

CALLED OUT AT HOME

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EXECUTIVE SUMMARY

It takes a father to make a professional baseball player. Analyzing multiple data sources, including original data as well as large public data sets, researchers with the Austin Institute for the Study of Family & Culture demonstrate the connection between having a father in the home during childhood and going on to become a professional baseball player. This connection is an important part of the explanation for the disappearance of African American players from Major League Baseball during the past 35 years. The research shows that family structure may have long-lasting effects on a child's life prospects—specifically, that fathers have a special part to play in the lives of their children.

THE DISAPPEARING AFRICAN AMERICAN BASEBALL PLAYER

Next year marks 70 years since Jackie Robinson broke through Major League Baseball's color barrier in 1947. Twelve years after that, the achievement was complete when Pumpsie Green was invited to the Boston Red Sox spring training camp and soon became the first black player on the last team without an African American on the roster.

From the 1940s to the 1970s, African Americans experienced a steep and constant rise in their numbers in pro baseball. African American players reached the pinnacle of baseball excellence: won batting titles, including a rare triple crown, and set the homerun record. In 1957, African American ace Don Newcombe became the first recipient of the Cy Young Award, and he remains one of only two players in baseball history to be named rookie of the year, league MVP, and a Cy Young winner. Jackie Robinson, long after he retired, claimed one more amazing first as the first African American inducted into the Hall of Fame. From locked out to the top of the game in one generation, African Americans such as Ernie Banks, Frank Robinson, Hank Aaron, and Willie Mays shaped modern baseball.

But then, starting in the late 1970s and accelerating through the 80s and 90s, African American representation took a curious downward turn. Now less than half what it once was, black representation has plummeted from over 18% of all pro players to just 7%. In fact, this year marks the lowest African American representation in the pros since Jackie Robinson retired in 1959.

Why has this happened? That question drives the research in this report.

As with many complex social phenomena, there are surely multiple factors causally contributing to such a steep decline in African American representation in Major League Baseball. The rising popularity of the NBA and increasing prominence of the NFL seem likely to have contributed some to the decline. The NBA and NFL have also increased in popularity among whites, so shifting popularity alone isn't a fully adequate explanation of the exodus of African Americans from a sport in which their community has been such a profound historical part.

What was curious to the research team at the Austin Institute about the timing of the decline, too neat to be coincidence we thought, was that it began about 20 years after a sharp rise in out-of-wedlock childbirths.

In other words, we wondered whether there might be some connection between fatherhood and baseball.

This is perhaps not a novel insight—anyone who has seen baseball movies from “The Sandlot” to “Field of Dreams” will instantly recognize the deep connection baseball has to father-son relationships in America. What is new is having the data and analysis to show that the effects are more than anecdotes or nostalgia. Below we dig into the data and show the results in charts and tables. The cumulative effect of multiple approaches to the question, using large public data sets as well as original data collection, and subjecting all of it to rigorous checks for statistical validity, is that a potential explanation for the disappearance of the African American professional baseball player is the absence of a father in the home.

When he had a diaper on, he was a baseball player from day one. He was around the ballpark, and he loved the game, and you know when you have a kid that has that much enthusiasm in something, he's gonna be special. I always knew he was going to be a special player.

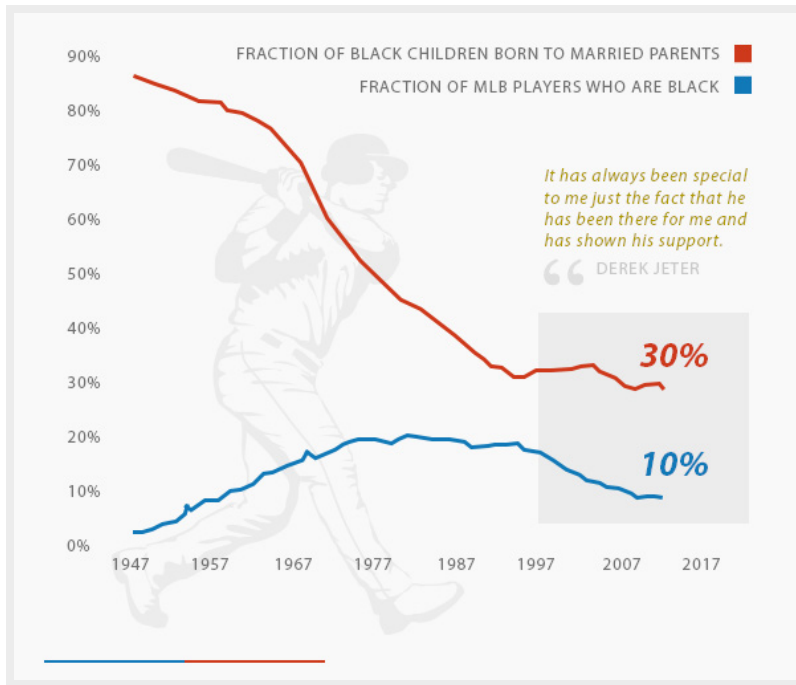
☞ Cecil Fielder, retired, speaking about his son Prince, who retired in 2016 after hitting the exact same number of homeruns as his father. (319)

DATA & ANALYSIS

The claim is bold—we recognize that. But the data led to the conclusion and they substantiate it. Our researchers approached the question using five different data gathering and analysis techniques:

- 1** Correlating county-level birth data with a database of baseball players (including the county they were born in) to see if there were relationships between out-of-wedlock childbirths and, 20 years later, the production of professional baseball players.
- 2** Using the smaller (but richer) Current Population Survey as an alternative approach. This database notes the relationships of those in the household, so we could specifically check for a father's presence.
- 3** Using the AddHealth database as a further check, this time looking to see whether a father's presence in the home was correlated with the percentage of teenagers who reported playing baseball (we included both boys playing baseball and girls playing softball).
- 4** Using maxpreps.com's ratings for high school baseball teams, we looked to see whether there was any connection between moms who are married when they give birth and, 16 years later, success of high school baseball teams.
- 5** Finally, we conducted original research in sampling approximately 600 current baseball players, 20 from each team, and then using publicly available journalistic sources to code for a father's presence in the home during their youth.

Below are graphs and charts displaying the data for each method in greater detail.



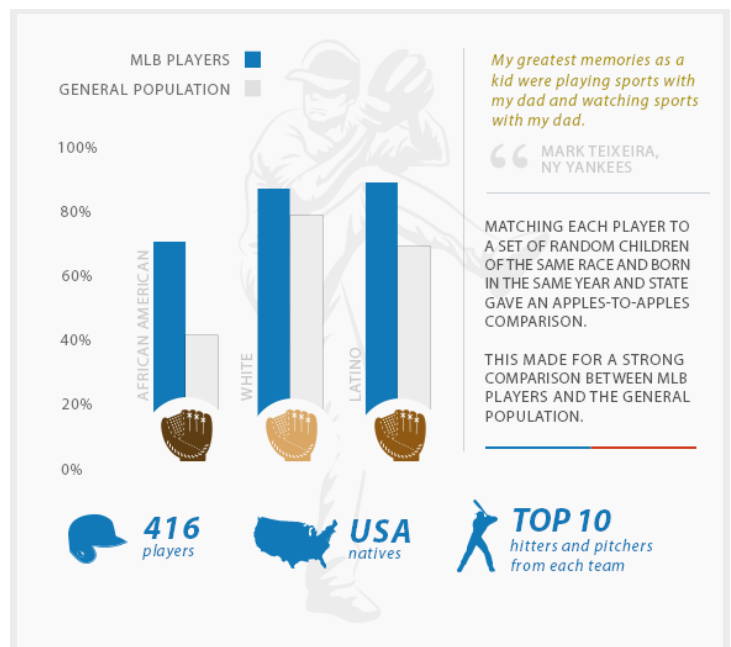
(Source: "Marriage and Poverty in the U.S.: By the Numbers" from the Heritage Foundation).

This figure illustrates two patterns occurring over the same time period. The lower line shows the rise and fall of the African American baseball player with the peak occurring in 1981 and then dropping such that the fraction of black baseball players today is as low as it was in 1957, the year Jackie Robinson, the first African American professional player, retired.¹

The top line is the percentage of black children who are born to married parents. We note for emphasis that the large drop

in African American baseball players in the 1990s occurred about twenty years after the time period of greatest decrease in black children born to married parents.

This graph represents the percent of current Major League Baseball players who were raised by their fathers. Our sample was built from a previously constructed sample of the top ten hitters and pitchers of each team, approximately 600 current baseball players. To control for cultural differences, we restricted the sample to include only players born in the US who are black, white, or Latino, so while the sample size from each team isn't identical, the sample as a whole remains representative of US-born African American, white, and Latino players in the MLB. For these 416 players, we then located references to childhood family structure that indicated whether they were raised with a father in the home.



For an apples-to-apples comparison, we then matched each player up with a random sample from the population of people who were similarly situated. For each player, we gathered data from the 1980-2000 US Decennial Census and the 2001-2007 ACS survey to create sets of approximately 30 children for each player where all children in the set were the same race, born in the same year, and born in the same state as the corresponding player. We then determined the fraction of those children who were raised with their father present, calculating the average across the full sample of match sets.

1 - Armour, Mark, and Daniel R. Levitt. "Baseball Demographics, 1947-2012." Society for American Baseball Research. N.p., n.d. Web. 30 Sept. 2016.

The result is a much better, stronger comparison of the presence of fathers in the lives of those who became Major League Baseball players and those who didn't, but were otherwise similarly situated.

In this table, we show that counties where there are more births to married mothers produced more professional baseball players (minor or major leagues) when those children grow up. The data work was a bit more complex than some of the other figures. Here, we focused on baseball players born between 1978 and 1988 and used player bio information to determine which county each player was born in. This sample includes 17,307 college players, 15,106 minor league players, and 2,731 major league players.

	(1)	(2)	(3)
Marital birth rate	0.749** (0.182)	0.895** (0.186)	0.525** (0.185)
Population (10,000s)		0.002* (0.0008)	0.002* (0.0008)
Fraction of population with college degree			0.657** (0.030)
N	32,155	32,155	32,155

Notes: This sample includes county-level birth cohorts for the birth years 1978-1988. The outcome variable is the number of college or professional baseball players that were born in that county and that year per 10000 births (the sample mean is 7.8). The marital birth rate is measured in standard deviation units where the sample standard deviation is 10.5 percentage points. Each regression includes state fixed effects and birth-year fixed effects.

We constructed a measure of the number of future professional baseball players born in each county in each year (which we normalized by the total number of births that year in that county). This measure varies from 0 to .0217. We then use the US natality files to construct a measure of the fraction of births to married mothers in each county in each birth year. During this time period 79.2% of children were born to married parents and this rate varied considerably across counties. For example, the county at the 10th percentile had a marital birth rate of 69.9% compared to the county at the 90th percentile which had a marital birth rate of 94.4%.

The regression coefficients in Figure 3 indicate that a standard deviation increase in the fraction of marital births (about a 10 percentage point increase) results in about 0.75 additional baseball players per 10,000 births, which is about a 10% increase relative to the sample mean of this measure of 7.8. When we control for the county's population this relationship increases a bit and when we control for the fraction of the population with a college degree it drops a bit.

In other words: controlling for multiple other factors that might influence the outcome, counties where a higher percentage of children are born to married parents also produce a higher percentage of baseball players.

We conducted this analysis in the same way we did for Figure 3, limiting our sample to children living at home during the 1984-1995 waves of the CPS. The unit of observation is a county-birth year combination and the outcome variable is the fraction of the birth cohort in that county who become minor or major league baseball players. Then, we look closer at that group—the outcome we most want to know about is the fraction of that same birth cohort who (as children) lived with their fathers or with married parents.

We would get up, go to the railroad tracks to get smooth rocks, put them in this pan and then go out to the lake," he remembers fondly. "We would just throw them and try to skip them. I think that really developed the desire to pick up a baseball and throw it. When I started playing baseball, it became natural.

 Andrew McCutchen, Pittsburgh Pirates center fielder

We find that a standard deviation increase in the percentage of children living with their fathers (about a 10% increase) is associated with an additional 2.67 baseball players per 10,000 individuals (a 25% increase, relative to the sample mean of 10.98). If we

confine the data to just the fraction of children living with married parents, the relationship is similar. In addition, this relationship stayed about the same when we controlled for population, but dropped some when we controlled for the fraction of the adult population that has a college degree. In other words,

Some might object that it's not fatherhood that makes a difference, but that baseball is culturally a sport that more educated, wealthier people are drawn to. What the data show is that there is some truth to the idea, but the effect of growing up with a father around remains even when we control for education.

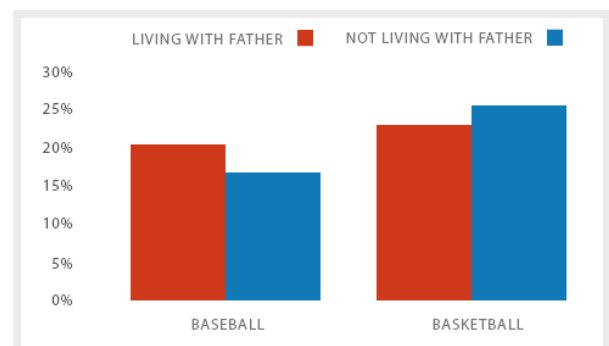
Fatherhood and married parent rates and the production of future high-level baseball players

	(1)	(2)	(3)
A. Father present			
Fraction with fathers present	2.670** (0.231)	2.659** (0.232)	1.896** (0.233)
Population (10,000s)		-0.001 (0.0009)	-0.002 (0.002)
Fraction of population with college degree			0.271** (0.023)
B. Parents married			
Fraction with married parents	2.453** (0.229)	2.445** (0.229)	1.684** (0.185)
Population (10,000s)		-0.002 (0.002)	-0.003 (0.002)
Fraction of population with college degree			0.277** (0.023)
N	1,812	1,812	1,812

Notes: This sample includes children living in one of the 141 counties that are provided in the public-use version of the CPS during the years 1984-1995. The sample focuses on children born between 1978 and 1988. The outcome variable is the number of college or professional baseball players that were born in that county and that year per 10000 births (the sample mean is 10.98). The father present rate is measured in standard deviation units where the sample standard deviation is 9.77 percentage points and the same for married parent rate which has a standard deviation of 9.44. Each regression includes state fixed effects and birth-year fixed effects.

AddHealth is a sample of teenagers who were in grades 7 through 12 between September, 1994 and December, 1995 (<http://www.socio.com/fam98a3.php>). This is one of the few datasets with information about the specific sports children or youth played, and whether children lived with their father.

We found that children are about 25% more likely to play baseball when they live with their father, a finding that holds for both boys (baseball) and girls (softball). In more detail, about 20% of youth living with their father report playing baseball compared to only 16% of youth not living with their father.



By contrast, the same data set shows that high school students living with their father are actually less likely to play basketball than are students without a father in the home.

In Figure 6 we provide a regression analog of the raw comparisons from Figure 5. This allowed us to control for gender, grade in school, and mother's education. None of these factors show much effect on the raw difference. We also controlled for the race and ethnicity of the student,

testing it in two ways (the publicly available data and the richer, restricted set). With the publicly available data, controlling for race reduced the participation gap between baseball and basketball, but that same gap actually widened when we used the restricted data.

The results with the full-set of controls indicate a 12% (about 2 points) increase in the likelihood that a high school student plays baseball/softball if he or she lives with their father. By contrast, the data reveal a 6% (about 1.5. points) decrease in basketball participation among those students with a father in the home.

Fatherhood and high school sports participation (AddHealth data)

	Baseball			Basketball		
Public-use (n=4,226)	0.035* (0.015)	0.035* (0.015)	0.019 (0.015)	-0.024 (0.016)	-0.025 (0.015)	-0.013 (0.016)
Restricted-use (n=78,601)	0.031** (0.003)	0.028** (0.003)	0.019** (0.003)	-0.006* (0.003)	-0.011** (0.003)	-0.014** (0.003)
Basic controls		X	X		X	X
Controls for race/ethnicity			X			X
N	4,226					

Notes: This sample includes high school students in the public-use or restricted-use version of the AddHealth dataset who are living with their mother. The key variable of interest is whether they are also living with their father. Each cell in this table is a separate regression where the coefficient reports the difference in the fraction of students participating in each sport based on whether or not they are living with their father. "Controls" includes gender, grade in school, and mother's education.

Marital birth rates and county-level high school baseball success

	(1)	(2)	(3)
Marital birth rate	1.766** (0.191)	1.744** (0.191)	0.721** (0.216)
Births that year (1,000s)		0.127* (0.030)	0.060* (0.030)
Fraction of mothers with college degree (percentage points)			0.197** (0.002)
N	2,512	2,512	2,512

Notes: This sample includes a single cross-section of counties in the US. The outcome variable is the average rating of the high school baseball teams in that county. This measure ranges from -35 to 27, has a mean of 0.029 and a standard deviation of 7.74. The marital birth rate is the fraction of births in that county that were to a married couple and is measured in standard deviation units where the sample standard deviation is 11.8 percentage points. Each regression includes state fixed effects.

We gathered data from maxpreps.com which provides a rating of baseball teams for about 14,000 high schools in the US. We matched each of these high schools to the county where they are located and calculated the average rating of the high school baseball teams in that county.

Since the maxpreps.com data is from this year, we decided to use birth data from 2000, the year that

many of the current high school players were born. We calculated the fraction of births in each county born to a married mother and then looked to see if differences in that marital birth rate were, once the children grew up, related to high school baseball success.

We found that a standard deviation increase in the marital birth rate (about 12 percentage points) is associated with an increase in the average baseball rating of the high schools in that county of 1.76 points. The county-level average rating ranges from -35 to 27 and has a standard deviation of 7.74. In short, high school baseball teams are more successful in counties where (16 years ago) more moms were married when they had children.

Yet again, a different approach arrives at a similar result: there is a strong connection between having fathers in the lives of their children and whether those children experience success in the game of baseball.

Dad left us when I was 9. What did I know back then? I thought he was coming back. I thought he had gone to the store or something. But he never came back. ...It still hurts. After a while, I lied to myself. I tried to tell myself that it didn't matter, that I didn't care. But times I was alone, I often cried. Where was my father? To this day, I still can't get close to people.

☺ Alex Rodriguez, New York Yankees

The central questions we asked were whether fatherhood and success in baseball might go together and furthermore whether that connection might at least partially explain the disappearance of the African American baseball player. Initially finding that fatherhood and baseball are tightly connected, our research team approached the question from different angles, subjecting the findings to rigorous analytic scrutiny to see if they held up. They did.

Why does all this matter? What's so important about baseball? The answer is that baseball is less important than fatherhood.

Often these days, when we turn on the television and see portrayals of fatherhood, we're offered a cavalcade of idiots and buffoons (e.g. Homer Simpson). Or we're told that generic parents are fungible, that what children need are caring adults. But you only need to flip over to a sports network to see a different view at work. We have no doubt that children need lots of caring adults in their lives; the more the better. But fathers are special, and fathers make professional baseball players. Whether your team is the Cubs or the White Sox, the Yankees or the Mets, the A's or the Giants, for most of the players on the roster, the person in their lives who made the greatest impact on their baseball success was dad.

When I was younger, I forget what age I was, my dad set the tone by graduating from Washington University here [in St. Louis]. We got to see him graduate and I know for me that stuck with me, every day.

☺ Ryan Howard, Philadelphia Phillies first baseman

It's like I grew into the player he would take me to go see and watch.

☺ Giancarlo Stanton

Perhaps it's not a huge leap to hypothesize that active fathers make a tremendous difference in the lives of their children. But baseball, because it is a sport practically obsessed with data and statistics, provided a great "laboratory" in which to see whether it was true and measure the effects.

We can now say with confidence that it takes a father to make a professional baseball player, and the decline in the presence of fathers in the homes of African American children partially explains the massive 60% decline in African American representation in Major League Baseball over the last 35 years.