

Review of
Calculated Bets¹
by Steven Skiena

Published in 2001 by Cambridge University Press, \$12.60, 262 pages

Reviewer: William Gasarch

Very few of us can turn our non-mathematical hobbies into papers or books. I doubt that Steven Rudich will get a paper out of his ability to do magic tricks, even though he is quite good at it (I've seen him at CRYPTO 01 and some DIMACS workshops. Catch his act!) I doubt I will get a paper from collecting Novelty Songs (Check out my website of *Satires of The 12 Days of Christmas* which gets far more hits than my website of *Applications of Ramsey Theory to Computer Science*). Steven Skiena has managed to get a book out of his hobby. His hobby is watching and gambling on the sport of Jai-Alai.

The book has three threads of information (1) the sport of Jai-Alai and how one gambles on it, (2) the mathematics underlying sports and gambling, (3) the story of Steven Skiena's interest in mathematics and in sports and how they have come together at various times in his life. All three are interesting, though of course the mathematics in it is why it is getting reviewed in this column. The book is well written and interesting. Even the non-math parts should interest anyone who picks it up. The math is well explained.

The scoring system in Jai-Alai is unusual. Initially 8 players are ordered in a queue (p_1, \dots, p_8) . The top two in the queue play. The winner gets a point and stays at the head of the queue. The loser goes to the end of the queue. The first player to get 7 points wins. A player's chances of winning is determined partly by his initial post position. His abilities also play a part. Which is the bigger factor? Can we use the inequity in post position to help us gamble on the game?

These types of questions, and others, are raised and answered. While raising them he takes the reader through a tour of much mathematics of interest, mostly within probability, statistics, mathematical modeling, and computer programming. He also tries (with moderate success) to actually use his system to bet and win. His attempt will wake people up to how real world constraints can get in the way of an elegant mathematical theory.

This book *should* have a wide audience. A high school student who likes mathematics and sports will find much here of interest, though some of the math may be over her head. An undergraduate who likes math should like it even if she doesn't like sports. Even a grad student or professor would benefit from it since, even though the math is easy, some of it is not well known. In addition the information on Jai-Alai and other non-math topics will be of interest.

If you find yourself teaching a math-for-non-majors course of some sort, this book might be ideal. The key is that all the math here is motivated by solving a real world problem, and that has a certain appeal.

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