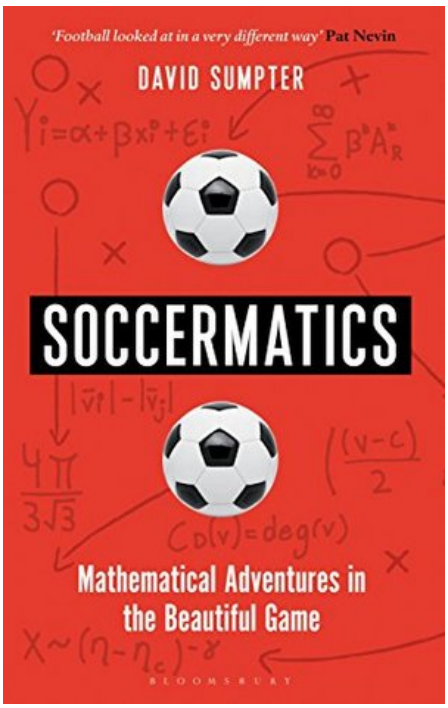

Soccermatics: Mathematical Adventures in the Beautiful Game (Bloomsbury Sigma)

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Soccermatics: Mathematical Adventures in the Beautiful Game (Bloomsbury Sigma) David Sumpter Football – the most mathematical of sports. From shot statistics and league tables to the geometry of passing and managerial strategy, the modern game is filled with numbers, patterns and shapes. How do we make sense of them? The answer lies in the mathematical models applied in biology, physics and economics.

Soccermatics brings football and mathematics together in a mind-bending synthesis, using numbers to help reveal the inner workings of the beautiful game.

How is the Barcelona midfield linked geometrically?
What's the similarity between an ant colony and Total Football, Dutch style?
What can defenders learn from lionesses?
How much of a scoreline is pure randomness and how much is skill?
How can probability theory make you money at the bookies?

Welcome to the world of mathematical modelling, expressed brilliantly by David Sumpter through the prism of football. No matter who you follow – from your local non-league side to the big boys of the Premiership, La Liga, the Bundesliga, Serie A or the MLS – you'll be amazed at what mathematics has to teach us about the world's favourite sport.

Soccermatics: Mathematical Adventures in the Beautiful Game (Bloomsbury Sigma) Details

Date	:	Published May 5th 2016 by Bloomsbury Sigma
ISBN	:	
Author	:	David Sumpter
Format	:	Kindle Edition 304 pages
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From Reader Review Soccermatics: Mathematical Adventures in the Beautiful Game (Bloomsbury Sigma) for online ebook

Erik Surewaard says

This is a book about ‘sports analytics’. Not a novel like Moneyball, but a book more focused on the method side. Clearly something for a math geek like myself;)

I must say that I really liked reading this book. First of all, it is well written. Content wise, you will get an idea on such things like soccer KPI’s, visualizations, prediction models, ...

I learnt quite some interesting ideas and concepts from this book. It also triggered me to read some other content and even purchase some others books.

Overall, I think this book justifies five stars.

Devero says

Decisamente molto interessante e ben fatto, questo libro mostra precisamente la direzione che il calcio sta prendendo in quest'ultimo decennio. Molti i capitoli interessanti, e in particolare, per gli scommettitori, gli ultimi.
Non fatevi scoraggiare dalla parola "matematica" del titolo.
Tre stelle e mezza.

Mellius says

Als data analist en voetballer wekt het onderwerp zeker mijn interesse, maar wat ik erover heb gelezen kan mij niet overtuigen. Dit boek vormt daarop geen uitzondering.?Dat ploegen die veel en snel overspelen vaker winnen, bij voorbeeld, is niet echt een eye opener. De causaliteit ontbreekt steeds volledig.?De analyses lijken mij vooral nuttig voor voetbalsimulaties en minder voor de praktijk. Voor voetbalgames als Football Manager en PES dus.?Verder is het vooral de koe in de kont kijken en daarvoor heb je geen wiskunde nodig. De succesformule van vandaag is de debacle van morgen.?

Jiri Krula says

Úžasná kniha, základní vhled do aplikace matematické analýzy a datové analytiky v sou?asném fotbale. V?ele doporu?uji!

Brian Clegg says

I need to be honest up front - my first reaction on seeing this book was 'Let someone else review it.' I have

zero interest in football, and don't understand why anyone cares about such a dull activity. But then it struck me that what better test could a book have than being tried out by someone without an interest in the theme, and I'm glad I stuck with it, because I really enjoyed it despite myself.

This is because David Sumpter may be using soccer as a hook for mathematical explorations, but the book is far more about the maths than the anything-but-beautiful game. So, for instance, the first chapter begins with the distribution of football results during a season, but quickly expands from that to explore the Poisson distribution and its much wider applications. If it weren't for the deeply irritating introduction, which is sickeningly enthusiastic about football, and a tendency to tell us far too much about players, pundits, teams and managers that mean nothing to me, I would have given the book five stars.

Even the football-oriented parts can be engaging to the non-fan. I don't care if Manchester City is better than Liverpool and I have no idea who Messi is, but when Sumpter abstracts from overpaid individuals and team loyalties, there is some distinctly interesting stuff about, for instance, patterns of flow on the pitch or the way a Mexican wave travels around a stadium. And there was certainly amusement to see that one of the football 'experts' Sumpter criticises predicted that Leicester would be relegated from the premier league in 2015/16, when, just before the book was published, they ended up as champions.

I also found Sumpter's last section really engaging. Here, he spends some time on an experiment to see if the effective use of data and mathematical models can make betting on football games more of a science than an art. Sumpter stresses that gambling is potentially dangerous and that the bookies make sure they come out on top overall - but he demonstrates that with the right mathematical approach you can possible beat the system by a few percentage points. There's almost a feel of the TV series Hustle about this attempt to take on the bookies and beat them at their own statistical game - and Sumpter puts his money where his mouth is, staking the advance for this book (at least, a part of his advance, or he was ripped off by his publisher).

Did reading Soccermatics turn me into a football fan? Absolutely not. I can see the point of enjoying a kick around, but I can't understand why anyone finds football or footballers interesting. However, Sumpter's book has persuaded me that there is a lot more to running a football team than herding musclebound athletes - that, in principle at least (it's not obvious how much teams actually apply these methods) mathematical models can improve team tactics and result in better performance - and that mathematical modelling can be just as interesting when applied to the football pitch as it is when used to analyse the movements of a flock of birds or a shoal of fish.

There may have been a few small sections I had to skip over, when I felt that Sumpter was getting too carried away with his obvious love of the game, but mostly, as the subtitle hints, I enjoyed my mathematical adventures in the 'beautiful' game.

Stephen McGovern says

Absolutely fascinating book that takes a really novel approach to football.

David says

The book opened a completely new field of appreciation of footbal and mathematics to me. The revolition that has happen to footbal scouting and tactics in last ~10 years was completely unknown to me until I read about it in Soccermatics. I suspect next Champions League match viewing will be a different experience for

me.

Helena R-D says

I'm the opposite of many of the other reviewers: I love football and I'm like lukewarm on mathematics. I liked the way he explained things and it was a clever idea.

Ghassan Samaha says

I claim games are benefiting tremendously not just from MaAtH but from physics, as well as Artificial Intelligence.

Kdawg91 says

Once again I dive into one of my current obsessions, soccer. But this time I temper it with something I dislike a great deal, math. Math and I have had a long history of never understanding each other and constantly looking for ways to avoid figuring out our differences. But in pursuit of my new love, I decided to team up with my nemesis to win over the heart and mind of the beautiful game.

(That sounded better in my head) Mr. Sumpter does a terrific job of showing how mathematics applies to the world around us, and by using his love of soccer, he shows the in's and out's of statistics and numbers in the game. He also explains the geometry of formations and how as the game changed, the way it was played changed.

All in all, it deepened my current obsession and is quite the enjoyable read if you are a fan of either subject.

Pete says

Soccermatics: Mathematic Adventures in the Beautiful Game (2016) by David Sumpter is a fine read that looks at how math can be used to explain and improve football. Sumpter is a professor of Applied Math in Sweden who does quite a lot of research helping football teams.

The book looks are how graphs can be used to look at team passing. There is a very well named chapter 'How Slime Mould Built Barcelona'. There is a section on betting markets and strategies that can be used with them. The book also has a section on how statisticians and mathematicians are being employed now by football teams.

The book is well written and has good explanations of the math involved. For anyone interested in the use of math in sport or in football the book is well worth a read.

Chris says

Fantastic book! I only have a mild interest in football and little understanding of mathematics and statistics, yet found this book fascinating. I'd recommend this to any football fan to widen their understanding of the game, but in the same token I would recommend the book to anyone who dislikes football too; reading this book helped me realise how intrinsic mathematics is to football.

Christoforos Nikolaou says

Overall very interesting for both the game's "aficionado" and the mathematically-oriented geek (I consider myself a lot of the first and a bit of the second). It strikes a perfect balance between football and math and manages to explain hard-to-grasp concepts from passing patterns and pressing strategies to how bookmaker odds are defined.

Allen Adams says

http://www.themaineedge.com/style/soc...

One of the things that first drew me into sports fandom was the prevalence of numbers. Professional sports count a lot of things; as a kid with a proclivity for math and a lot of time on his hands, it’s no surprise that I would embrace that side of things.

It was baseball at first – and baseball remains my first love – but my fascination with these numbers slowly grew to encompass other professional sports. The explosion in advanced metrics in more recent times has only fueled that wonky fire that was built so many years ago.

But what if the numbers involved a sport I didn’t much care about? A sport like soccer?

Bringing soccer and math together is the sole goal of David Sumpter’s new book “Soccermatics: Mathematical Adventures in the Beautiful Game.” Sumpter combines a depth of mathematical knowledge and a lifelong love of football to offer up a whole new way to look at the world’s favorite sport.

In Part I – “On the Pitch” – Sumpter spends time exploring the notion of how math can be used to further understand the action on the field. He introduces a number of mathematical models aimed at illustrating the patterns that help make the greatest players great. He also looks in depth at the vast array of measurables scattered throughout the action and devotes time to determining what they mean in terms of on-field value and how individual brilliance can skew predictive methodologies.

In Part II – “In the Dugout” – Sumpter turns his analytical eye onto the tactical side of the game, looking at the sorts of influences that can be exerted by a team’s manager and how their decisions can both directly and indirectly impact a particular game. He also digs into game plans and schemes, as well as the probabilistic effects of these choices.

And in Part III – “From the Crowd” – the author takes yet another step back from the pitch, focusing now on many people surrounding the soccer realm. He explores the nature of fandom and models the social

dynamics of crowd behavior. In addition, he takes a look at the huge gambling industry built around the game and the statistical necessities that come with running book on such a massive sporting enterprise.

You wouldn’t think that heavy math with charts and graphs galore would necessarily be a strong fit with die-hard soccer passion, but the truth is that “Soccermatics” brings the seemingly-disparate worlds together neatly. Sumpter has found the sweet spot between the two, using his love of one to elevate the engaging nature of the other and vice versa.

I have only the vaguest familiarity with soccer – it has never captured my attention – but even a general sports fan with a passing knowledge of the game will see recognizable names. Plus, Sumpter’s love of the game is infectious – it’s impossible not to be drawn in. Add to that the fact that my attraction to the wonkier side of sports never really went away and I’m in. While I may not be onboard with all of the specifics, it’s all quite fascinating in the general sense.

Whether he’s talking about the outlier brilliance of someone like Lionel Messi or the repercussions of managerial decisions or the depths of knowledge plumbed by the gambling establishment, Sumpter brings methods of mathematical understanding to all aspects of the game.

“Soccermatics” is a fascinating book, an intelligent work that strives to reflect the minute intricacies of the game by way of the numbers while never condescending to or overwhelming the reader. Soccer fans and math lovers will be thrilled, but in truth, a general understanding of both is really all you need to enjoy this one.

James says

I really like football. I've studied Maths to a reasonable level. I really liked *The Mixer*, *Soccernomics* and *Inverting The Pyramid*. In theory, this ticks all the boxes, and was very promising based on the concepts. Yet despite some reasonable insights, it felt like the idea of Maths in football came first, and it was up to Sumpter to put try and find some ways to 'explain' football, rather than an enthusiastic blogger who was able to use more resources in putting together a book. There were also some rather basic issues with some of his presentation.

What was commendable was that this did at least approach the subject in a mathematical fashion, and generally avoided the trap of showing off the maths for something that could be explained much more simply. Sumpter did have to win me over however, as the opening was rather tedious. One such example was a lengthy description about a simple piggy in the middle, another was using a simulation that proved a defender could stop an attacker getting to the goal-line first, provided the defender's starting position was closer to the line than the attacker. There is a place for this sort of maths, but I didn't feel it added a lot to an accessible work on maths in football, and gave me a negative impression from the start. He also made questionable assertions, such as goals being independent events (whereas I have read that goals are more likely a)later in the match and b)if more goals have been scored in the match previously).

The other significant weakness was using individual matches as an attempt to justify certain ideas, with a triumphant sounding phrases like 'and Italy went on to win this game 2-0,' only missing Point Proven tacked on the end. Sumpter knows statistics, and on the betting section later on, he even alludes to individual matches involving a lot of luck. Yet earlier on there are diagrams of passing networks in individual matches presented as significant in deciding a match. One match is 'noise' in the world of stats, and using a higher threshold for mimimum passes for an unsuccessful England side, compared to a lower threshold for a more successful USA side, felt like manipuating the stats to fit a narrative, the opposite of good statistical testing.

He also uses the extreme value theorem to calculate how rare Messi's season goal tallies are, extrapolating rather than interpolating, which is less robust in statistical testing.

There were some genuinely interesting insights however, particularly the effect that leaders of the team have on other players - teammates will physically follow the natural leader in terms of positioning, which is more than just a good leader being a motivator. There were mathematical analyses of the creation of space in attack, explaining the theory behind the consensus of how to be successful. Convex hulls seemed at first to be a bit of a gimmick, but if they can mathematically show the influence of Carlos Tevez off the ball, they demonstrate it is more than just an error in perception, and might also show a player's defensive influence that isn't as obvious to the naked eye.

Yet something early in the book led me to question whether maths really can be used by performance analysts to change the game. Sumpter talked about the movements of fish being purely instinctive, but the most effective way of dealing with predators. Perhaps the top footballers are like those fish, operating instinctively but in a way that maximises effectiveness, and it remains to be seen just how effective the performance analysts can be in changing the game.

I wonder whether the lack of novelty was what I found disappointing, and that had an unreasonable expectation of how insightful this might be to someone familiar with these ideas - keen historians may not be so enamoured by a neat introduction to World War Two. But the frustrations were more than just boredom, it felt like Sumpter had relaxed his mathematical rigour to write a book that was readable, rather than robust. And when he speculated why using a tweaked ELO ranking couldn't beat the bookies, I felt like screaming 'BECAUSE THEY USE A MODIFIED ELO SYSTEM TO CALCULATE WIN PROBABILITIES TOO!' (it could be they don't, but it seems pretty likely)
