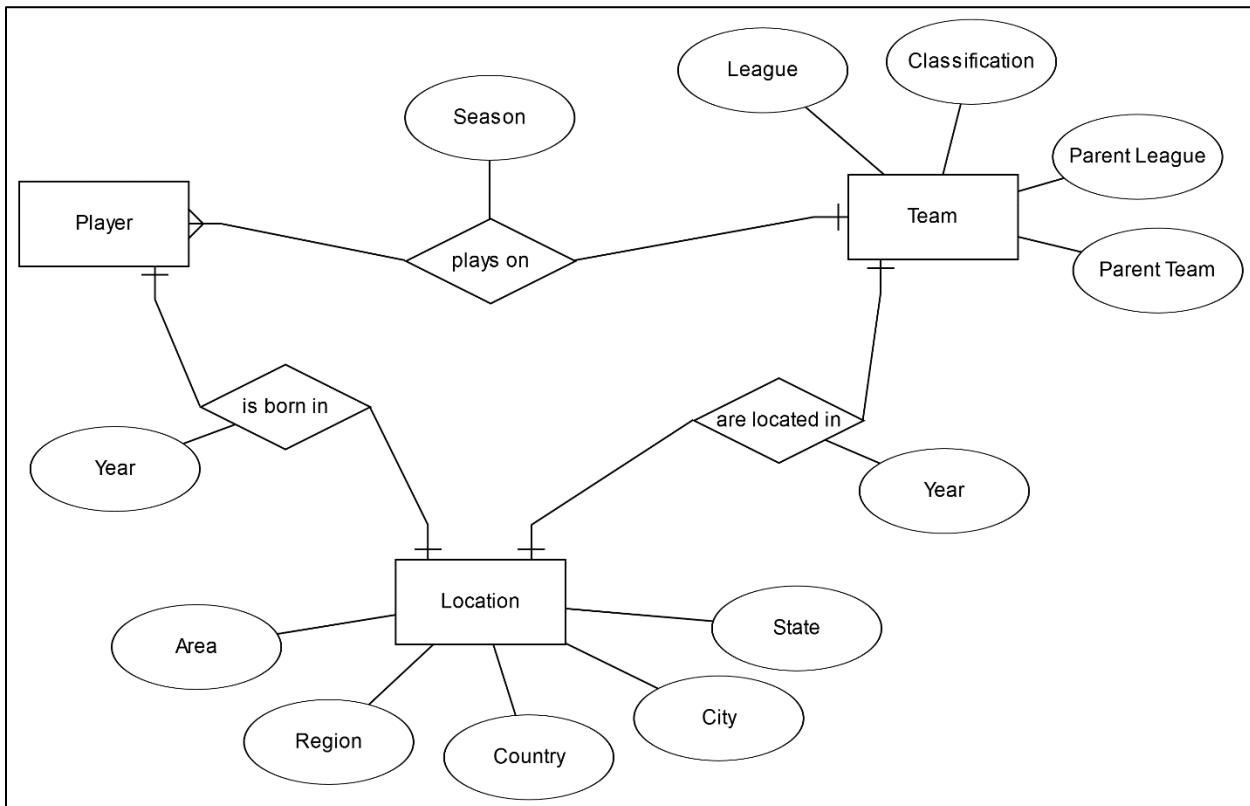


Figure 126. Entity relationship diagram for final dataset (created by author).

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LICENSED DATA. Statistics and information as enumerated and described below for players in all affiliated minor leagues based in the United States (a/k/a “MiLB”) from 1960–2016, as described below:

Player rosters by minor-league club, including geographical location of club, affiliation of club, and MiLB level of club;

Players will be listed with anonymized ID codes without names, but including date of birth, place of birth, date of death, and place of death as known for each player;

Games by position for each player for each team (if available) or for each league (if not available by team); and

Race/ethnicity as available for listed players who have played in Major League Baseball through the 2016 season.

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HEADINGS AND CAPTIONS. The headings and captions in this agreement have been inserted for convenience only, and will not be used in construing the meaning of this Agreement.

ASSIGNMENT. This Agreement and all the provisions hereof shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns, but neither this Agreement nor any of the rights, interests or obligations hereunder shall be assigned by Licensee hereto without the prior written consent of Lessor.

WAIVER OF BREACH. No waiver or breach of any provision of this Agreement shall be deemed as a continuing waiver or as consent to any subsequent breach hereof. The waiver or breach of any provision of this Agreement does not affect the applicability of any other provisions. The failure of any party to enforce any provisions of this Agreement shall not be deemed a waiver of the provisions or of the right of such party to enforce that or any other provision.

SEVERABILITY. Unless otherwise provided herein, if any provision of this Agreement shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

APPLICABLE LAWS. This agreement is governed by the laws of the State of Michigan and the United States. Any claim arising out of this agreement will be brought in Wayne County, Michigan.

[Name and Title of Signatory for Licensee]
[Short name of Licensee]

[Date]

Gary Gillette, President
Hidden Game Sports

[Date]

APPENDIX D: DATA DICTIONARIES

Data as originally received:

Playing Table

Table 4. Playing table data definitions (original dataset).

| Field Name | Explanation |
|----------------------|--|
| id_person | A unique identifier referring to a specific baseball player. 80,938 unique players are represented in the dataset. |
| birth_year | The year in which a specific professional baseball player was born, or known to have been born. Players born in the years 1906 through 1999 are represented in the dataset. Birth years are not provided or available for 779 players in the dataset. |
| birth_month | The month in which a specific professional baseball player was born, or known to have been born |
| birth_day | The day on which a specific professional baseball player was born, or known to have been born |
| birth_country | The country in which a specific professional baseball player was born, or known to have been born. Country of origin refers to physical birthplace location and does not address citizenship status, ethnicity, or other forms of cultural identification. No birth country is provided or available for 28,227 distinct/specific players. |
| birth_state | The state or province in which a specific professional baseball player was born, or known to have been born |
| birth_city | The city in which a specific professional baseball player was born, or known to have been born |
| death_year | The year in which a specific professional baseball player died, or is known to have died. Death year information was not provided or available for 78,226 distinct players in the dataset, which represents 96.6% of the players in the dataset. |
| death_month | The month in which a specific professional baseball player died, or is known to have died |
| death_day | The day on which a specific professional baseball player died, or is known to have died |
| death_country | The country in which a specific professional baseball player died, or is known to have died. Death country information was not provided or available for 78,735 distinct players in the dataset, which represents 97.2% of the players in the dataset. |

| | |
|---|---|
| death_state | The state or province in which a specific professional baseball player died, or is known to have died |
| death_city | The city in which a specific professional baseball player died, or is known to have died |
| ethnicity | A category not clearly defined in the data delivery, but refers to ethnicity as assigned or determined by a specific professional baseball player's phenotypical appearance or presentation. Categories include L (Latin American), B (Black), W (White), A (Asian), N (Native American), P (Polynesian/Pacific Islander), S [sic 'B'] (Black), S (A/T) [sic 'A'] (Asian), T (Arab, South Asian Indian), NI [sic 'N'] (Native American). Ethnicity information was not provided or available for 70,486 players in the dataset, which represents 87.1% of the players in the dataset. |
| year | A specific professional baseball season (year) in which a specific player played for a professional team or professional teams. The dataset represents players who professional baseball players who played from the years 1960 through 2016. |
| classification | The hierarchical level of a specific professional team in a specific season. Classifications represented in the dataset include the following categories: A, A-, A+, AA, AAA, B, C, D, D-, Frk (Foreign Rookie), MLB (Major League Baseball), Rk (Rookie). All classifications except Major League Baseball are Minor League classifications. |
| league_name | The league organization to which a specific team belonged in a specific year/season. The National League and American League are comprised of Major League teams, and all other Leagues in the dataset consist of Minor League teams. |
| team_name | The name of a specific professional team in a specific year/season. The number of distinct teams is represented/accounted for in the 'Affiliations' table. |
| F_P_G, F_C_G, F_1B_G, F_2B_G, F_3B_G, F_SS_G, F_OF_G, F_LF_G, F_CF_G, F_RF_G | Number of games a specific professional baseball player appeared in for a specific team in a specific season. The position categories include P (pitcher), C (catcher), 1B (first base), 2B (second base), 3B (third base), SS (short stop), LF (left field), RF (right field), OF (outfield), CF (center field). |

Table 5. Sample data structure for playing table as originally received (part i).

| id_per son | birt h_y ear | birt h_m onth | birt h_d ay | birth _cou ntry | birt h_st ate | birt h_c ity | deat h_y ear | deat h_m onth | dea th_ day | death _cou ntry | deat h_st ate | dea th_ city | eth nic ity |
|-------------------|---------------------|----------------------|--------------------|------------------------|----------------------|----------------------|---------------------|----------------------|--------------------|------------------------|----------------------|---------------------|--------------------|
| 1 | 1985 | 1 | 31 | DO | San Pedro de Macoris | San Pedro de Macoris | | | | | | | |
| 1 | 1985 | 1 | 31 | DO | San Pedro de Macoris | San Pedro de Macoris | | | | | | | |
| 1 | 1985 | 1 | 31 | DO | San Pedro de Macoris | San Pedro de Macoris | | | | | | | |
| 5 | 1955 | 10 | 3 | US | HI | Honolulu | | | | | | | |
| 5 | 1955 | 10 | 3 | US | HI | Honolulu | | | | | | | |
| 5 | 1955 | 10 | 3 | US | HI | Honolulu | | | | | | | |
| 16 | 1983 | 3 | 17 | US | FL | Sebring | | | | | | | |
| 16 | 1983 | 3 | 17 | US | FL | Sebring | | | | | | | |

Table 6. Sample data structure for playing table as originally defined (part ii).

| ye ar | classif icatio n | league _nam e | team _nam e | F_P_G | F_C_G | F_1B_G | F_2B_G | F_3B_G | F_SS_G | F_OF_G | F_F_G | F_C_F_G | F_R_F_G |
|--------------|-------------------------|----------------------|--------------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
|--------------|-------------------------|----------------------|--------------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|

| | | | | | | | | | | | | | |
|------------------|----|-----------------------|-----------------|----|---|---|---|---|---|---|---|---|---|
| 2 0 0 6 | Rk | Appalachian | Bluefield | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 0 0 7 | Rk | Appalachian | Bluefield | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 0 0 8 | Rk | Appalachian | Bluefield | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 9 7 3 | A- | New York-Pennsylvania | James town | 10 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 1 9 7 4 | A | Carolina | Kinston | 4 | | | | | | | | | |
| 1 9 7 4 | A | Florida State | West Palm Beach | 5 | | | | | | | | | |
| 2 0 0 5 | A- | New York-Pennsylvania | New Jersey | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 0 0 5 | A | South Atlantic | West Virginia | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Affiliations Table:

Table 7. Data definitions for Affiliations table as originally received.

| Field Name | Explanation |
|------------|--|
| year | A specific year or season in which professional baseball was played. |

| | |
|-------------------------|---|
| parent_league | The Major League (American or National) with which a Minor League team is affiliated in a particular season |
| parent_team | The Major League team with which a Minor League team is affiliated in a specific season/year |
| affiliate_league | The league organization to which a specific team belonged in a specific year or season |
| affiliate_team | The name of a specific professional team in a specific year or season |

Table 8. Sample data structure for Affiliations table as originally received.

| year | parent_league | parent_team | affiliate_league | affiliate_team |
|-------------|----------------------|--------------------|-------------------------|-----------------------|
| 1960 | National | St. Louis | Alabama-Florida | Dothan |
| 1960 | American | Washington | Alabama-Florida | Fort Walton Beach |
| 1960 | American | Detroit | Alabama-Florida | Montgomery |
| 1960 | National | Los Angeles | Alabama-Florida | Panama City |
| 1960 | American | Chicago | Alabama-Florida | Pensacola |
| 1960 | American | Cleveland | Alabama-Florida | Selma |
| 1960 | American | Washington | American Association | Charleston |

Locations table:

Table 9. Data definitions for locations table as received in original dataset.

| Field Name | Explanation |
|--------------------|--|
| year | A specific year or season in which professional baseball was played |
| league_name | The league organization to which a specific team belonged in a specific year or season |
| team_name | The name of a specific professional team in a specific year or season |
| country | The country in which a specific team was located for a specific year/season |
| state | The state or province in which a specific team was located for a specific year/season |
| city | The city in which a specific team was located for a specific year/season |

Table 10. Sample data structure for Locations table as originally received.

| year | league_name | team_name | country | state | city |
|-------------|--------------------|-------------------|----------------|--------------|-------------------|
| 1960 | Alabama-Florida | Dothan | US | AL | Dothan |
| 1960 | Alabama-Florida | Fort Walton Beach | US | FL | Fort Walton Beach |
| 1960 | Alabama-Florida | Montgomery | US | AL | Montgomery |
| 1960 | Alabama-Florida | Panama City | US | FL | Panama City |
| 1960 | Alabama-Florida | Pensacola | US | FL | Pensacola |
| 1960 | Alabama-Florida | Selma | US | AL | Selma |
| 1960 | American | Baltimore | US | MD | Baltimore |
| 1960 | American | Boston | US | MA | Boston |
| 1960 | American | Chicago | US | IL | Chicago |

Table 11. Significant aspects of the data defined.

| Field | Explanation |
|--------------|--|
| Players | Unique player identifiers need to be linked with their place of birth, date of birth (year), and the various MLB and MiLB teams the individual has played for. A restriction of the licensing agreement by which the dataset was procured replaces player names with unique identifying numbers. For this project, the most significant aspects of the data are the place of birth and MLB/MiLB transactional records. Age could be a useful element to track and analyze in the future but is not a particularly significant aspect or relationship for this project. |

| | |
|--|--|
| Team, League, and Classification | <p>Location is a significant factor for both Major and Minor League teams, which are located within and outside the United States. While standard abbreviations are used for MLB teams, Minor League team names are used in their full form, since a standard list of abbreviations does not exist for MiLB teams. The relationship between team and location is significant, as are Minor League team's relationship to their (1) MLB parent organization, (2) other MiLB affiliates in the same MLB system, and (3) other MiLB teams in the same level/league. Additionally, teams within and across seasons are populated by specific players, so team information needs to also be linked with the identifying information for players who played on a specific team at a particular point in time. One of the challenges in representing or structuring this relationship is the fact that the 'team' entity is not static and in some cases changes location, name, and classification over time while still remaining to some degree the same 'team' entity. For example, the California Angels, Los Angeles Angels, and Anaheim Angels are distinct team names, but all refer to the same Major League organization. Similarly, the Memphis Chicks were renamed the Memphis Blues, and then the Memphis Redbirds while still maintaining their team identity. Given the complexity of making those team references across time given the attribute and data naming changes, analysis and visualization for this project will focus on classification levels as key vectors, rather than attempting to track 'team' as a distinct entity across time. To help simplify the data structure and Major League affiliations, I am using MLB's own abbreviations to describe the thirty MLB teams. This nomenclature constitutes a standardized or controlled vocabulary within the professional baseball and baseball research communities.</p> |
| Location | <p>As mentioned previously, significant locations data elements for this project include players' place of birth and the locations for MLB and MiLB teams. In addition to the country, state, and city attributes, geocoding information is also needed to effectively map and visualize the spatial dimensions of the dataset. Location information refers to both player biographical information and team location information, a connection not logically/reasonably accounted for in the original data form.</p> |

Final Data Structure:

Table 12. Final data structure for player_biographical table.

| id_person | birth_year | birth_country | LocationID |
|------------------|-------------------|----------------------|----------------------|
| 1 | 1985 | DO | SanPedrodeMacoris_DO |
| 5 | 1955 | US | Honolulu_HI_US |

| | | | |
|----|------|----|-------------------------------|
| 16 | 1983 | US | Sebring_FL_US |
| 17 | 1966 | | |
| 18 | 1967 | | |
| 22 | 1983 | US | Phoenix_AZ_US |
| 25 | 1974 | PA | Cabecera_Chiriqui_Chiriqui_PA |

Table 13. Final data structure for player_transactional table.

| id_person | year | classification | id_team |
|------------------|-------------|-----------------------|---------------------------------|
| 5 | 1974 | A | 1974_Carolina_Kinston |
| 5 | 1974 | A | 1974_FloridaState_WestPalmBeach |
| 16 | 2005 | A | 2005_SouthAtlantic_WestVirginia |
| 17 | 1989 | A | 1989_SouthAtlantic_Augusta |
| 17 | 1992 | A | 1992_Midwest_CedarRapids |
| 18 | 1991 | A | 1991_SouthAtlantic_Spartanburg |

Table 14. Final data structure for affiliations table.

| id_team | year | parent_league | parent_team | affiliate_league | affiliate_team | classification | id_location |
|------------------------|-------------|----------------------|--------------------|-------------------------|-----------------------|-----------------------|--------------------|
| 1963_Northern_Aberdeen | 1963 | American | BAL | Northern | Aberdeen | A | Aberdeen_MD_US |
| 1964_Northern_Aberdeen | 1964 | American | BAL | Northern | Aberdeen | A | Aberdeen_MD_US |
| 1965_Northern_Aberdeen | 1965 | American | BAL | Northern | Aberdeen | A | Aberdeen_MD_US |
| 1966_Northern_Aberdeen | 1966 | American | BAL | Northern | Aberdeen | A- | Aberdeen_MD_US |
| 1967_Northern_Aberdeen | 1967 | American | BAL | Northern | Aberdeen | A- | Aberdeen_MD_US |
| 1968_Northern_Aberdeen | 1968 | American | BAL | Northern | Aberdeen | A- | Aberdeen_MD_US |

Table 15. Final data structure for locations table.

| id_location | City | State | Country | Region | Group | latitude | longitude |
|--------------------|-------------|--------------|----------------|---------------|--------------|-----------------|------------------|
| AF | | | AF | Southern Asia | Asia | 33.000087 | 64.999847 |

| | | | | | | | |
|-----------------------------|---------------|--------------|----|---------------|---------------------------------|------------|------------|
| Kabul_AF | Kabul | | AF | Southern Asia | | 34.519706 | 69.16243 |
| LaPlata_BuenosAires_AR | La Plata | Buenos Aires | AR | South America | Latin America and the Caribbean | -34.92068 | -57.953764 |
| BuenosAires_BuenosAires_AR | Buenos Aires | Buenos Aires | AR | South America | Latin America and the Caribbean | -34.612869 | -58.445979 |
| VicenteLopez_BuenosAires_AR | Vicente Lopez | Buenos Aires | AR | South America | Latin America and the Caribbean | -34.524448 | -58.503628 |
| Rosario_SantaFe_AR | Rosario | Santa Fe | AR | South America | Latin America and the Caribbean | -32.9595 | -60.661541 |
| VillaDolores_Cordoba_AR | Villa Dolores | Cordoba | AR | South America | Latin America and the Caribbean | -31.944478 | -65.190031 |

Table 16. Final data structure for Collective Bargaining Agreement and Player Relations Committee data.

| Year | Category | Name | Ethnicity | PoB_State | PoB_Country | DoB | Debut | MiLB | MLB |
|------|------------|-------------|-----------|-----------|-------------|------|-------|------|-----|
| 1970 | Player rep | Willie Mays | B | Alabama | US | 1931 | 1951 | 2 | 22 |
| 1973 | Player rep | Don Sutton | W | Alabama | US | 1945 | 1966 | 3 | 23 |
| 1990 | Player rep | James Key | W | Alabama | US | 1961 | 1984 | 6 | 15 |

APPENDIX E: TWITTER ACCOUNT LIST AND TWEET IDS

Table 17. List of Twitter accounts harvested.

| Team Name | Level | Affiliation | Twitter | Website |
|----------------------|--------------|----------------------|-----------------|---|
| AAA Baseball | AAA | | TripleABaseball | http://www.tripleabaseball.com/Welcome.jsp |
| Aberdeen | A- | Baltimore Orioles | IronBirds | http://www.milb.com/index.jsp?sid=t488 |
| Acereros de Monclova | AAA | Mexican League | AcererosOficial | http://www.milb.com/index.jsp?sid=t560 |
| Akron | AA | Cleveland Indians | AkronRubberDuck | http://www.milb.com/index.jsp?sid=t402 |
| Albuquerque | AAA | Colorado Rockies | ABQTopes | http://www.milb.com/index.jsp?sid=t342 |
| Altoona | AA | Pittsburgh Pirates | AltoonaCurve | http://www.milb.com/index.jsp?sid=t452 |
| Angels | Rk | Los Angeles Angels | | http://www.milb.com/index.jsp?sid=t404 |
| Angels | Frk | Los Angeles Angels | | http://www.milb.com/index.jsp?sid=t600 |
| Arizona Diamondbacks | MLB | | Dbacks | http://m.dbacks.mlb.com/ |
| Arizona Fall League | Rk | | MLBazfalleague | http://mlb.mlb.com/mlb/events/afl/index.jsp |
| Arkansas | AA | Seattle Mariners | ARTravs | http://www.milb.com/index.jsp?sid=t574 |
| Asheville | A | Colorado Rockies | GoTourists | http://www.milb.com/index.jsp?sid=t573 |
| Astros | Rk | Houston Astros | | http://www.milb.com/index.jsp?sid=t1998 |
| Astros Blue | Frk | Houston Astros | | http://www.milb.com/index.jsp?sid=t601 |
| Astros Orange | Frk | Houston Astros | | http://www.milb.com/index.jsp?sid=t5005 |
| Athletics | Rk | Oakland Athletics | | http://www.milb.com/index.jsp?sid=t405 |
| Athletics | Frk | Oakland Athletics | | http://www.milb.com/index.jsp?sid=t602 |
| Atlanta Braves | MLB | | Braves | http://m.braves.mlb.com/ |
| Auburn | A- | Washington Nationals | Doubledays | http://www.milb.com/index.jsp?sid=t458 |
| Augusta | A | San Francisco Giants | GreenJackets | http://www.milb.com/index.jsp?sid=t478 |
| Baltimore Orioles | MLB | | Orioles | http://m.orioles.mlb.com/ |
| Batavia | A- | Miami Marlins | BataviaMuckdogs | http://www.milb.com/index.jsp?sid=t511 |
| Beloit | A | Oakland Athletics | BeloitSnappers | http://www.milb.com/index.jsp?sid=t554 |
| Benjamin Hills Blog | MiLB | | BensBiz | https://bensbiz.mlbblogs.com/ |
| Billings | Rk | Cincinnati Reds | Mustangs | http://www.milb.com/index.jsp?sid=t513 |
| Biloxi | AA | Milwaukee Brewers | BiloxiShuckers | http://www.milb.com/index.jsp?sid=t5015 |
| Binghamton | AA | New York Mets | RumblePoniesBB | http://www.milb.com/index.jsp?sid=t505 |
| Birmingham | AA | Chicago White Sox | BhamBarons | http://www.milb.com/index.jsp?sid=t247 |
| Blue Jays | Rk | Toronto Blue Jays | | http://www.milb.com/index.jsp?sid=t1390 |
| Blue Jays | Frk | Toronto Blue Jays | | http://www.milb.com/index.jsp?sid=t604 |
| Bluefield | Rk | Toronto Blue Jays | BluefieldJays | http://www.milb.com/index.jsp?sid=t517 |
| Boise | A- | Colorado Rockies | BoiseHawks | http://www.milb.com/index.jsp?sid=t480 |
| Boston Red Sox | MLB | | RedSox | http://m.redsox.mlb.com/ |

| | | | | |
|-------------------|-----|-----------------------|-----------------|---|
| Bowie | AA | Baltimore Orioles | BowieBaysox | http://www.milb.com/index.jsp?sid=t418 |
| Bowling Green | A | Tampa Bay Rays | BGHotRods | http://www.milb.com/index.jsp?sid=t2498 |
| Bradenton | A+ | Pittsburgh Pirates | The_Marauders | http://www.milb.com/index.jsp?sid=t3390 |
| Braves | Rk | Atlanta Braves | | http://www.milb.com/index.jsp?sid=t464 |
| Braves | Frk | Atlanta Braves | | http://www.milb.com/index.jsp?sid=t605 |
| Bravos de Leon | AAA | Mexican League | NacimosBravos | http://www.milb.com/index.jsp?sid=t434 |
| Brewers | Rk | Milwaukee Brewers | | http://www.milb.com/index.jsp?sid=t406 |
| Brewers | Frk | Milwaukee Brewers | | http://www.milb.com/index.jsp?sid=t607 |
| Bristol | Rk | Pittsburgh Pirates | BriBucs | http://www.milb.com/index.jsp?sid=t557 |
| Brooklyn | A- | New York Mets | BKCyclones | http://www.milb.com/index.jsp?sid=t453 |
| Buffalo | AAA | Toronto Blue Jays | BuffaloBisons | http://www.milb.com/index.jsp?sid=t422 |
| Buies Creek | A+ | Houston Astros | bcreekastros | http://www.milb.com/index.jsp?sid=t3712 |
| Burlington | Rk | Kansas City Royals | BRoyalsKC | http://www.milb.com/index.jsp?sid=t483 |
| Burlington | A | Los Angeles Angels | BurlingtonBees | http://www.milb.com/index.jsp?sid=t420 |
| Cardinals | Rk | St. Louis Cardinals | | http://www.milb.com/index.jsp?sid=t1370 |
| Cardinals | Frk | St. Louis Cardinals | | http://www.milb.com/index.jsp?sid=t608 |
| Carolina | A+ | Milwaukee Brewers | CarolinaMudcats | http://www.milb.com/index.jsp?sid=t249 |
| Cedar Rapids | A | Minnesota Twins | CRKernels | http://www.milb.com/index.jsp?sid=t492 |
| Charleston | A | New York Yankees | ChasRiverDogs | http://www.milb.com/index.jsp?sid=t233 |
| Charlotte | A+ | Tampa Bay Rays | StoneCrabs | http://www.milb.com/index.jsp?sid=t2730 |
| Charlotte | AAA | Chicago White Sox | KnightsBaseball | http://www.milb.com/index.jsp?sid=t494 |
| Chattanooga | AA | Minnesota Twins | ChattLookouts | http://www.milb.com/index.jsp?sid=t498 |
| Chicago Cubs | MLB | | Cubs | http://m.cubs.mlb.com/ |
| Chicago White Sox | MLB | | whitesox | http://m.redsox.mlb.com/ |
| Cincinnati Reds | MLB | | Reds | http://m.reds.mlb.com/ |
| Clearwater | A+ | Philadelphia Phillies | Threshers | http://www.milb.com/index.jsp?sid=t566 |
| Cleveland Indians | MLB | | Indians | http://m.indians.mlb.com/ |
| Clinton | A | Seattle Mariners | LumberKings | http://www.milb.com/index.jsp?sid=t500 |
| Colorado Rockies | MLB | | Rockies | http://m.rockies.mlb.com/ |
| Colorado Springs | AAA | Milwaukee Brewers | skysox | http://www.milb.com/index.jsp?sid=t551 |
| Columbia | A | New York Mets | ColaFireflies | http://www.milb.com/index.jsp?sid=t3705 |
| Columbus | AAA | Cleveland Indians | CLBClippers | http://www.milb.com/index.jsp?sid=t445 |
| Connecticut | A- | Detroit Tigers | thectigers | http://www.milb.com/index.jsp?sid=t571 |
| Corpus Christi | AA | Houston Astros | cchooks | http://www.milb.com/index.jsp?sid=t482 |
| Cubs | Rk | Chicago Cubs | | http://www.milb.com/index.jsp?sid=t407 |
| Cubs 1 | Frk | Chicago Cubs | | http://www.milb.com/index.jsp?sid=t609 |
| Cubs 2 | Frk | Chicago Cubs | | http://www.milb.com/index.jsp?sid=t2270 |
| Danville | Rk | Atlanta Braves | DanvilleBraves | http://www.milb.com/index.jsp?sid=t429 |
| Dayton | A | Cincinnati Reds | DragonsBaseball | http://www.milb.com/index.jsp?sid=t459 |

| | | | | |
|--------------------------|-----|----------------------|-----------------|---|
| Daytona | A+ | Cincinnati Reds | daytonatortugas | http://www.milb.com/index.jsp?sid=t450 |
| Delmarva | A | Baltimore Orioles | shorebirds | http://www.milb.com/index.jsp?sid=t548 |
| Detroit Tigers | MLB | | tigers | http://m.indians.mlb.com/ |
| Diablos Rojos del Mexico | AAA | Mexican League | DiablosRojosMX | http://www.milb.com/index.jsp?sid=t532 |
| Diamondbacks | Rk | Arizona Diamondbacks | | http://www.milb.com/index.jsp?sid=t1991 |
| Diamondbacks 1 | Frk | Arizona Diamondbacks | | http://www.milb.com/index.jsp?sid=t610 |
| Diamondbacks 2 | Frk | Arizona Diamondbacks | | http://www.milb.com/index.jsp?sid=t610 |
| Dodgers | Rk | Los Angeles Dodgers | | http://www.milb.com/index.jsp?sid=t2690 |
| Dodgers 1 | Frk | Los Angeles Dodgers | | http://www.milb.com/index.jsp?sid=t611 |
| Dodgers 2 | Frk | Los Angeles Dodgers | | http://www.milb.com/index.jsp?sid=t612 |
| Down East | A+ | Texas Rangers | GoWoodDucks | http://www.milb.com/index.jsp?sid=t485 |
| Dunedin | A+ | Toronto Blue Jays | DunedinBlueJays | http://www.milb.com/index.jsp?sid=t424 |
| Durham | AAA | Tampa Bay Rays | DurhamBulls | http://www.milb.com/index.jsp?sid=t234 |
| Durham Bulls PR | AAA | Tampa Bay Rays | DBullsMedia | https://www.milb.com/durham |
| Eastern League | AA | | EasternLeague | https://www.milb.com/eastern |
| El Paso | AAA | San Diego Padres | epchihuahuas | http://www.milb.com/index.jsp?sid=t4904 |
| Elizabethtown | Rk | Minnesota Twins | ETwinsBaseball | http://www.milb.com/index.jsp?sid=t576 |
| Erie | AA | Detroit Tigers | erie_seawolves | http://www.milb.com/index.jsp?sid=t106 |
| Eugene | A- | Chicago Cubs | EugeneEmeralds | http://www.milb.com/index.jsp?sid=t461 |
| Everett | A- | Seattle Mariners | EverettAquaSox | http://www.milb.com/index.jsp?sid=t403 |
| Florida | A+ | Atlanta Braves | FireFrogsBB | http://www.milb.com/index.jsp?sid=t503 |
| Florida State League | A+ | | FloridaStateLg | https://www.milb.com/florida-state |
| Fort Myers | A+ | Minnesota Twins | MiracleBaseball | http://www.milb.com/index.jsp?sid=t509 |
| Fort Wayne | A | San Diego Padres | TinCaps | http://www.milb.com/index.jsp?sid=t584 |
| Frederick | A+ | Baltimore Orioles | FrederickKeys | http://www.milb.com/index.jsp?sid=t493 |
| Fresno | AAA | Houston Astros | FresnoGrizzlies | http://www.milb.com/index.jsp?sid=t259 |
| Frisco | AA | Texas Rangers | RidersBaseball | http://www.milb.com/index.jsp?sid=t540 |
| Generales de Durango | AAA | Mexican League | GeneralesdDgo | http://www.milb.com/index.jsp?sid=t4444 |
| Giants | Rk | San Francisco Giants | | http://www.milb.com/index.jsp?sid=t408 |
| Giants | Frk | San Francisco Giants | | http://www.milb.com/index.jsp?sid=t615 |
| Grand Junction | Rk | Colorado Rockies | GJRockies | http://www.milb.com/index.jsp?sid=t4364 |
| Great Falls | Rk | Chicago White Sox | gfvoyagers | http://www.milb.com/index.jsp?sid=t581 |
| Great Lakes | A | Los Angeles Dodgers | greatlakesloons | http://www.milb.com/index.jsp?sid=t456 |
| Greensboro | A | Miami Marlins | GSOHoppers | http://www.milb.com/index.jsp?sid=t477 |
| Greenville | Rk | Houston Astros | | http://www.milb.com/index.jsp?sid=t413 |
| Greenville | A | Boston Red Sox | GreenvilleDrive | http://www.milb.com/index.jsp?sid=t428 |
| Guerreros de Oaxaca | AAA | Mexican League | GuerrerosOax | http://www.milb.com/index.jsp?sid=t579 |
| Gwinnett | AAA | Atlanta Braves | GoStripers | http://www.milb.com/index.jsp?sid=t431 |
| Hagerstown | A | Washington Nationals | HagerstownSuns | http://www.milb.com/index.jsp?sid=t563 |

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|----------------------------|-----|-----------------------|-----------------|---|
| Harrisburg | AA | Washington Nationals | HbgSenators | http://www.milb.com/index.jsp?sid=t547 |
| Hartford | AA | Colorado Rockies | GoYardGoats | http://www.milb.com/index.jsp?sid=t538 |
| Helena | Rk | Milwaukee Brewers | helenabrewers | http://www.milb.com/index.jsp?sid=t433 |
| Hickory | A | Texas Rangers | HickoryCrawdads | http://www.milb.com/index.jsp?sid=t448 |
| Hillsboro | A- | Arizona Diamondbacks | HillsboroHops | http://www.milb.com/index.jsp?sid=t419 |
| Houston Astros | MLB | | astros | http://m.astros.mlb.com/ |
| Hudson Valley | A- | Tampa Bay Rays | HVRenegades | http://www.milb.com/index.jsp?sid=t537 |
| Idaho Falls | Rk | Kansas City Royals | ifchukars | http://www.milb.com/index.jsp?sid=t444 |
| Indianapolis | AAA | Pittsburgh Pirates | indyindians | http://www.milb.com/index.jsp?sid=t484 |
| Indians | Rk | Cleveland Indians | | http://www.milb.com/index.jsp?sid=t2770 |
| Indians | Frk | Cleveland Indians | | http://www.milb.com/index.jsp?sid=t616 |
| Inland Empire | A+ | Los Angeles Angels | 66ersBaseball | http://www.milb.com/index.jsp?sid=t401 |
| Iowa | AAA | Chicago Cubs | IowaCubs | http://www.milb.com/index.jsp?sid=t451 |
| Jackson | AA | Arizona Diamondbacks | jacksongenerals | http://www.milb.com/index.jsp?sid=t104 |
| Jacksonville | AA | Miami Marlins | JaxShrimp | http://www.milb.com/index.jsp?sid=t564 |
| Johnson City | Rk | St. Louis Cardinals | JC_Cardinals | http://www.milb.com/index.jsp?sid=t438 |
| Jupiter | A+ | Miami Marlins | GoHammerheads | http://www.milb.com/index.jsp?sid=t479 |
| Kane County | A | Arizona Diamondbacks | KCCougars | http://www.milb.com/index.jsp?sid=t446 |
| Kannapolis | A | Chicago White Sox | Intimidators | http://www.milb.com/index.jsp?sid=t487 |
| Kansas City Royals | MLB | | Royals | http://m.royals.mlb.com/ |
| Kingsport | Rk | New York Mets | Kingsport_Mets | http://www.milb.com/index.jsp?sid=t506 |
| Lake County | A | Cleveland Indians | LCCaptains | http://www.milb.com/index.jsp?sid=t437 |
| Lake Elsinore | A+ | San Diego Padres | Storm_Baseball | http://www.milb.com/index.jsp?sid=t103 |
| Lakeland | A+ | Detroit Tigers | LkdFlyingTigers | http://www.milb.com/index.jsp?sid=t570 |
| Lakewood | A | Philadelphia Phillies | BlueClaws | http://www.milb.com/index.jsp?sid=t427 |
| Lancaster | A+ | Colorado Rockies | JetHawks | http://www.milb.com/index.jsp?sid=t491 |
| Lansing | A | Toronto Blue Jays | LansingLugnuts | http://www.milb.com/index.jsp?sid=t499 |
| Las Vegas | AAA | New York Mets | LasVegas51s | http://www.milb.com/index.jsp?sid=t400 |
| League of Mexican Baseball | AAA | Mexican League | LigaMexBeis | http://www.milb.com/index.jsp?sid=l125 |
| Lehigh Valley | AAA | Philadelphia Phillies | IronPigs | http://www.milb.com/index.jsp?sid=t1410 |
| Leigh Valley Iron Pigs PR | AA | Philadelphia Phillies | PorkCenter | https://www.milb.com/lehigh-valley |
| Leones de Yucatan | AAA | Mexican League | Leonesdeyuc | http://www.milb.com/index.jsp?sid=t496 |
| Lexington | A | Kansas City Royals | LexingtonLegend | http://www.milb.com/index.jsp?sid=t495 |
| Los Angeles Angels | MLB | | Angels | http://m.angels.mlb.com/ |
| Los Angeles Dodgers | MLB | | Dodgers | http://m.dodgers.mlb.com/ |
| Louisville | AAA | Cincinnati Reds | LouisvilleBats | http://www.milb.com/index.jsp?sid=t416 |
| Lowell | A- | Boston Red Sox | LowellSpinners | http://www.milb.com/index.jsp?sid=t558 |
| Lynchburg | A+ | Cleveland Indians | LynHillcats | http://www.milb.com/index.jsp?sid=t481 |

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|------------------------------|------|----------------------|-----------------|---|
| Mahoning Valley | A- | Cleveland Indians | mvscreppers | http://www.milb.com/index.jsp?sid=t545 |
| Mariners | Rk | Seattle Mariners | | http://www.milb.com/index.jsp?sid=t409 |
| Mariners | Frk | Seattle Mariners | | http://www.milb.com/index.jsp?sid=t618 |
| Marlins | Rk | Miami Marlins | | http://www.milb.com/index.jsp?sid=t467 |
| Marlins | Frk | Miami Marlins | | http://www.milb.com/index.jsp?sid=t619 |
| Memphis | AAA | St. Louis Cardinals | memphisredbirds | http://www.milb.com/index.jsp?sid=t235 |
| Mets | Rk | New York Mets | | http://www.milb.com/index.jsp?sid=t468 |
| Mets 1 | Frk | New York Mets | | http://www.milb.com/index.jsp?sid=t620 |
| Mets 2 | Frk | New York Mets | | http://www.milb.com/index.jsp?sid=t2117 |
| Miami Marlins | MLB | | Marlins | http://m.marlins.mlb.com/ |
| Midland | AA | Oakland Athletics | RockHounds | http://www.milb.com/index.jsp?sid=t237 |
| MiLB | MiLB | | MiLB | https://www.milb.com/ |
| MILB | MiLB | | MiLB_PR | https://www.milb.com/ |
| MiLB Baseball | MiLB | | MiLBpromos | https://www.milb.com/ |
| Milwaukee Brewers | MLB | | Brewers | http://m.brewers.mlb.com/ |
| Minnesota Twins | MLB | | Twins | http://m.twins.mlb.com/ |
| Mississippi | AA | Atlanta Braves | mbraves | http://www.milb.com/index.jsp?sid=t430 |
| Missoula | Rk | Arizona Diamondbacks | ospreybaseball | http://www.milb.com/index.jsp?sid=t518 |
| MLB Advanced Media | MiLB | | mlbam | http://www.mlb.com/careers/mlbam/ |
| Mobile | AA | Los Angeles Angels | Mobile_BayBears | http://www.milb.com/index.jsp?sid=t417 |
| Modesto | A+ | Seattle Mariners | ModestoNuts | http://www.milb.com/index.jsp?sid=t515 |
| Montgomery | AA | Tampa Bay Rays | BiscuitBaseball | http://www.milb.com/index.jsp?sid=t421 |
| Myrtle Beach | A+ | Chicago Cubs | Pelicanbaseball | http://www.milb.com/index.jsp?sid=t521 |
| Nashville | AAA | Oakland Athletics | nashvillesounds | http://www.milb.com/index.jsp?sid=t556 |
| Nationals | Rk | Washington Nationals | | http://www.milb.com/index.jsp?sid=t466 |
| Nationals | Frk | Washington Nationals | | http://www.milb.com/index.jsp?sid=t1270 |
| New Hampshire | AA | Toronto Blue Jays | FisherCats | http://www.milb.com/index.jsp?sid=t463 |
| New Orleans | AAA | Miami Marlins | cakesbaseball | http://www.milb.com/index.jsp?sid=t588 |
| New York Mets | MLB | | Mets | http://m.mets.mlb.com/ |
| New York Pennsylvania League | A- | New York P | nypennleague | https://www.milb.com/new-york-penn |
| New York Yankees | MLB | | Yankees | http://m.yankees.mlb.com/ |
| Norfolk | AAA | Baltimore Orioles | NorfolkTides | http://www.milb.com/index.jsp?sid=t568 |
| Northwest Arkansas | AA | Kansas City Royals | nwanaturals | http://www.milb.com/index.jsp?sid=t1350 |
| Oakland Athletics | MLB | | Athletics | http://m.athletics.mlb.com/ |
| Ogden | Rk | Los Angeles Dodgers | ogdenraptors | http://www.milb.com/index.jsp?sid=t530 |
| Oklahoma City | AAA | Los Angeles Dodgers | okc_dodgers | http://www.milb.com/index.jsp?sid=t238 |
| Olmecas de Tabasco | AAA | Mexican League | OlmecasTabasco | http://www.milb.com/index.jsp?sid=t442 |
| Omaha | AAA | Kansas City Royals | OMAStormChasers | http://www.milb.com/index.jsp?sid=t541 |
| Orem | Rk | Los Angeles Angels | OremOwlz | http://www.milb.com/index.jsp?sid=t519 |

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|----------------------------|-----|-----------------------|-----------------|---|
| Orioles | Rk | Baltimore Orioles | | http://www.milb.com/index.jsp?sid=t599 |
| Orioles | Frk | Baltimore Orioles | | http://www.milb.com/index.jsp?sid=t621 |
| Padres | Frk | San Diego Padres | | http://www.milb.com/index.jsp?sid=t622 |
| Padres 1 | Rk | San Diego Padres | | http://www.milb.com/index.jsp?sid=t410 |
| Padres 2 | Rk | San Diego Padres | | http://www.milb.com/index.jsp?sid=t5316 |
| Palm Beach | A+ | St. Louis Cardinals | GoPBCardinals | http://www.milb.com/index.jsp?sid=t279 |
| Pawtucket | AAA | Boston Red Sox | PawSox | http://www.milb.com/index.jsp?sid=t533 |
| Pensacola | AA | Cincinnati Reds | BlueWahoosBBall | http://www.milb.com/index.jsp?sid=t4124 |
| Peoria | A | St. Louis Cardinals | peoriachiefs | http://www.milb.com/index.jsp?sid=t443 |
| Pericos de Puebla | AAA | Mexican League | Pericos_Oficial | http://www.milb.com/index.jsp?sid=t520 |
| Philadelphia Phillies | MLB | | Phillies | http://m.phillies.mlb.com/ |
| Phillies | Rk | Philadelphia Phillies | | http://www.milb.com/index.jsp?sid=t469 |
| Phillies Red | Frk | Philadelphia Phillies | | http://www.milb.com/index.jsp?sid=t623 |
| Phillies White | Frk | Philadelphia Phillies | | http://www.milb.com/index.jsp?sid=t5085 |
| Piratas de Campeche | AAA | Mexican League | piratascampeche | http://www.milb.com/index.jsp?sid=t523 |
| Pirates | Rk | Pittsburgh Pirates | | http://www.milb.com/index.jsp?sid=t470 |
| Pirates | Frk | Pittsburgh Pirates | | http://www.milb.com/index.jsp?sid=t624 |
| Pittsburgh Pirates | MLB | | Pirates | http://m.pirates.mlb.com/ |
| Portland | AA | Boston Red Sox | PortlandSeaDogs | http://www.milb.com/index.jsp?sid=t546 |
| Potomac | A+ | Washington Nationals | PNats42 | http://www.milb.com/index.jsp?sid=t436 |
| Princeton | Rk | Tampa Bay Rays | PrincetonRays | http://www.milb.com/index.jsp?sid=t455 |
| Pulaski | Rk | New York Yankees | pulaskiyanks | http://www.milb.com/index.jsp?sid=t425 |
| Quad Cities | A | Houston Astros | QCRiverBandits | http://www.milb.com/index.jsp?sid=t565 |
| Rancho Cucamonga | A+ | Los Angeles Dodgers | RCQuakes | http://www.milb.com/index.jsp?sid=t526 |
| Rangers | Rk | Texas Rangers | | http://www.milb.com/index.jsp?sid=t411 |
| Rangers 1 | Frk | Texas Rangers | | http://www.milb.com/index.jsp?sid=t625 |
| Rangers 2 | Frk | Texas Rangers | | http://www.milb.com/index.jsp?sid=t2413 |
| Rays | Rk | Tampa Bay Rays | | http://www.milb.com/index.jsp?sid=t2003 |
| Rays 1 | Frk | Tampa Bay Rays | | http://www.milb.com/index.jsp?sid=t1611 |
| Rays 2 | Frk | Tampa Bay Rays | | http://www.milb.com/index.jsp?sid=t5086 |
| Reading | AA | Philadelphia Phillies | ReadingFightins | http://www.milb.com/index.jsp?sid=t522 |
| Red Sox | Rk | Boston Red Sox | | http://www.milb.com/index.jsp?sid=t471 |
| Red Sox | Frk | Boston Red Sox | | http://www.milb.com/index.jsp?sid=t626 |
| Reds | Rk | Cincinnati Reds | | http://www.milb.com/index.jsp?sid=t3430 |
| Reds | Frk | Cincinnati Reds | | http://www.milb.com/index.jsp?sid=t628 |
| Reno | AAA | Arizona Diamondbacks | Aces | http://www.milb.com/index.jsp?sid=t2310 |
| Reno Aces PR | AAA | | RenoAces_PR | https://www.milb.com/reno |
| Richmond | AA | San Francisco Giants | GoSquirrels | http://www.milb.com/index.jsp?sid=t3410 |
| Rieleros de Aguascalientes | AAA | Mexican League | RIELEROSdeAgs | http://www.milb.com/index.jsp?sid=t528 |

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|------------------------------|-----|----------------------|-----------------|---|
| Rochester | AAA | Minnesota Twins | RocRedWings | http://www.milb.com/index.jsp?sid=t534 |
| Rockies | Frk | Colorado Rockies | | http://www.milb.com/index.jsp?sid=t629 |
| Rojos | Frk | Cincinnati Reds | | http://www.milb.com/index.jsp?sid=t2412 |
| Rojos del Aguila de Veracruz | AAA | Mexican League | RojosdelAguila | http://www.rojosdelaguila.com/ |
| Rome | A | Atlanta Braves | TheRomeBraves | http://www.milb.com/index.jsp?sid=t432 |
| Round Rock | AAA | Texas Rangers | RRExpress | http://www.milb.com/index.jsp?sid=t102 |
| Royals | Rk | Kansas City Royals | | http://www.milb.com/index.jsp?sid=t412 |
| Royals | Frk | Kansas City Royals | | http://www.milb.com/index.jsp?sid=t630 |
| Sacramento | AAA | San Francisco Giants | RiverCats | http://www.milb.com/index.jsp?sid=t105 |
| Salem | A+ | Boston Red Sox | salemredsox | http://www.milb.com/index.jsp?sid=t414 |
| Salem-Keizer | A- | San Francisco Giants | SKVolcanoes | http://www.milb.com/index.jsp?sid=t578 |
| Salt Lake | AAA | Los Angeles Angels | SaltLakeBees | http://www.milb.com/index.jsp?sid=t561 |
| San Antonio | AA | San Diego Padres | missionsmilb | http://www.milb.com/index.jsp?sid=t510 |
| San Diego Padres | MLB | | Padres | http://m.padres.mlb.com/ |
| San Francisco Giants | MLB | | SFGiants | http://m.giants.mlb.com/ |
| San Jose | A+ | San Francisco Giants | SJGiants | http://www.milb.com/index.jsp?sid=t476 |
| Saraperos de Saltillo | AAA | Mexican League | OficialSarapero | http://www.milb.com/index.jsp?sid=t502 |
| Scranton/Wilkes-Barre | AAA | New York Yankees | swbrailriders | http://www.milb.com/index.jsp?sid=t531 |
| Seattle Mariners | MLB | | Mariners | http://m.mariners.mlb.com/ |
| South Bend | A | Chicago Cubs | SBCubs | http://www.milb.com/index.jsp?sid=t550 |
| Southern League Baseball | AA | | SLeagueBaseball | https://www.milb.com/southern |
| Spokane | A- | Texas Rangers | spokaneindians | http://www.milb.com/index.jsp?sid=t486 |
| Springfield | AA | St. Louis Cardinals | Sgf_Cardinals | http://www.milb.com/index.jsp?sid=t440 |
| St. Louis Cardinals | MLB | | Cardinals | http://m.cardinals.mlb.com/ |
| St. Lucie | A+ | New York Mets | stluciemetz | http://www.milb.com/index.jsp?sid=t507 |
| State College | A- | St. Louis Cardinals | SCSpikes | http://www.milb.com/index.jsp?sid=t1174 |
| Staten Island | A- | New York Yankees | SIYanks | http://www.milb.com/index.jsp?sid=t586 |
| Stockton | A+ | Oakland Athletics | stocktonports | http://www.milb.com/index.jsp?sid=t524 |
| Sultanes de Monterrey | AAA | Mexican League | SultanesOficial | http://www.milb.com/index.jsp?sid=t562 |
| Syracuse | AAA | Washington Nationals | SyracuseChiefs | http://www.milb.com/index.jsp?sid=t552 |
| Tacoma | AAA | Seattle Mariners | RainiersLand | http://www.milb.com/index.jsp?sid=t529 |
| Tampa | A+ | New York Yankees | TampaTarpoms | http://www.milb.com/index.jsp?sid=t587 |
| Tampa Bay Rays | MLB | | RaysBaseball | http://m.rays.mlb.com/ |
| Tennessee | AA | Chicago Cubs | smokiesbaseball | http://www.milb.com/index.jsp?sid=t553 |
| Texas Rangers | MLB | | Rangers | http://m.rangers.mlb.com/ |
| Tigers | Frk | Detroit Tigers | | http://www.milb.com/index.jsp?sid=t631 |
| Tigers East | Rk | Detroit Tigers | | http://www.milb.com/index.jsp?sid=t473 |
| Tigers West | Rk | Detroit Tigers | | http://www.milb.com/index.jsp?sid=t5071 |

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|------------------------|-----|-----------------------|-------------------------|---|
| Tigres de Quintana Roo | AAA | Mexican League | tigresqroficial?lang=en | http://www.milb.com/index.jsp?sid=t569 |
| Toledo | AAA | Detroit Tigers | MudHens | http://www.milb.com/index.jsp?sid=t512 |
| Toronto Blue Jays | MLB | | BlueJays | http://m.bluejays.mlb.com/ |
| Toros de Tijuana | AAA | Mexican League | TorosDeTijuana | http://www.milb.com/index.jsp?sid=t5010 |
| Trenton | AA | New York Yankees | TrentonThunder | http://www.milb.com/index.jsp?sid=t567 |
| Tri-City | A- | Houston Astros | ValleyCats | http://www.milb.com/index.jsp?sid=t577 |
| Tri-City | A- | San Diego Padres | TC_DustDevils | http://www.milb.com/index.jsp?sid=t460 |
| Tulsa | AA | Los Angeles Dodgers | TulsaDrillers | http://www.milb.com/index.jsp?sid=t260 |
| Twins | Rk | Minnesota Twins | | http://www.milb.com/index.jsp?sid=t474 |
| Twins | Frk | Minnesota Twins | | http://www.milb.com/index.jsp?sid=t632 |
| Vancouver | A- | Toronto Blue Jays | vancanadians | http://www.milb.com/index.jsp?sid=t435 |
| Vaqueros Laguna | AAA | Mexican League | RedVaqueros | http://www.milb.com/index.jsp?sid=t447 |
| Vermont | A- | Oakland Athletics | VTLakeMonsters | http://www.milb.com/index.jsp?sid=t462 |
| Visalia | A+ | Arizona Diamondbacks | VisaliaRawhide | http://www.milb.com/index.jsp?sid=t516 |
| Washington Nationals | MLB | | Nationals | http://m.nationals.mlb.com/ |
| West Michigan | A | Detroit Tigers | wmwhitecaps | http://www.milb.com/index.jsp?sid=t582 |
| West Virginia | A- | Pittsburgh Pirates | WVBlackBears | http://www.milb.com/index.jsp?sid=t5020 |
| West Virginia | A | Pittsburgh Pirates | wv_power | http://www.milb.com/index.jsp?sid=t525 |
| White Sox | Rk | Chicago White Sox | | http://www.milb.com/index.jsp?sid=t1997 |
| White Sox | Frk | Chicago White Sox | | http://www.milb.com/index.jsp?sid=t633 |
| Williamsport | A- | Philadelphia Phillies | crosscutters | http://www.milb.com/index.jsp?sid=t449 |
| Wilmington | A+ | Kansas City Royals | WilmBlueRocks | http://www.milb.com/index.jsp?sid=t426 |
| Winston-Salem | A+ | Chicago White Sox | WSDashBaseball | http://www.milb.com/index.jsp?sid=t580 |
| Wisconsin | A | Milwaukee Brewers | TimberRattlers | http://www.milb.com/index.jsp?sid=t572 |
| Yankees | Frk | New York Yankees | | http://www.milb.com/index.jsp?sid=t634 |
| Yankees East | Rk | New York Yankees | | http://www.milb.com/index.jsp?sid=t475 |
| Yankees West | Rk | New York Yankees | | http://www.milb.com/index.jsp?sid=t4725 |

See additional PDF file for list of unique Tweet IDs.

APPENDIX F: TEAM NAMES AND ABBREVIATIONS

To help simplify the data structure and Major League affiliations, I am using MLB's own abbreviations to describe the thirty MLB teams. This nomenclature constitutes a standardized or controlled vocabulary within the professional baseball and baseball research communities.

Table 18. MLB team name abbreviations.

| Abbreviation | Team Name |
|---------------------|-----------------------|
| ARI | Arizona Diamondbacks |
| ATL | Atlanta Braves |
| BAL | Baltimore Orioles |
| BOS | Boston Red Sox |
| CHC | Chicago Cubs |
| CIN | Cincinnati Reds |
| CLE | Cleveland Indians |
| COL | Colorado Rockies |
| CWS | Chicago White Sox |
| DET | Detroit Tigers |
| HOU | Houston Astros |
| KC | Kansas City Royals |
| LAA | Los Angeles Angels |
| LAD | Los Angeles Dodgers |
| MIA | Miami Marlins |
| MIL | Milwaukee Brewers |
| MIN | Minnesota Twins |
| NYM | New York Mets |
| NYY | New York Yankees |
| OAK | Oakland Athletics |
| PHI | Philadelphia Phillies |
| PIT | Pittsburgh Pirates |
| SD | San Diego Padres |
| SEA | Seattle Mariners |
| SF | San Francisco Giants |
| STL | St. Louis Cardinals |
| TB | Tampa Bay Rays |
| TEX | Texas Rangers |
| TOR | Toronto Blue Jays |
| WSH | Washington Nationals |

However, a small number of Major League teams represented in the dataset relocated or changed names before evolving into or being replaced by the current list of professional teams. Those team names and a specially-developed nomenclature for their abbreviations include the following teams.

Table 19. Team name abbreviations for non-standard teams.

| Abbreviation | Explanation |
|--------------|---|
| WSS/MIN | Washington Senators, active through 1960, relocated to become the Minnesota Twins |
| MWB/ATL | Milwaukee Braves, active through 1965, relocated to become the Atlanta Braves |
| KCA/OAK | Kansas City Athletics, active through 1967, relocated to become the Oakland Athletics |
| SEAP/MIL | Seattle Pilots, active through 1969, relocated to become the Milwaukee Brewers |
| WSS/TEX | Washington Senators, active 1961-1971, relocated to become the Texas Rangers |
| MON/WSH | Montreal Expos, active through 2004, relocated to become the Washington Nationals |

Table 20. Classification levels and abbreviations.

| Abbreviation | Description |
|--------------|---|
| MLB | Major League Baseball. The highest level of professional baseball in the U.S. |
| AAA | Triple A Baseball. The highest Minor League level. |
| AA | Double A Baseball. Next-highest Minor League level. |
| A+ | Advanced A Baseball. |
| A | A Baseball. |
| A- | Short-season A Baseball. |
| Rk | Rookie Baseball. |
| Frk | Foreign-rookie Baseball. |

APPENDIX G: COUNTRY CODES AND REGIONAL TAXONOMIES

Some redundancies were kept in the data structure to facilitate faster queries and easier visualizations, specifically the birth_country field in the ‘Biographical’ table and the classification field in the ‘Transactional’ table. Additionally, given the significant number of players and birth countries represented, a decision was made to additionally code country locations by region to facilitate more meaningful macro-level analysis of location trends, specifically for player birthplaces. The United Nations’s “Standard Country or Area Codes for Statistical Use,” Series M, No. 49, was used to organize countries into regions and groups according to the UN taxonomy, which is provided below.

Table 21. United Nations statistical regions and ISO 2 and 3 character country codes.

| Country Name | Alpha-2 code | Alpha-3 code | Group 1 | Group 2 | Group 3 |
|---------------------|--------------|--------------|-----------------|---------------------------------|----------|
| Afghanistan | AF | AFG | Southern Asia | Asia | |
| Aland Islands | AX | ALA | Northern Europe | Europe | |
| Albania | AL | ALB | Southern Europe | Europe | |
| Algeria | DZ | DZA | Northern Africa | Africa | |
| American Samoa | AS | ASM | Polynesia | Oceania | |
| Andorra | AD | AND | Southern Europe | Europe | |
| Angola | AO | AGO | Middle Africa | Africa | |
| Anguilla | AI | AIA | Caribbean | Latin America and the Caribbean | Americas |
| Antarctica | AQ | ATA | | | |
| Antigua and Barbuda | AG | ATG | Caribbean | Latin America and the Caribbean | Americas |
| Argentina | AR | ARG | South America | Latin America and the Caribbean | Americas |
| Armenia | AM | ARM | Western Asia | Asia | |

| | | | | | |
|----------------------------------|----|-----|---------------------------|---------------------------------|----------|
| Aruba | AW | ABW | Caribbean | Latin America and the Caribbean | Americas |
| Australia | AU | AUS | Australia and New Zealand | Oceania | |
| Austria | AT | AUT | Western Europe | Europe | |
| Azerbaijan | AZ | AZE | Western Asia | Asia | |
| Bahamas | BS | BHS | Caribbean | Latin America and the Caribbean | Americas |
| Bahrain | BH | BHR | Western Asia | Asia | |
| Bangladesh | BD | BGD | Southern Asia | Asia | |
| Barbados | BB | BRB | Caribbean | Latin America and the Caribbean | Americas |
| Belarus | BY | BLR | Eastern Europe | Europe | |
| Belgium | BE | BEL | Western Europe | Europe | |
| Belize | BZ | BLZ | Central America | Latin America and the Caribbean | Americas |
| Benin | BJ | BEN | Western Africa | Africa | |
| Bermuda | BM | BMU | North America | | Americas |
| Bhutan | BT | BTN | Southern Asia | Asia | |
| Bolivia (Plurinational State of) | BO | BOL | South America | Latin America and the Caribbean | Americas |
| Bonaire, Sint Eustatius and Saba | BQ | BES | Caribbean | Latin America and the Caribbean | Americas |

| | | | | | |
|--------------------------------|----|-----|--------------------|---------------------------------|----------|
| Bosnia and Herzegovina | BA | BIH | Southern Europe | Europe | |
| Botswana | BW | BWA | Southern Africa | Africa | |
| Bouvet Island | BV | BVT | South America | Latin America and the Caribbean | Americas |
| Brazil | BR | BRA | South America | Latin America and the Caribbean | Americas |
| British Indian Ocean Territory | IO | IOT | Eastern Africa | Africa | |
| British Virgin Islands | VG | VGB | Caribbean | Latin America and the Caribbean | Americas |
| Brunei Darussalam | BN | BRN | South-eastern Asia | Asia | |
| Bulgaria | BG | BGR | Eastern Europe | Europe | |
| Burkina Faso | BF | BFA | Western Africa | Africa | |
| Burundi | BI | BDI | Eastern Africa | Africa | |
| Cabo Verde | CV | CPV | Western Africa | Africa | |
| Cambodia | KH | KHM | South-eastern Asia | Asia | |
| Cameroon | CM | CMR | Middle Africa | Africa | |
| Canada | CA | CAN | North America | | Americas |
| Cayman Islands | KY | CYM | Caribbean | Latin America and the Caribbean | Americas |
| Central African Republic | CF | CAF | Middle Africa | Africa | |
| Chad | TD | TCD | Middle Africa | Africa | |

| | | | | | |
|--|----|-----|---------------------------|---------------------------------|----------|
| Channel Islands | GB | GBR | Northern Europe | Europe | |
| Chile | CL | CHL | South America | Latin America and the Caribbean | Americas |
| China | CN | CHN | Eastern Asia | Asia | |
| China, Hong Kong Special Administrative Region | HK | HKG | Eastern Asia | Asia | |
| China, Macao Special Administrative Region | MO | MAC | Eastern Asia | Asia | |
| Christmas Island | CX | CXR | Australia and New Zealand | Oceania | |
| Cocos Keeling Islands | CC | CCK | Australia and New Zealand | Oceania | |
| Colombia | CO | COL | South America | Latin America and the Caribbean | Americas |
| Comoros | KM | COM | Eastern Africa | Africa | |
| Congo | CD | COD | Middle Africa | Africa | |
| Cook Islands | CK | COK | Polynesia | Oceania | |
| Costa Rica | CR | CRI | Central America | Latin America and the Caribbean | Americas |
| Cote d'Ivoire | CI | CIV | Western Africa | Africa | |
| Croatia | HR | HRV | Southern Europe | Europe | |
| Cuba | CU | CUB | Caribbean | Latin America and the Caribbean | Americas |
| Curaçao | CW | CUW | Caribbean | Latin America | Americas |

| | | | | | |
|---------------------------------------|----|-----|-----------------|---------------------------------|----------|
| | | | | and the Caribbean | |
| Cyprus | CY | CYP | Western Asia | Asia | |
| Czechia | CZ | CZE | Eastern Europe | Europe | |
| Democratic People's Republic of Korea | KP | PRK | Eastern Asia | Asia | |
| Democratic Republic of the Congo | CD | COD | Middle Africa | Africa | |
| Denmark | DK | DNK | Northern Europe | Europe | |
| Djibouti | DJ | DJI | Eastern Africa | Africa | |
| Dominica | DM | DMA | Caribbean | Latin America and the Caribbean | Americas |
| Dominican Republic | DO | DOM | Caribbean | Latin America and the Caribbean | Americas |
| Ecuador | EC | ECU | South America | Latin America and the Caribbean | Americas |
| Egypt | EG | EGY | Northern Africa | Africa | |
| El Salvador | SV | SLV | Central America | Latin America and the Caribbean | Americas |
| Equatorial Guinea | GQ | GNQ | Middle Africa | Africa | |
| Eritrea | ER | ERI | Eastern Africa | Africa | |
| Estonia | EE | EST | Northern Europe | Europe | |
| Eswatini | SZ | SWZ | Southern Africa | Africa | |
| Ethiopia | ET | ETH | Eastern Africa | Africa | |

| | | | | | |
|-----------------------------|----|-----|-----------------|---------------------------------|----------|
| Falkland Islands (Malvinas) | FK | FLK | South America | Latin America and the Caribbean | Americas |
| Faroe Islands | FO | FRO | Northern Europe | Europe | |
| Fiji | FJ | FJI | Melanesia | Oceania | |
| Finland | FI | FIN | Northern Europe | Europe | |
| France | FR | FRA | Western Europe | Europe | |
| French Guiana | GF | GUF | South America | Latin America and the Caribbean | Americas |
| French Polynesia | PF | PYF | Polynesia | Oceania | |
| French Southern Territories | TF | ATF | Eastern Africa | Africa | |
| Gabon | GA | GAB | Middle Africa | Africa | |
| Gambia | GM | GMB | Western Africa | Africa | |
| Georgia | GE | GEO | Western Asia | Asia | |
| Germany | DE | DEU | Western Europe | Europe | |
| Ghana | GH | GHA | Western Africa | Africa | |
| Gibraltar | GI | GIB | Southern Europe | Europe | |
| Greece | GR | GRC | Southern Europe | Europe | |
| Greenland | GL | GRL | North America | | Americas |
| Grenada | GD | GRD | Caribbean | Latin America and the Caribbean | Americas |
| Guadeloupe | GP | GLP | Caribbean | Latin America and the Caribbean | Americas |
| Guam | GU | GUM | Micronesia | Oceania | |

| | | | | | |
|-----------------------------------|----|-----|---------------------------|---------------------------------|----------|
| Guatemala | GT | GTM | Central America | Latin America and the Caribbean | Americas |
| Guinea | GN | GIN | Western Africa | Africa | |
| Guinea-Bissau | GW | GNB | Western Africa | Africa | |
| Guyana | GY | GUY | South America | Latin America and the Caribbean | Americas |
| Haiti | HT | HTI | Caribbean | Latin America and the Caribbean | Americas |
| Heard Island and McDonald Islands | HM | HMD | Australia and New Zealand | Oceania | |
| Holy See | VA | VAT | Southern Europe | Europe | |
| Honduras | HN | HND | Central America | Latin America and the Caribbean | Americas |
| Hungary | HU | HUN | Eastern Europe | Europe | |
| Iceland | IS | ISL | Northern Europe | Europe | |
| India | IN | IND | Southern Asia | Asia | |
| Indonesia | ID | IDN | South-eastern Asia | Asia | |
| Iran | IR | IRN | Southern Asia | Asia | |
| Iraq | IQ | IRQ | Western Asia | Asia | |
| Ireland | IE | IRL | Northern Europe | Europe | |
| Isle of Man | IM | IMN | Northern Europe | Europe | |
| Israel | IL | ISR | Western Asia | Asia | |
| Italy | IT | ITA | Southern Europe | Europe | |

| | | | | | |
|----------------------------------|----|-----|--------------------|---------------------------------|----------|
| Jamaica | JM | JAM | Caribbean | Latin America and the Caribbean | Americas |
| Japan | JP | JPN | Eastern Asia | Asia | |
| Jordan | JO | JOR | Western Asia | Asia | |
| Kazakhstan | KZ | KAZ | Central Asia | Asia | |
| Kenya | KE | KEN | Eastern Africa | Africa | |
| Kiribati | KI | KIR | Micronesia | Oceania | |
| Kuwait | KW | KWT | Western Asia | Asia | |
| Kyrgyzstan | KG | KGZ | Central Asia | Asia | |
| Lao People's Democratic Republic | LA | LAO | South-eastern Asia | Asia | |
| Latvia | LV | LVA | Northern Europe | Europe | |
| Lebanon | LB | LBN | Western Asia | Asia | |
| Lesotho | LS | LSO | Southern Africa | Africa | |
| Libera | LR | LBR | Western Africa | Africa | |
| Libya | LY | LBY | Northern Africa | Africa | |
| Liechtenstein | LI | LIE | Western Europe | Europe | |
| Lithuania | LT | LTU | Northern Europe | Europe | |
| Luxembourg | LU | LUX | Western Europe | Europe | |
| Madagascar | MG | MDG | Eastern Africa | Africa | |
| Malawi | MW | MWI | Eastern Africa | Africa | |
| Malaysia | MY | MYS | South-eastern Asia | Asia | |
| Maldives | MV | MDV | Southern Asia | Asia | |

| | | | | | |
|----------------------------------|----|-----|--------------------|---------------------------------|----------|
| Mali | ML | MLI | Western Africa | Africa | |
| Malta | MT | MLT | Southern Europe | Europe | |
| Marshall Islands | MH | MHL | Micronesia | Oceania | |
| Martinique | MQ | MTQ | Caribbean | Latin America and the Caribbean | Americas |
| Mauritania | MR | MRT | Western Africa | Africa | |
| Mauritius | MU | MUS | Eastern Africa | Africa | |
| Mayotte | YT | MYT | Eastern Africa | Africa | |
| Mexico | MX | MEX | Central America | Latin America and the Caribbean | Americas |
| Micronesia (Federated States of) | FM | FSM | Micronesia | Oceania | |
| Monaco | MC | MCO | Western Europe | Europe | |
| Mongolia | MN | MNG | Eastern Asia | Asia | |
| Montenegro | ME | MNE | Southern Europe | Europe | |
| Montserrat | MS | MSR | Caribbean | Latin America and the Caribbean | Americas |
| Morocco | MA | MAR | Northern Africa | Africa | |
| Mozambique | MZ | MOZ | Eastern Africa | Africa | |
| Myanmar | MM | MMR | South-eastern Asia | Asia | |
| Namibia | NA | NAM | Southern Africa | Africa | |
| Nauru | NR | NRU | Micronesia | Oceania | |
| Nepal | NP | NPL | Southern Asia | Asia | |

| | | | | | |
|--------------------------|----|-----|---------------------------|---------------------------------|----------|
| Netherlands | NL | NLD | Western Europe | Europe | |
| New Caledonia | NC | NCL | Melanesia | Oceania | |
| New Zealand | NZ | NZL | Australia and New Zealand | Oceania | |
| Nicaragua | NI | NIC | Central America | Latin America and the Caribbean | Americas |
| Niger | NE | NER | Western Africa | Africa | |
| Nigeria | NG | NGA | Western Africa | Africa | |
| Niue | NU | NIU | Polynesia | Oceania | |
| Norfolk Islands | NF | NFK | Australia and New Zealand | Oceania | |
| Northern Mariana Islands | MP | MNP | Micronesia | Oceania | |
| Norway | NO | NOR | Northern Europe | Europe | |
| Oman | OM | OMN | Western Asia | Asia | |
| Pakistan | PK | PAK | Southern Asia | Asia | |
| Palau | PW | PLW | Micronesia | Oceania | |
| Panama | PA | PAN | Central America | Latin America and the Caribbean | Americas |
| Papua New Guinea | PG | PNG | Melanesia | Oceania | |
| Paraguay | PY | PRY | South America | Latin America and the Caribbean | Americas |
| Peru | PE | PER | South America | Latin America and the Caribbean | Americas |
| Philippines | PH | PHL | South-eastern Asia | Asia | |

| | | | | | |
|----------------------------------|----|-----|-----------------|---------------------------------|----------|
| Pitcairn | PN | PCN | Polynesia | Oceania | |
| Poland | PL | POL | Eastern Europe | Europe | |
| Portugal | PT | PRT | Southern Europe | Europe | |
| Puerto Rico | PR | PRI | Caribbean | Latin America and the Caribbean | Americas |
| Qatar | QA | QAT | Western Asia | Asia | |
| Republic of Korea | KR | KOR | Eastern Asia | Asia | |
| Republic of Moldova | MD | MDA | Eastern Europe | Europe | |
| Reunion | RE | REU | Eastern Africa | Africa | |
| Romania | RO | ROU | Eastern Europe | Europe | |
| Russian Federation | RU | RUS | Eastern Europe | Europe | |
| Rwanda | RW | RWA | Eastern Africa | Africa | |
| Saint Barthélemy | BL | BLM | Caribbean | Latin America and the Caribbean | Americas |
| Saint Helena | SH | SHN | Western Africa | Africa | |
| Saint Kitts and Nevis | KN | TKN | Caribbean | Latin America and the Caribbean | Americas |
| Saint Lucia | LC | LCA | Caribbean | Latin America and the Caribbean | Americas |
| Saint Martin (French Part) | MF | MAF | Caribbean | Latin America and the Caribbean | Americas |
| Saint Pierre and Miquelon | PM | SPM | North America | | Americas |
| Saint Vincent and the Grenadines | VC | VCT | Caribbean | Latin America | Americas |

| | | | | | |
|--|----|-----|--------------------|---------------------------------|----------|
| | | | | and the Caribbean | |
| Samoa | WS | WSM | Polynesia | Oceania | |
| San Marino | SM | SMR | Southern Europe | Europe | |
| Sao Tome and Principe | ST | STP | Middle Africa | Africa | |
| Saudi Arabia | SA | SAU | Western Asia | Asia | |
| Senegal | SN | SEN | Western Africa | Africa | |
| Serbia | RS | SRB | Southern Europe | Europe | |
| Seychelles | SC | SYC | Eastern Africa | Africa | |
| Sierra Leone | SL | SLE | Western Africa | Africa | |
| Singapore | SG | SGP | South-eastern Asia | Asia | |
| Sint Maarten (Dutch part) | SX | SXM | Caribbean | Latin America and the Caribbean | Americas |
| Slovakia | SK | SVK | Eastern Europe | Europe | |
| Slovenia | SI | SVN | Southern Europe | Europe | |
| Solomon Islands | SB | SLB | Melanesia | Oceania | |
| Somalia | SO | SOM | Eastern Africa | Africa | |
| South Africa | ZA | ZAF | Southern Africa | Africa | |
| South Georgia and the South Sandwich Islands | GS | SGS | South America | Latin America and the Caribbean | Americas |
| South Sudan | SS | SSD | Eastern Africa | Africa | |
| Spain | ES | ESP | Southern Europe | Europe | |
| Sri Lanka | LK | LKA | Southern Asia | Asia | |
| State of Palestine | PS | PSE | Western Asia | Asia | |

| | | | | | |
|---|----|-----|--------------------|---------------------------------|----------|
| Sudan | SD | SDN | Northern Africa | Africa | |
| Suriname | SR | SUR | South America | Latin America and the Caribbean | Americas |
| Svalbard and Jan Mayen Islands | SJ | SJM | Northern Europe | Europe | |
| Sweden | SE | SWE | Northern Europe | Europe | |
| Switzerland | CH | CHE | Western Europe | Europe | |
| Syrian Arab Republic | SY | SYR | Western Asia | Asia | |
| Tajikistan | TJ | TJK | Central Asia | Asia | |
| Thailand | TH | THA | South-eastern Asia | Asia | |
| The former Yugoslav Republic of Macedonia | MK | MKD | Southern Europe | Europe | |
| Timor-Leste | TL | TLS | South-eastern Asia | Asia | |
| Togo | TG | TGO | Western Africa | Africa | |
| Tokelau | TK | TKL | Polynesia | Oceania | |
| Tonga | TO | TON | Polynesia | Oceania | |
| Trinidad and Tobago | TT | TTO | Caribbean | Latin America and the Caribbean | Americas |
| Tunisia | TN | TUN | Northern Africa | Africa | |
| Turkey | TR | TUR | Western Asia | Asia | |
| Turkmenistan | TM | TKM | Central Asia | Asia | |
| Turks and Caicos Islands | TC | TCA | Caribbean | Latin America and the Caribbean | Americas |

| | | | | | |
|--|----|-----|--------------------|---------------------------------|----------|
| Tuvalu | TV | TUV | Polynesia | Oceania | |
| Uganda | UG | UGA | Eastern Africa | Africa | |
| Ukraine | UA | UKR | Eastern Europe | Europe | |
| United Arab Emirates | AE | ARE | Western Asia | Asia | |
| United Kingdom of Great Britain and Northern Ireland | GB | GBR | Northern Europe | Europe | |
| United Republic of Tanzania | TZ | TZA | Eastern Africa | Africa | |
| United States Minor Outlying Islands | UM | UMI | Micronesia | Oceania | |
| United States of America | US | USA | North America | | Americas |
| United States Virgin Islands | VI | VIR | Caribbean | Latin America and the Caribbean | Americas |
| Uruguay | UY | URY | South America | Latin America and the Caribbean | Americas |
| Uzbekistan | UZ | UZB | Central Asia | Asia | |
| Vanuatu | VU | VUT | Melanesia | Oceania | |
| Venezuela (Bolivarian Republic of) | VE | VEN | South America | Latin America and the Caribbean | Americas |
| Viet Nam | VN | VNM | South-eastern Asia | Asia | |
| Wallis and Futuna Islands | WF | WLF | Polynesia | Oceania | |
| Western Sahara | EH | ESH | Northern Africa | Africa | |
| Yemen | YE | YEM | Western Asia | Asia | |

| | | | | | |
|----------|----|-----|----------------|--------|--|
| Zambia | ZM | ZMB | Eastern Africa | Africa | |
| Zimbabwe | ZW | ZWE | Eastern Africa | Africa | |

APPENDIX H: TWITTER SCRAPING AND METADATA

Sample scraping script (using Twarc):

```
twarc timeline MLB > MLB.json
twarc timeline Dbacks > Dbacks.json
twarc timeline Braves > Braves.json
twarc timeline Orioles > Orioles.json
twarc timeline RedSox > RedSox.json
twarc timeline Cubs > Cubs.json
twarc timeline whitesox > whitesox.json
twarc timeline Reds > Reds.json
twarc timeline Indians > Indians.json
twarc timeline Rockies > Rockies.json
twarc timeline tigers > tigers.json
twarc timeline astros > astros.json
twarc timeline Royals > Royals.json
twarc timeline Angels > Angels.json
```

JSON Schema for Twitter API data:

```
1 {
2   "$id": "something_json_test",
3   "type": "object",
4   "definitions": {},
5   "$schema": "http://json-schema.org/draft-07/schema#",
6   "properties": {
7     "contributors": {
8       "$id": "/properties/contributors",
9       "type": "null",
10      "title": "The Contributors Schema ",
11      "default": null,
12      "examples": [
13        null
14      ]
15    },
16    "truncated": {
17      "$id": "/properties/truncated",
18      "type": "boolean",
19      "title": "The Truncated Schema ",
20      "default": false,
21      "examples": [
22        false
23      ]
24    }
25  }
26}
```

```

23     ],
24   },
25   "is_quote_status": {
26     "$id": "/properties/is_quote_status",
27     "type": "boolean",
28     "title": "The Is_quote_Status Schema",
29     "default": false,
30     "examples": [
31       false
32     ]
33   },
34   "in_reply_to_status_id": {
35     "$id": "/properties/in_reply_to_status_id",
36     "type": "integer",
37     "title": "The In_reply_to_Status_id Schema",
38     "default": 0,
39     "examples": [
40       1011313653763706900
41     ]
42   },
43   "id": {
44     "$id": "/properties/id",
45     "type": "integer",
46     "title": "The Id Schema",
47     "default": 0,
48     "examples": [
49       1011314327977185300
50     ]
51   },
52   "favorite_count": {
53     "$id": "/properties/favorite_count",
54     "type": "integer",
55     "title": "The Favorite_Count Schema",
56     "default": 0,
57     "examples": [
58       0
59     ]
60   },
61   "full_text": {
62     "$id": "/properties/full_text",
63     "type": "string",
64     "title": "The Full_Text Schema",
65     "default": "",
66     "examples": [
67       "@NWAHenry Or you can share for the fun of it!"
68     ]

```

```

69 },
70 "source": {
71   "$id": "/properties/source",
72   "type": "string",
73   "title": "The Source Schema",
74   "default": "",
75   "examples": [
76     "<a href=\"https://about.twitter.com/products/Tweetdeck\""
77     "rel=\"nofollow\">TweetDeck</a>"
78   ],
79 },
80 "reTweeted": {
81   "$id": "/properties/reTweeted",
82   "type": "boolean",
83   "title": "The ReTweeted Schema",
84   "default": false,
85   "examples": [
86     false
87   ],
88 "coordinates": {
89   "$id": "/properties/coordinates",
90   "type": "null",
91   "title": "The Coordinates Schema",
92   "default": null,
93   "examples": [
94     null
95   ],
96 },
97 "entities": {
98   "$id": "/properties/entities",
99   "type": "object",
100  "properties": {
101    "symbols": {
102      "$id": "/properties/entities/properties/symbols",
103      "type": "array"
104    },
105    "user_mentions": {
106      "$id": "/properties/entities/properties/user_mentions",
107      "type": "array",
108      "items": {
109        "$id": "/properties/entities/properties/user_mentions/items",
110        "type": "object",
111        "properties": {
112          "id": {
113            "$id": "/properties/entities/properties/user_mentions/items/properties/id",

```

```

114     "type": "integer",
115     "title": "The Id Schema ",
116     "default": 0,
117     "examples": [
118         177992995
119     ]
120 },
121 "indices": {
122     "$id": "/properties/entities/properties/user_mentions/items/properties/indices",
123     "type": "array",
124     "items": {
125         "$id": "/properties/entities/properties/user_mentions/items/properties/indices/items",
126             "type": "integer",
127             "title": "The 0th Schema ",
128             "default": 0,
129             "examples": [
130                 0,
131                 9
132             ]
133         }
134     },
135     "id_str": {
136         "$id": "/properties/entities/properties/user_mentions/items/properties/id_str",
137         "type": "string",
138         "title": "The Id_str Schema ",
139         "default": "",
140         "examples": [
141             "177992995"
142         ]
143     },
144     "screen_name": {
145         "$id": "/properties/entities/properties/user_mentions/items/properties/screen_name",
146             "type": "string",
147             "title": "The Screen_name Schema ",
148             "default": "",
149             "examples": [
150                 "NWAHenry"
151             ]
152         },
153     "name": {
154         "$id": "/properties/entities/properties/user_mentions/items/properties/name",
155         "type": "string",
156         "title": "The Name Schema ",
157         "default": ""

```

```

158     "examples": [
159         "Henry Apple"
160     ]
161 }
162 }
163 }
164 },
165 "hashtags": {
166     "$id": "/properties/entities/properties/hashtags",
167     "type": "array"
168 },
169 "urls": {
170     "$id": "/properties/entities/properties/urls",
171     "type": "array"
172 }
173 }
174 },
175 "in_reply_to_screen_name": {
176     "$id": "/properties/in_reply_to_screen_name",
177     "type": "string",
178     "title": "The In_reply_to_screen_name Schema",
179     "default": "",
180     "examples": [
181         "NWAHenry"
182     ]
183 },
184 "in_reply_to_user_id": {
185     "$id": "/properties/in_reply_to_user_id",
186     "type": "integer",
187     "title": "The In_reply_to_user_id Schema",
188     "default": 0,
189     "examples": [
190         177992995
191     ]
192 },
193 "display_text_range": {
194     "$id": "/properties/display_text_range",
195     "type": "array",
196     "items": {
197         "$id": "/properties/display_text_range/items",
198         "type": "integer",
199         "title": "The 0th Schema",
200         "default": 0,
201         "examples": [
202             10,
203             45

```

```

204     ]
205   }
206 },
207 "reTweet_count": {
208   "$id": "/properties/reTweet_count",
209   "type": "integer",
210   "title": "The ReTweet_count Schema",
211   "default": 0,
212   "examples": [
213     0
214   ]
215 },
216 "id_str": {
217   "$id": "/properties/id_str",
218   "type": "string",
219   "title": "The Id_str Schema",
220   "default": "",
221   "examples": [
222     "1011314327977185280"
223   ]
224 },
225 "favorited": {
226   "$id": "/properties/favorited",
227   "type": "boolean",
228   "title": "The Favorited Schema",
229   "default": false,
230   "examples": [
231     false
232   ]
233 },
234 "user": {
235   "$id": "/properties/user",
236   "type": "object",
237   "properties": {
238     "follow_request_sent": {
239       "$id": "/properties/user/properties/follow_request_sent",
240       "type": "boolean",
241       "title": "The Follow_request_sent Schema",
242       "default": false,
243       "examples": [
244         false
245       ]
246     },
247     "has_extended_profile": {
248       "$id": "/properties/user/properties/has_extended_profile",
249       "type": "boolean",

```

```

250 "title": "The Has_extended_profile Schema ",
251 "default": false,
252 "examples": [
253     true
254 ]
255 },
256 "profile_use_background_image": {
257     "$id": "/properties/user/properties/profile_use_background_image",
258     "type": "boolean",
259     "title": "The Profile_use_background_image Schema ",
260     "default": false,
261     "examples": [
262         true
263     ]
264 },
265 "default_profile_image": {
266     "$id": "/properties/user/properties/default_profile_image",
267     "type": "boolean",
268     "title": "The Default_profile_image Schema ",
269     "default": false,
270     "examples": [
271         false
272     ]
273 },
274 "id": {
275     "$id": "/properties/user/properties/id",
276     "type": "integer",
277     "title": "The Id Schema ",
278     "default": 0,
279     "examples": [
280         34363347
281     ]
282 },
283 "profile_background_image_url_https": {
284     "$id": "/properties/user/properties/profile_background_image_url_https",
285     "type": "string",
286     "title": "The Profile_background_image_url_https Schema ",
287     "default": "",
288     "examples": [
289         "https://abs.twimg.com/images/themes/theme9/bg.gif"
290     ]
291 },
292 "verified": {
293     "$id": "/properties/user/properties/verified",
294     "type": "boolean",
295     "title": "The Verified Schema ",

```

```

296     "default": false,
297     "examples": [
298       true
299     ]
300   },
301   "translator_type": {
302     "$id": "/properties/user/properties/translator_type",
303     "type": "string",
304     "title": "The Translator_type Schema ",
305     "default": "",
306     "examples": [
307       "none"
308     ]
309   },
310   "profile_text_color": {
311     "$id": "/properties/user/properties/profile_text_color",
312     "type": "string",
313     "title": "The Profile_text_color Schema ",
314     "default": "",
315     "examples": [
316       "131417"
317     ]
318   },
319   "profile_image_url_https": {
320     "$id": "/properties/user/properties/profile_image_url_https",
321     "type": "string",
322     "title": "The Profile_image_url_https Schema ",
323     "default": "",
324     "examples": [
325
326     "https://pbs.twimg.com/profile_images/983800561656061953/Kaw7jSJe_normal.jpg"
327   ]
328   },
329   "profile_sidebar_fill_color": {
330     "$id": "/properties/user/properties/profile_sidebar_fill_color",
331     "type": "string",
332     "title": "The Profile_sidebar_fill_color Schema ",
333     "default": "",
334     "examples": [
335       "CCCACCA"
336     ]
337   },
338   "entities": {
339     "$id": "/properties/user/properties/entities",
340     "type": "object",
341     "properties": {

```

```

341     "url": {
342         "$id": "/properties/user/properties/entities/properties/url",
343         "type": "object",
344         "properties": {
345             "urls": {
346                 "$id": "/properties/user/properties/entities/properties/url/properties/urls",
347                 "type": "array",
348                 "items": {
349                     "$id": "/properties/user/properties/entities/properties/url/properties/urls/items",
350                     "type": "object",
351                     "properties": {
352                         "url": {
353                             "$id": "/properties/user/properties/entities/properties/url/properties/urls/items/properties/url",
354                             "type": "string",
355                             "title": "The Url Schema ",
356                             "default": "",
357                             "examples": [
358                                 "https://t.co/Ie82CxnpKo"
359                             ]
360                         },
361                         "indices": {
362                             "$id": "/properties/user/properties/entities/properties/url/properties/urls/items/properties/indices",
363                             "type": "array",
364                             "items": {
365                                 "$id": "/properties/user/properties/entities/properties/url/properties/urls/items/properties/indices/items",
366                                 "type": "integer",
367                                 "title": "The 0th Schema ",
368                                 "default": 0,
369                                 "examples": [
370                                     0,
371                                     23
372                                 ]
373                             }
374                         },
375                         "expanded_url": {
376                             "$id": "/properties/user/properties/entities/properties/url/properties/urls/items/properties/expanded_url",
377                             "type": "string",
378                             "title": "The Expanded_url Schema ",
379                             "default": "",
380                             "examples": [
381                                 "http://MiLB.com"
382                             ]
383                         }
384                     }
385                 }
386             }
387         }
388     }
389 }
```

```

383         },
384         "display_url": {
385             "$id": "/properties/user/properties/entities/properties/url/properties/urls/items/properties/display_url",
386             "type": "string",
387             "title": "The Display_url Schema ",
388             "default": "",
389             "examples": [
390                 "MiLB.com"
391             ]
392         }
393     }
394 }
395 }
396 }
397 },
398 "description": {
399     "$id": "/properties/user/properties/entities/properties/description",
400     "type": "object",
401     "properties": {
402         "urls": {
403             "$id": "/properties/user/properties/entities/properties/description/properties/urls",
404             "type": "array"
405         }
406     }
407 }
408 }
409 },
410 "followers_count": {
411     "$id": "/properties/user/properties/followers_count",
412     "type": "integer",
413     "title": "The Followers_count Schema ",
414     "default": 0,
415     "examples": [
416         174999
417     ]
418 },
419 "profile_sidebar_border_color": {
420     "$id": "/properties/user/properties/profile_sidebar_border_color",
421     "type": "string",
422     "title": "The Profile_sidebar_border_color Schema ",
423     "default": "",
424     "examples": [
425         "FFFFFF"
426     ]
427 },

```

```

428 "id_str": {
429   "$id": "/properties/user/properties/id_str",
430   "type": "string",
431   "title": "The Id_str Schema ",
432   "default": "",
433   "examples": [
434     "34363347"
435   ]
436 },
437 "profile_background_color": {
438   "$id": "/properties/user/properties/profile_background_color",
439   "type": "string",
440   "title": "The Profile_background_color Schema ",
441   "default": "",
442   "examples": [
443     "1A191A"
444   ]
445 },
446 "listed_count": {
447   "$id": "/properties/user/properties/listed_count",
448   "type": "integer",
449   "title": "The Listed_count Schema ",
450   "default": 0,
451   "examples": [
452     2674
453   ]
454 },
455 "is_translation_enabled": {
456   "$id": "/properties/user/properties/is_translation_enabled",
457   "type": "boolean",
458   "title": "The Is_translation_enabled Schema ",
459   "default": false,
460   "examples": [
461     false
462   ]
463 },
464 "utc_offset": {
465   "$id": "/properties/user/properties/utc_offset",
466   "type": "null",
467   "title": "The Utc_offset Schema ",
468   "default": null,
469   "examples": [
470     null
471   ]
472 },
473 "statuses_count": {

```

```

474     "$id": "/properties/user/properties/statuses_count",
475     "type": "integer",
476     "title": "The Statuses_count Schema ",
477     "default": 0,
478     "examples": [
479       122859
480     ]
481   },
482   "description": {
483     "$id": "/properties/user/properties/description",
484     "type": "string",
485     "title": "The Description Schema ",
486     "default": "",
487     "examples": [
488       "160 teams, thousands of prospects, millions of fans, and endless fun. The official
489       home for all things #MiLB, on and off the field."
490     ]
491   },
492   "friends_count": {
493     "$id": "/properties/user/properties/friends_count",
494     "type": "integer",
495     "title": "The Friends_count Schema ",
496     "default": 0,
497     "examples": [
498       3851
499     ]
500   },
501   "location": {
502     "$id": "/properties/user/properties/location",
503     "type": "string",
504     "title": "The Location Schema ",
505     "default": "",
506     "examples": [
507       "A Ballpark Near You"
508     ]
509   },
510   "profile_link_color": {
511     "$id": "/properties/user/properties/profile_link_color",
512     "type": "string",
513     "title": "The Profile_link_color Schema ",
514     "default": "",
515     "examples": [
516       "045CB5"
517     ]
518   },

```

```

519     "$id": "/properties/user/properties/profile_image_url",
520     "type": "string",
521     "title": "The Profile_image_url Schema ",
522     "default": "",
523     "examples": [
524       "http://pbs.twimg.com/profile_images/983800561656061953/Kaw7jSJe_normal.jpg"
525     ]
526   },
527   "following": {
528     "$id": "/properties/user/properties/following",
529     "type": "boolean",
530     "title": "The Following Schema ",
531     "default": false,
532     "examples": [
533       true
534     ]
535   },
536   "geo_enabled": {
537     "$id": "/properties/user/properties/geo_enabled",
538     "type": "boolean",
539     "title": "The Geo_enabled Schema ",
540     "default": false,
541     "examples": [
542       true
543     ]
544   },
545   "profile_banner_url": {
546     "$id": "/properties/user/properties/profile_banner_url",
547     "type": "string",
548     "title": "The Profile_banner_url Schema ",
549     "default": "",
550     "examples": [
551       "https://pbs.twimg.com/profile_banners/34363347/1527100606"
552     ]
553   },
554   "profile_background_image_url": {
555     "$id": "/properties/user/properties/profile_background_image_url",
556     "type": "string",
557     "title": "The Profile_background_image_url Schema ",
558     "default": "",
559     "examples": [
560       "http://abs.twimg.com/images/themes/theme9/bg.gif"
561     ]
562   },
563   "screen_name": {
564     "$id": "/properties/user/properties/screen_name",

```

```

565 "type": "string",
566 "title": "The Screen_name Schema ",
567 "default": "",
568 "examples": [
569     "MiLB"
570 ]
571 },
572 "lang": {
573     "$id": "/properties/user/properties/lang",
574     "type": "string",
575     "title": "The Lang Schema ",
576     "default": "",
577     "examples": [
578         "en"
579     ]
580 },
581 "profile_background_tile": {
582     "$id": "/properties/user/properties/profile_background_tile",
583     "type": "boolean",
584     "title": "The Profile_background_tile Schema ",
585     "default": false,
586     "examples": [
587         false
588     ]
589 },
590 "favourites_count": {
591     "$id": "/properties/user/properties/favourites_count",
592     "type": "integer",
593     "title": "The Favourites_count Schema ",
594     "default": 0,
595     "examples": [
596         4642
597     ]
598 },
599 "name": {
600     "$id": "/properties/user/properties/name",
601     "type": "string",
602     "title": "The Name Schema ",
603     "default": "",
604     "examples": [
605         "Minor League Baseball"
606     ]
607 },
608 "notifications": {
609     "$id": "/properties/user/properties/notifications",
610     "type": "boolean",

```

```

611 "title": "The Notifications Schema ",
612 "default": false,
613 "examples": [
614     false
615 ],
616 },
617 "url": {
618     "$id": "/properties/user/properties/url",
619     "type": "string",
620     "title": "The Url Schema ",
621     "default": "",
622     "examples": [
623         "https://t.co/Ie82CxnpKo"
624     ]
625 },
626 "created_at": {
627     "$id": "/properties/user/properties/created_at",
628     "type": "string",
629     "title": "The Created_at Schema ",
630     "default": "",
631     "examples": [
632         "Wed Apr 22 19:05:27 +0000 2009"
633     ]
634 },
635 "contributors_enabled": {
636     "$id": "/properties/user/properties/contributors_enabled",
637     "type": "boolean",
638     "title": "The Contributors_enabled Schema ",
639     "default": false,
640     "examples": [
641         false
642     ]
643 },
644 "time_zone": {
645     "$id": "/properties/user/properties/time_zone",
646     "type": "null",
647     "title": "The Time_zone Schema ",
648     "default": null,
649     "examples": [
650         null
651     ]
652 },
653 "protected": {
654     "$id": "/properties/user/properties/protected",
655     "type": "boolean",
656     "title": "The Protected Schema ",

```

```

657     "default": false,
658     "examples": [
659       false
660     ]
661   },
662   "default_profile": {
663     "$id": "/properties/user/properties/default_profile",
664     "type": "boolean",
665     "title": "The Default_profile Schema",
666     "default": false,
667     "examples": [
668       false
669     ]
670   },
671   "is_translator": {
672     "$id": "/properties/user/properties/is_translator",
673     "type": "boolean",
674     "title": "The Is_translator Schema",
675     "default": false,
676     "examples": [
677       false
678     ]
679   }
680 }
681 },
682 "geo": {
683   "$id": "/properties/geo",
684   "type": "null",
685   "title": "The Geo Schema",
686   "default": null,
687   "examples": [
688     null
689   ]
690 },
691 "in_reply_to_user_id_str": {
692   "$id": "/properties/in_reply_to_user_id_str",
693   "type": "string",
694   "title": "The In_reply_to_user_id_str Schema",
695   "default": "",
696   "examples": [
697     "177992995"
698   ]
699 },
700 "lang": {
701   "$id": "/properties/lang",
702   "type": "string",

```

```

703   "title": "The Lang Schema ",
704   "default": "",
705   "examples": [
706     "en"
707   ],
708 },
709 "created_at": {
710   "$id": "/properties/created_at",
711   "type": "string",
712   "title": "The Created_at Schema ",
713   "default": "",
714   "examples": [
715     "Mon Jun 25 18:24:59 +0000 2018"
716   ]
717 },
718 "in_reply_to_status_id_str": {
719   "$id": "/properties/in_reply_to_status_id_str",
720   "type": "string",
721   "title": "The In_reply_to_status_id_str Schema ",
722   "default": "",
723   "examples": [
724     "1011313653763706880"
725   ]
726 },
727 "place": {
728   "$id": "/properties/place",
729   "type": "null",
730   "title": "The Place Schema ",
731   "default": null,
732   "examples": [
733     null
734   ]
735 }
736 }
737 }
```

Sample JSON data for single Tweet:

```
{
  "contributors": null,
  "truncated": false,
  "is_quote_status": false,
  "in_reply_to_status_id": null,
  "id": 1.0352341462333e+18,
  "favorite_count": 0,
```

"full_text": "RT @EricFisherSBJ: In SBD, @MiLB renews sponsorship deal with @UncleRaysWay, with chip company adding presenting rights to Player of the Mo\u2026",
"source": "Twitter Web Client",
"reTweeted": false,
"coordinates": null,
"entities": {
 "symbols": [

],
 "user_mentions": [
 {
 "id": 29695913,
 "indices": [
 3,
 17
],
 "id_str": "29695913",
 "screen_name": "EricFisherSBJ",
 "name": "Eric Fisher"
 },
 {
 "id": 34363347,
 "indices": [
 27,
 32
],
 "id_str": "34363347",
 "screen_name": "MiLB",
 "name": "Minor League Baseball"
 },
 {
 "id": 3068590553,
 "indices": [
 62,
 75
],
 "id_str": "3068590553",
 "screen_name": "UncleRaysWay",
 "name": "Uncle Ray's"
 }
],
 "hashtags": [

],
 "urls": [

```
        ],
      },
      "in_reply_to_screen_name": null,
      "in_reply_to_user_id": null,
      "display_text_range": [
        0,
        140
      ],
      "reTweet_count": 1,
      "id_str": "1035234146233327616",
      "favorited": false,
      "retweeted_status": {
        "contributors": null,
        "truncated": false,
        "is_quote_status": false,
        "in_reply_to_status_id": null,
        "id": 1.035221489879e+18,
        "favorite_count": 5,
        "full_text": "In SBD, @MiLB renews sponsorship deal with @UncleRaysWay, with chip company adding presenting rights to Player of the Month Award. $ https://t.co/2QEhhUBilg",
        "source": "<a href=\"http://twitter.com\" rel=\"nofollow\">Twitter Web Client</a>",
        "retweeted": false,
        "coordinates": null,
        "entities": {
          "symbols": [
            ],
          },
          "user_mentions": [
            {
              "id": 34363347,
              "indices": [
                8,
                13
              ],
              "id_str": "34363347",
              "screen_name": "MiLB",
              "name": "Minor League Baseball"
            },
            {
              "id": 3068590553,
              "indices": [
                43,
                56
              ],
              "id_str": "3068590553",
              "screen_name": "UncleRaysWay",
            }
          ]
        }
      }
    }
  }
}
```

```
        "name": "Uncle Ray's"
    }
],
"hashtags": [
],
"urls": [
{
    "url": "https://t.co/2QEhhUBilg",
    "indices": [
        133,
        156
    ],
    "expanded_url":
"https://www.sportsbusinessdaily.com/Daily/Issues/2018/08/30/Marketing-and-Sponsorship/MiLB.aspx",
    "display_url": "sportsbusinessdaily.com/Daily/Issues/2\u2026"
}
],
},
"in_reply_to_screen_name": null,
"in_reply_to_user_id": null,
"display_text_range": [
    0,
    156
],
"reTweet_count": 1,
"id_str": "1035221489879015424",
"favorited": false,
"user": {
    "follow_request_sent": false,
    "has_extended_profile": true,
    "profile_use_background_image": true,
    "default_profile_image": false,
    "id": 29695913,
    "profile_background_image_url_https":
"https://abs.twimg.com/images/themes/theme1/bg.png",
    "verified": true,
    "translator_type": "none",
    "profile_text_color": "333333",
    "profile_image_url_https":
"https://pbs.twimg.com/profile_images/563418960322768897/il-II34I_normal.jpeg",
    "profile_sidebar_fill_color": "DDEEF6",
    "entities": {
        "url": {
            "urls": [

```

```

{
  "url": "https://t.co/LAmw4tgBjL",
  "indices": [
    0,
    23
  ],
  "expanded_url": "http://www.sportsbusinessjournal.com",
  "display_url": "sportsbusinessjournal.com"
}
],
},
"description": {
  "urls": [
    ]
}
},
"followers_count": 17899,
"profile_sidebar_border_color": "C0DEED",
"id_str": "29695913",
"profile_background_color": "C0DEED",
"listed_count": 897,
"is_translation_enabled": false,
"utc_offset": null,
"statuses_count": 15611,
"description": "MLB\\Digital Media\\Technology writer for SportsBusiness Journal (@SJSBD)",
"friends_count": 774,
"location": "NY\\NJ",
"profile_link_color": "1DA1F2",
"profile_image_url": "http://pbs.twimg.com/profile_images/563418960322768897/iI34I_normal.jpeg",
"following": false,
"geo_enabled": true,
"profile_banner_url": "https://pbs.twimg.com/profile_banners/29695913/1468952370",
"profile_background_image_url": "http://abs.twimg.com/images/themes/theme1/bg.png",
"screen_name": "EricFisherSBJ",
"lang": "en",
"profile_background_tile": false,
"favourites_count": 1,
"name": "Eric Fisher",
"notifications": false,
"url": "https://t.co/LAmw4tgBjL",
"created_at": "Wed Apr 08 11:38:10 +0000 2009",
"contributors_enabled": false,
"time_zone": null,

```

```
"protected": false,
"default_profile": true,
"is_translator": false
},
"geo": null,
"in_reply_to_user_id_str": null,
"possibly_sensitive": false,
"lang": "en",
"created_at": "Thu Aug 30 17:43:31 +0000 2018",
"in_reply_to_status_id_str": null,
"place": null
},
"user": {
"follow_request_sent": false,
"has_extended_profile": false,
"profile_use_background_image": false,
"default_profile_image": false,
"id": 1172571114,
"profile_background_image_url_https":
"https://abs.twimg.com/images/themes/theme1/bg.png",
"verified": false,
"translator_type": "none",
"profile_text_color": "000000",
"profile_image_url_https":
"https://pbs.twimg.com/profile_images/761236516635041792/sI2kvWUT_normal.jpg",
"profile_sidebar_fill_color": "000000",
"entities": {
"url": {
"urls": [
{
"url": "https://t.co/7uXMG",
"indices": [
0,
23
],
"expanded_url": "http://www.MiLB.com",
"display_url": "MiLB.com"
}
]
},
"description": {
"urls": [
]
}
},
"protected": false,
"default_profile": true,
"is_translator": false
},
```

```
"followers_count": 7725,
"profile_sidebar_border_color": "000000",
"id_str": "1172571114",
"profile_background_color": "000000",
"listed_count": 164,
"is_translation_enabled": false,
"utc_offset": null,
"statuses_count": 3877,
"description": "The official Twitter of the Minor League Baseball Communications Department.",
"friends_count": 383,
"location": "St. Petersburg, Florida",
"profile_link_color": "DD2E44",
"profile_image_url":
"http://pbs.twimg.com/profile_images/761236516635041792/sI2kvWUT_normal.jpg",
"following": true,
"geo_enabled": true,
"profile_banner_url": "https://pbs.twimg.com/profile_banners/1172571114/1454597033",
"profile_background_image_url": "http://abs.twimg.com/images/themes/theme1/bg.png",
"screen_name": "MiLB_PR",
"lang": "en",
"profile_background_tile": false,
"favourites_count": 2747,
"name": "MiLB Communications",
"notifications": false,
"url": "https://t.co/ FMckz7uXMG",
"created_at": "Tue Feb 12 17:19:55 +0000 2013",
"contributors_enabled": false,
"time_zone": null,
"protected": false,
"default_profile": false,
"is_translator": false
},
"geo": null,
"in_reply_to_user_id_str": null,
"lang": "en",
"created_at": "Thu Aug 30 18:33:48 +0000 2018",
"in_reply_to_status_id_str": null,
"place": null
}
```

