

Game Theory and Sports

What Happens Next in Six Minutes - 11.12.2022

Larry Bernstein:

Welcome to What Happens Next. My name is Larry Bernstein.

What Happens Next is a podcast which covers economics, finance, history, politics and sports.

Today's session is about game theory and sports.

Today's first guest is Stanford Economics Professor Paul Oyer who has written the book *An Economist Goes to the Game: How to Throw Away \$580 million and Other Surprising Insights from the Economics of Sports*. Paul will discuss which sports your kids should play. Why South Koreans dominate women's golf? And how does game theory inform us whether Michael Jordan should take the last shot or pass the ball to another player?

Our second speaker will be University of Michigan economist Stefan Szymanski who is the author of *Soccernomics*. Our discussion will focus on the economics of all things soccer including why European soccer owners lose money, and why do certain soccer positions take most of the earnings.

Buckle up.

I make this podcast to learn, and I offer this program free of charge to anyone that is interested. Please tell your friends about it and have them sign-up to receive our weekly emails about upcoming shows. If you enjoy today's podcast, please subscribe so that you can continue to enjoy this content.

Ok, let's start the session with Paul Oyer. His session was taped with several my friends at Stanford Day an event that celebrated my friend Myron Scholes 80th birthday. Paul, please begin with your opening remarks.

Larry Bernstein:

Paul, how did you come to write a book about the economics of sports?

Paul Oyer:

It started as a project with my son. He helped draft some of the chapters and did some of the background research.

But along the way, he became a communist and the whole economics thing <laugh> wasn't working out anymore. So, it's really become my project. It starts with a story of my son hitting a game winning home run in little league. And what's that got to do with economics? Well, because economics is not the study of money, it's the study of scarce resources. And the scarcest resource we have is our youth.

The economics of being a kid are all about the tradeoff between investment and consumption. Youth is an opportunity to learn things and do things that will create human capital that will

make you better off later in life. But it's also a chance to consume and enjoy. These great memories are really utility, value and consumption, but if I'd spent too much time on Little League, I wouldn't be a Stanford professor right now.

The first chapter is about how much should you invest in your child's sports career. And the lesson is for those of us who are lucky enough to be in a fortunate position, we should probably not invest that much in it for the sake of their future, but rather we should invest it strictly because we want to enjoy consumption in sports when you're a kid. My son played little league, he was very good, but we didn't pursue a sports career for him.

And you might say, well, but all the skills he learned in sport made him better at his current jobs and made him better at school, the discipline, but the empirical evidence on that is really weak. They might develop those benefits. It's hard to say it's going to pay off later. And it's certainly hard to say relative to the opportunity cost of studying, practicing the violin or something else that it's better.

There are exceptions. Giants fans you've heard of Jock Pederson. Well, Jock played little league with my son. So sometimes this pays off. He makes \$6 million a year. Now my son doesn't, by the way, <laugh> and there's probably a lot of kids in my son's class at Brown University who make \$6 million who've become entrepreneurs.

The point is, even if you count the Jock Pederson's and Jeremy Lin's of the world, sports doesn't typically pay, even when you think about scholarships and maybe getting into college in some instances.

What are the exceptions? Kevin Durant is very different from my son. He was born into a difficult economic situation. And if you just look statistically at the economic mobility of somebody with his background, the likelihood that he would rise to a high level of income through standard jobs is not very high. Whatever barriers there are, unlike a kid from Palo Alto who could get into Brown University and make a decent living, it looks tougher for a kid like Kevin Durant from inner city Washington, DC.

Kevin Durant, when he is 13 years old, he's six feet, eight <laugh>. That makes a big difference. The number of people who are six feet eight when they're 13 and coordinated is very small. And the fraction of those who play in the NBA someday is large. If you find yourself coordinated, willing to spend a lot of time investing in basketball skills, and six feet eight when you're 13, then the return on investment looks really, really good. There were 320,000 African American baby boys born in 1988 who live in the United States. 320,000.

Kevin Durant earns 1% of the income of that group. The amount of money involved relative to opportunities elsewhere for this particular kid. Now, what about the white kids or what about the white kids from Palo Alto? It wouldn't be anywhere near that level even with his income. Between 6% and 7% of all the money earned by American black men born in 1988 was earned by NFL and NBA players. So, if you know when your 13 that you have the physical skills to go down that path, it becomes worth it if your other opportunities aren't that good. So that's the economics of youth sports.

The second chapter is about why are some countries so great at sports? Liechtenstein is the most accomplished country in the world measured in Olympic gold medals per population. It has a population of 37,000 and they win a gold medal in skiing every few years because of just pure natural advantage. They're lying at the base of a mountain. The kids after school go up and ski and there's only 37,000 people. One of them becomes good every few years. And it's totally location based.

Did you watch the Winter Olympics? Norway dominates cross country skiing. Again, that's what an economist would call natural advantage because in Cross Country skiing in Norway the mountains are far away. Because of the nature of how dark it is in the winter, there isn't as much daytime, which is critical for downhill skiing but not so much for cross country. Other factors that give Norway a natural advantage better than Sweden and Finland?

Well, that comes down to putting a complimentary investment from their other natural advantage, which is oil. Norway has all this oil money. One way they've chosen to spend it is to develop their Olympics teams. The book is about sports, but it's about economics more broadly because that story is exactly the story of why wine in Napa Valley is so great. You've had this natural advantage in grape growing and then you have a complementary thing, which is rich millionaires around here who need a hobby and pour money into making these wineries really good.

It's the same economics as Norway and skiing.

My favorite economic story, which has nothing to do with natural advantage and that's Korean women golfers. So women golfing fans turn on a women's golf tournament and look at the leaderboard, you almost always see some Korean either at the top or near the top, and a Korean guy usually not.

There was one major championship won by a Korean man 20 years ago. 36 have been won by Korean women. And if you look in the top 50 golfers in the world right now, the top Korean man is ranked 18th, and for women, the number one golfer is Korean. Three of the top 10, and 14 of the top 50 women are Korean. So why men versus women? Well, first let's talk about why they're good at sports. Like why Korea? Like what a stupid place for golf to be good. Do you know how crowded Seoul is? If you hit a golf ball in Seoul, you'll kill people. If you drew a golf course in the middle of Seoul, 10,000 people would live in that amount of space.

So, there's no natural advantage. If you've been to Asia and seen these triple deck driving ranges and you hit your ball, there's a net. It goes like five feet before it hits a net because there's no space. So why golf? Well, that's a mystery. Why are the girls so good particularly in Korea? That balance between investment versus consumption as children. Koreans are all-in on investment. I'm not making, racial stereotypes. it's empirical statements.

Based on surveys of Korean kids, they eat dinner with their parents the least of anybody in the world. On the days when they do the entrance exams for college, they close the airports, or at least make them fly in a different direction so the kids can concentrate on the tests, and they open

the stock exchange late, so the parents can drop their kids off and get them all settled. The much less amusing part of this is suicide rates the day after the results come out are high. It's all about focus. The boys focus on school because it's going to pay off in the career. Why are the girls less focused on this?

Korea has the largest gender pay gap in the world among developed countries. The only country that competes with it for that is Japan. And the girls are like, "Well, I have to work all day because that's the culture here. I'm going to focus my efforts on golf. They're also really good at archery and a few other weird things. And it's all about differences in the payoff in the labor market and how people spend their time. There's a woman named Jeongeun Lee6. She won the 2019 US Open, and she recently was second in another major golf championship. Her name is Lee6 because there are so many Korean women on the Asian golf tour and so many named Lee that they give them numbers to identify them by.

She said she wanted to play golf because I wanted to support my family no matter what. And so, economics drives these things.

Larry Bernstein:

I want to push back on your explanation for the dominance of Koreans in women's golf. Lots of kids are miserable in school or have limited economic opportunities, but they lack the discipline to practice golf every day. I would have thought that you would have argued that some famous female Korean golf star was a role model for a generation of young girls and that her success encouraged them to play golf.

Paul Over:

I can come up with a story for anything. It took a while to zero in on an explanation for the Korean women. Czech women are very good at tennis and there are institutional reasons for their success. The rich people in Czechoslovakia 200 years ago loved tennis and that filtered through and then later the Soviets built on top of that.

I've done research not related to this book about the role of random things on the labor market, but random stuff affects whole country's trajectories. And Czech tennis is a good example where random stuff from a few hundred years ago had a huge impact.

Larry Bernstein:

Economics drives professional sports. Different sports play more matches. Major league baseball has 162 games, the English Premier Soccer League has 38 matches, but American football has only a 17-week season without including the playoffs. Why is there so much variation between sports? And why don't they play all year long?

Paul Oyer:

So there's trade-offs. On the one hand, more money, more games, more injuries, and less consumption of leisure. American football, the risk of injury is so high that they're really in a bind to go any further than 17 or 18 weeks. They will keep going.

College football fans, when we were kids, you'd play nine weeks, you'd play a bowl game, and that was it. Now college teams, after the new playoff systems in place, some teams will be playing 16, 17 games. So, it's all economics. The money gets bigger. That trade-off between more money now. But the risk of brain injuries is a limiting factor.

The revenue per game being higher is more incentive to extend the season. If the revenue per game wasn't as high as it is in the NFL, you wouldn't be able to sustain a sports league with millions of dollars of salary that can only place 17 games in a season. The only way a sport can survive with a short season like 17 is if the revenues are really, really high. There are other sports where the seasons are very short, but they handle it differently because it's an individual sport where people are more substitutable. Boxing and MMA and marathon running people only do them a few times a year, but there are races and fights every weekend. The sport can have revenue every weekend, even though the individuals only are getting paid a few times a year.

Larry Bernstein:

Nobel Prize Winning Economist Douglass North wrote about the importance of institutions to economic success and the role of path dependency. How do you evaluate the role of institutions to the success of national sports?

Paul Oyer:

Look at the examples we talked about, the Korean women's golf came without any institutional support whatsoever. It just grew organically, and Se-ri Pak became a major champion, and then everybody piled-in, and it became a big deal. And then the institutions around it, which are the clubs and other things that are now making champions built around that success. Czech tennis is the opposite. Institutions really drove the success there. They had their own tournaments around the time Wimbledon started and the Czech aristocracy have been playing tennis and focusing on it for hundreds of years.

Norway, their success is all driven by institutions specifically set up by the government. One dynasty I didn't talk about is the most dominant is East African marathoners. I compiled the list of the top 25 marathoners in the world, 24 of them were from Kenya or Ethiopia. And it's more condensed than that. There's a group called the Kalenjin Tribe that live up in the mountains, and that's where all these runners are coming from. It's not institutions, it's all about a history and informal institutions and other things that make them so incredible. Institutions are an enabling factor, but they're neither sufficient, nor are they required.

Larry Bernstein:

Croatia has outperformed recently in multiple sports: basketball, soccer, skiing, among others. It has outperformed many of its European peers without substantial government funding, what is going on here?

Paul Oyer:

You don't need to be China to have as many great people as Croatia has. If you have the institutions in place to find the great athletes, you only need a few million people to get you there. A few million people in Norway get you plenty of good athletes, even if you just drew from a random few million around the world rather than only Norway.

Larry Bernstein:

In your book you discuss a critical moment in Game 6 of the 1997 NBA finals between the Chicago Bulls and the Utah Jazz. During the timeout, Jordan whispers to Steve Kerr to be ready. Everyone, in the stadium and watching at home, knew that the basketball will eventually end up in Michael Jordan's hands to take the last shot. And sure enough, Scottie Pippen dishes the ball to Jordan with the clock ticking down. The entire Utah Jazz defense converges on Jordan. Instead of shooting, Jordan passes the ball to Steve Kerr who hits the winning jumper from the top of the key. Why did Jordan pass it to Kerr and what does economics and game theory inform us about strategy in sports?

Paul Oyer:

I love the Michael Jordan question. Look, Michael Jordan was going to be a great basketball player no matter what, but he was only going to be as great if he got the strategy right. If you look at basketball players who don't play the mixed strategy, and always drive to their left or if Michael Jordan always took the last shot, he wouldn't have been effective.

Five guys would've been standing on top of him, and he would've shot anyway, and they would've blocked it. He must get it right. And he does it over time by trial and error. He survived because he had incredible skills and did it well. In the book, there are three examples about this mixed strategy equilibrium. The first one is goal kicks. If I'm shooting a penalty kick, I can shoot left or I can shoot right? And it's the best two by two simultaneous choice in the history of the world for economists. It's so much better than the true prisoners' dilemma as far as how it really works.

The kicker kicks and at the same exact moment, the goalkeeper dives one way or the other, and it has a huge impact. Kids, they're 10 years old and they always kick to the left because that's natural, and then the goalies start figuring it out, and they always dive to the right. They figure it out. But if they don't, they're going to be out of the league. It's just pure survival says the equilibrium's going to work out there. And there's papers written showing that on penalty kicks, it works out.

Larry Bernstein:

Just to clarify what you mean by this is. Most right footed kickers are better attacking to their left, so the goalies will dive in that direction to block it. To keep the goalies honest, the penalty kickers will have to kick to the right sometimes. And what the economists discovered in the data of nearly 1500 penalty kicks in professional soccer is that the chance of scoring is equal by kicking penalty shots in either direction because both the goalies and the penalty kickers successfully randomized their behavior.

Paul Oyer:

Tennis is another example. My tennis serve I have no control over it <laugh>. I get awesome random variation in where my serve goes, but it's decided for me by randomness. There's been analysis showing that the best players really do get that right.

The third example is pitching. Pitching is another example of a really great mixed strategy equilibrium setting where the pitcher is deciding whether to throw high, low, fast, slow, curve ball, fast ball.

The batter has to anticipate this because if they're anticipating the wrong pitch, they're more likely to strike out. It is so much harder to get that equilibrium right. With the soccer kick, it doesn't matter. It's the same each time. You have to make sure you don't have a pattern and any predictability in baseball, whether you should throw a fastball or not is completely different if you're facing a guy hitting .220 in the eighth inning of a game, that's a four-run difference versus if it's the bottom of the ninth and you're pitching to Aaron Judge. So those percentages with which you do change dramatically. And they now have people analyzing that on baseball teams.

But even you can't get the equilibrium right on this, in baseball, they've shown best pitchers are actually not as good at the strategy as the other guys. And the reason for that is they don't have to be to survive. The example I use in the book is Jamie Moyer. He pitched till well into his forties, and he was known for being crafty and really good with strategy. Well, he had to be, if you're 45, you can't be throwing the wrong pitch, you'll be out the next day. But you compare him to Mariano Rivera threw the same pitch, 91% of the time, everybody knew it was coming. It didn't matter.

They couldn't hit it. And it's not, you don't have to worry as much on the strategy if you're not on the survival.

That was a long answer to your question, which is Michael Jordan makes that pass thousands of times over his career and over time he gets to the right equilibrium and so does the defense.

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Larry Bernstein
Stefan, what is the state of soccer analytics?

Stefan Szymanski:

We've seen some big claims about progress in data analysis to improve performance. Liverpool, whose owners are famous for the application of analytics to achieve success with the Boston Red Sox, have claimed to make great strides. They've argued that their successful player trading, such as the huge profit they made on the trading Curtin, have been largely based on the use of statistical analysis. They also won the Champions League in the Premier League title.

There's no question that they have put together a great team of statisticians, but we question whether they've really made a breakthrough. It's impossible to know what techniques Liverpool is using because the club won't show its model to outsiders.

Liverpool's data analysts aren't opening themselves up to peer review. The only thing outsiders can do is look at the data that is available and see if there's any evidence of exceptional performance.

From the financial statements we identified the annual spend on salaries and net transfer expenditure for each club in the Premier League over a 10 year period and related it to the lead position achieved. What the data show is that Liverpool spent a bit less and achieved a bit less than the three teams ahead of them.

This isn't a spectacular overperformance. The data tells the same story. If we look only at the most recent five seasons, we don't believe that analytics is capable yet of winning trophies. Three of soccer's leading coaches in the current era, Ola, Jose Marino and Jurgen Club himself have little time for it. We think the data analytics going on inside clubs in the 2020s is like alchemy, the search for the philosopher stone, a material that could turn base metal into gold. Alchemy has a bad names the opposite of scientific inquiry and at root a waste of time. But recently, some historians have pointed out that it wasn't all bad. While alchemists search for the philosopher stone, they experimented with every possible combination of materials. And in the process discovered many things that remain of practical value today, especially in metallurgy. Their insane quest laid the foundations for modern chemistry.

Larry Bernstein:

Is soccer data only available to experts or is it like Bill James' baseball data that was freely available to the public?

Stefan Szymanski:

Online sources provide large sports databases for free which you can analyze. Last year, the University of Michigan launched an online course in sports analytics on the Coursera platform, which can be accessed for free. Soccer analytics, it's no longer the province of big clubs with big money, and some amateurs have managed to get jobs by undertaking their own garage band style research. In 2019, United hired Ashwin Ramen, a 17-year-old soccer geek living in Bangalore based entirely on his online research capabilities. Soccer analytic alchemy turned into chemistry thanks to the exploration undertaken by vast numbers of unknown researchers. Something similar seems to be going on in the world of soccer analytics.

There are open networks in which people share ideas and knowledge based on a common interest in making sense of the game.

Larry Bernstein:

Michael Lewis wrote a fantastic book years ago called Moneyball. Michael Lewis and I both worked at Salomon Brothers the same time, and Michael was fascinated by how my fixed income arbitrage department applied quantitative analysis to bond trading. Moneyball tells the story about how Billy Beane applied statistical analysis to baseball when he was the general manager of the Oakland As. Billy Beane appears to have added the most value to the drafting process as well as with his player trades. What are you seeing in soccer?

Stefan Szymanski:

In soccer most of the top players come from the development processes of the top clubs. And this is something that people often misunderstand about soccer. They imagine that these players are coming from all over and the big clubs just hire them when they mature. But actually, that's not true.

The ability to play soccer well is a form of human capital. And the question is how much of that human capital is specific to where you learn it and how much of it is general. The issue for clubs is that it's almost all general capital. So whatever the players learn at one club can be easily transferred to another, which is why clubs can identify talent, but they really struggle to profit from that development because there's a wide open market.

American sports have solved this problem through various restrictive practices, not in the least the draft, which is a way of making sure that there isn't competition for talent. But soccer has traditionally not had those mechanisms, which is one of the many reasons why soccer has always been a less profitable business than the major leagues in North America.

Larry Bernstein:

Is European soccer unprofitable for its owners?

Stefan Szymanski:

Very few at the top can make money. In England, Manchester United and Arsenal have always made money, but all the other clubs have pretty much all systematically lost money for decades.

Larry Bernstein:

What determines profitability for European soccer if there is unlimited competition? Shouldn't firms earn a fair return on capital and the players earn most of the money? Is there any brand value for clubs that can generate extra TV revenues, stadium ticket sales, and jersey advertising?

Stefan Szymanski:

It's a great question: how some make money and some don't? What is the equilibrium in the industry? North American leagues are relatively straightforward to understand. They have market power, they generate economic rents, they share the economics rents amongst themselves. That's standard cartel theory.

If the reason for the existence of the club is something more than the owner's pursuit of profit, there can be a reason why you can make losses. Soccer clubs in Europe represent communities, and people are willing to lose money in support of their communities. They provide more than just profits.

But then why is it that some clubs can make money? Well, the answer according to John Sutton is that there are no sunk costs in this industry.

Ask yourself, why does Coca-Cola even spend on marketing? Who on the planet has not heard of them? Well, the answer is it's not to sell the drink, it's to create barriers to entry. Anybody else would have to spend like that. The analogy in soccer is that the big clubs like Manchester United, Barcelona, Real Madrid, Munich, these clubs spend an absolute fortune on hiring players.

And anybody who wants to challenge them has to sink a similar amount of money into players. They're creating a barrier to entry, even though there are hundreds of teams competing in the market.

Larry Bernstein:

The global capital markets are very deep. You could do an IPO and raise billions if there were excess returns. But is there? Did Chelsea, for example, get a return on its capital?

Stefan Szymanski:

Roman Abramovich got his return on capital. His return on capital was a position in British society, which immunized him from being expatriated by Vladimir Putin. And until Putin invaded Ukraine this year, he got away with it. He made himself an established figure that's easily worth the \$1 billion investment he put on it. Sheik Mansour at Manchester City, what he's building is a reputation for Abu Dhabi.

The people who are investing are getting returns other than purely financial returns.

Since Covid we are seeing private equity flood into European soccer because they see these assets as being cheap. If you buy up a Manchester United that's historically been a guaranteed return.

But these private equity funds are putting their money into some of the lesser clubs. They think that they can follow the same strategy as Sheik Mansour and Roman Abramovich. The problem is there's room for one or two more, but if you start to have a dozen or so more competing entities, then you are going to undermine the dominant position of all of those clubs, which would be very interesting for European soccer, but those private equity firms will end up making money.

Larry Bernstein:

If I had to bet, with a competitive market the teams will not make any excess returns and all the rents will go to the players.

Next question relates to monetizing our tribal instincts. When I was growing up, I was a fanatical Chicago Bears fan. I loved Payton, Ditka, and Singletary. But American sports have been changing. Some kids love fantasy football and care more about the individual players than the teams. Do you think the European soccer teams can monetize this tribalism and can they blackmail communities with threats of relocation to have the local community pay for new stadiums?

Stefan Szymanski:

The idea of relocation is absolutely anathema in Europe. If you try to move a team in Europe, it would be considered a criminal offense. There are hundreds of teams, and each team represents a local community. And that community aspect is something that was preceded in the United States. If you go back to the 1950s, minor league baseball teams had a local identity, but that's died out now. And so, the only remaining manifestation in America is college sports.

Larry Bernstein:

Recently some of the European soccer teams tried to create a super league and that unraveled in a day. Was this an attempt to create a monopoly so those teams could earn higher profits?

Stefan Szymanski:

What you have in Europe is traditionally all these different markets. England is a market, Germany is a market, Italy is a market. And what's happened in the modern era is that those market barriers have come down. Fans in England can watch Spanish teams and Italian teams and so on.

The owners were trying to create something called a European Super League. Rather than Real Madrid play Liverpool once in a blue moon in the Champion League, we should play them every year. So you create a league and that is worth billions, giving people an opportunity to see the best teams in Europe play against each other more frequently. What was the problem with what they were doing?

The problem is they wanted to be guaranteed a presence in this league.

Larry Bernstein:

How does it work now if a soccer club performs better or worse than its peers?

Stefan Szymanski:

At the end of each season, teams move up or down in this hierarchy based purely on sporting performance. If you're at the bottom of the league, you go down. And that for these big clubs is a huge potential economic threat. You can't be sure that one day you won't get relegated.

It doesn't happen very often but it can to even the biggest clubs. So, what they were trying to do was insulate from this competitive process. That's an antitrust violation trying to get rid of competition. And fortunately, it's also against all the traditions of European soccer so the fans really hate the idea. And that was ultimately what stopped that process.

It was too transparent and that's why it failed.

Larry Bernstein:

The NFL owners are big time profit seekers. yet their organizational structure encourages equality among the teams. All the TV revenues are shared equally. The best draft choices go to the teams with the worst records, and the worst draft choices go to the most successful teams. The life of the average NFL player is short, so teams have trouble creating dynasties. My Chicago Bears were unbeatable in 1985, but they won only a single super bowl. What do you see in soccer?

Stefan Szymanski:

That's a very interesting question. The hidden assumption in your statement is that if they didn't do this, they would be less profitable.

There are two interpretations of what they're doing. Their explanation is that for a league to be successful, you need competitive balance. This was an idea dreamt up by baseball in 1879 that we need to share resources because if a competition becomes too unbalanced, then people will

lose interest. It will become too predictable. And so we need to share resources fairly equally to make sure that teams are competitive from year to year.

Do leagues that are more balance create more interest? There's an awful lot of research in economics on this, and the results are completely ambiguous.

What's the economist explanation? Well, if you are engaged in a cartel activity, you want to reduce the forces that competes away rents. What you want to do is find mechanisms which will disincentivize teams to compete with each other in economic terms.

So the draft is a way of stopping teams competing to get the best new players coming into the league. The salary cap is a way to stop teams competing to build up a better team. The revenue sharing is a way to stop teams competing by saying, "if I compete and generate more revenue, I'm just going to have to give it away to the other teams anyway."

All of these are anti-competitive mechanisms to maximize the rents and the monopoly profits of the league rather than this claimed benefit of competitive balance.

Larry Bernstein:

I went to see the US open and there were games between excellent players who aren't in the top 10 and just a few fans were watching their matches. Their tennis was excellent, but nobody cared. But the top players have huge crowds. Most of these economic rents are earned by the US Open franchise and not by the top players.

Imagine if the top eight players in tennis decided to boycott the Grand Slams and instead took it on the road and had competitive round robins. They could get sell-out crowds and earn most of the rent themselves. Why don't we see that? Why don't most of the rents go to the players instead of the organizers of Wimbledon?

Stefan Szymanski:

Well, I say this to you as an economist, money is not everything.

Larry Bernstein:

Oh, come on.

Stefan Szymanski:

Sorry. Hate to say that. These players have brought up on the traditions of Wimbledon. A cynic might say they're brought up on those specifically so that those tournaments can earn rents, right? Maybe that's true. But, tradition plays a role and tradition embeds rent, so it creates barriers to entry. That's the serious point here: a sport without tradition, without a history is not that interesting, right?

Compare this with European soccer. All of the leagues that are competing in Europe, they've been there for decades. It's not that people are tuning in to watch Japanese soccer or major league soccer. That's not really an attraction. It's new and it's not very good and it's not going to be competitive. But the German league, the Spanish League, it can attract fans across borders.

Larry Bernstein:

Michael Lewis in another of his classic books *The Blind Side* highlights the value of the football player who plays left tackle. This is an offensive lineman position that protects the quarterback. And it is such an important role that the best left tackles earn much more than the other players. In soccer, there are huge differences between player compensation. This is a team sport. Should teams splurge and spend most of their money on one or two great players and then have a bunch of other low paid teammates, or should the team pay more evenly and get a much better average player?

Stefan Szymanski:

We still have a lot of uncertainty about how members of a team fit together. Some people argue that you're only as good as the weakest link in the team, and therefore you need to distribute your spending more evenly rather than focusing all your money on the top player.

What is the optimal salary structure, how should you concentrate your resources? I did research on this in soccer and found that teams were better off focusing on the spine of the team, which is the striker, the main midfielder, the main central defender and the goalkeeper. So four out of 11 players and it wouldn't really matter much spending on anybody else.

Larry Bernstein:

In the interview with Paul Oyer on today's podcast, we discussed the game theory of how to defend Michael Jordan. Should players over defend the best players and leave relatively open the worse players in soccer? How do you evaluate the complex dynamics of team sports?

Stefan Szymanski:

This is turning out to be the big problem with data analytics is that how do you simultaneously control the contribution of all the players at the same time?

So, you could imagine that that there would be some teams that would have to put all their defense onto Michael Jordan, but there are some teams where they have such good defenders that you wouldn't need to do that. My sense is that that analytics has made relatively limited progress in sports like basketball and soccer, unlike baseball because you can break down baseball into single events, pitcher versus batter. And it's much easier to understand what's going on.

One of the things that data seems to be showing is that teams should spend more time planning free kicks in soccer. The expected goals from free kicks is ridiculously high if you practice. But the more detailed strategy of movements of the players around the field that's beyond our grasp at the moment.

Larry Bernstein:

What are you optimistic about as it relates to professional soccer?

Stefan Szymanski:

I tell you what I think is great is the rise of women's soccer. Women's soccer is becoming something that will match men's soccer globally in the way that women's tennis matches men's.

Larry Bernstein:

What's driving that success of women's soccer?

Stefan Szymanski:

Women's soccer was deliberately restrained by men for most of the 20th century. And what's changed is that women have forced their way into the market and forced men to recognize their capacity to play the game. Resources are going into women's soccer and they're getting better and better. It's a non-linear process. It's exponentially in terms of the improvement in quality.

Larry Bernstein:

Thanks Paul and Stefan for joining us today. If you missed last week's session, please check it out. Our speaker was Jeff Luhnow the former General Manager of the Houston Astros and the current owner of soccer teams in Mexico and Spain.

Jeff explained how owners use sports analytics to draft and trade players. How they use game theory to improve strategy for penalty kicks. And how to apply metrics to get player buy-in that improves player development. The Moneyball culture changed sports and Jeff will explain what goes on behind the scenes.

The topic for next week switches to Food Porn.

Our speaker will be Rebecca Halpern the writer and director of the new documentary film Love Charlie that will be released in theaters and available for streaming on November 18th. The film is about the life of the famous Top Chef Charlie Trotter who revolutionized American cuisine. Charlie was a creative genius who used a different ten course menu each day for 25 years. He introduced farm to table, the dining table in the kitchen, eliminated hard liquor and foie gras from the menu.

Charlie Trotter influenced many of the great top chefs of his generation and demanded excellence from everyone around him. You will love this conversation with Rebecca about her new documentary masterpiece.

You can find our previous episodes and transcripts on our website whathappensnextin6minutes.com.

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I would like to thank our audience for your continued engagement with these important issues, good-bye.