consummate insider, Judge Richard Posner. For example, in discussing the increase in active questioning, the book does not shy away from opining:

> With the replacement of Souter by Sotomayor and Stevens by Kagan the Justices' volubility has become remarkable: the lawyers have trouble getting a word in edgewise. . . . Once several Justices emerge as active questioners, observers begin to wonder whether those who do not ask many questions are reticent because they can't keep up with the fast question-and-answer pace set by the active ones; thus Thomas's near complete silence at oral argument (he hasn't asked a question in years) has raised questions about his capacity (p. 314).

It is Posner, I believe, who tells us, "Judicial confirmation hearings are a farce in which a display of candor would be suicide" (p. 51). Particularly, it is Judge Posner, one of the few federal judges who drafts his own opinions, who tells us, "The literary culture in America is moribund. Writing ability is not highly admired" (p. 396). When he says, "[i]mportant people, other than academics and professional writers, are not expected to write what is published under their name" (p. 396), he is most pointedly including the judiciary as part of the new illiterati. These asides, from our generation's most Holmesian figure, provide independent grounds for reading this book.

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Analyzing Wimbledon: The Power of Statistics. By Franc Klaassen and Jan R. Magnus. Oxford and New York: Oxford University Press, 2014. Pp. xvi, 252. Paper. ISBN 978–0–19–935595–2, cloth; 978–0–19–935596–9, pbk.

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Analyzing Wimbledon: The Power of Statistics sets out to "encourage people interested in tennis to learn more about tennis and (as a bonus) learn some statistics." It accomplishes this goal and more. First, it illustrates the process of using data to understand a question of interest—start with simple summary data, build a basic empirical model, and then parsimoniously elaborate the model in order to control for possible confounds or obtain a deeper understanding. Second, it illustrates the use of conceptual models to organize thinking about the data and to formalize the hypothesis of interest. While the focus is on tennis, the book is broadly useful to anyone learning about how to use data to better understand behavior. It is nicely written, well organized, and thoughtful.

The book is organized around twenty-two hypotheses about play in tennis. The hypotheses include, for example, "It is an advantage to serve first in a set," as well as a variety of others related to whether each point is played as it comes or whether play depends upon the past, e.g., the score, or some other characteristics of the current point.[1] The results also shed light on the effect of gender, and differences in play between seeded and nonseeded players.[2] The main data

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[1] Walker, Wooders, and Amir (2011) introduce a class of games they call Binary Markov games, which includes tennis, and show that Nash equilibrium (and minimax play) calls for the players to ignore the current score.

[2] A seeded player is a highly ranked player whose position in the tournament is arranged so as not to meet another highly ranked player early in the tournament.

set is from Wimbledon 1992–95, both men's and women's singles matches, comprising a total of 481 matches and 88,883 points. To illustrate the analysis in the book, we focus here on two issues: the effect of serving first and effect of the importance of a point.

Consider whether there is an advantage to serving first in a set. It is sometimes argued that there is such an advantage, since the server typically wins the game and thus, the first server is typically one game ahead. At first glance, there appears to be no advantage—overall, 48.2 percent of the sets played in men's singles are won by the first server. Digging deeper reveals that the first server in a set wins 55.4 percent of the sets when it is the first set, but wins only 44.3 percent, 43.5 percent, 51.0 percent, and 48.8 percent of the subsequent four sets. As the authors note, these frequencies are misleading, since they ignore quality differences between the players. In particular, the player who wins the last game in a set tends to be the stronger player, and thus the first server in any set (except the first set) tends to be the weaker player.[3] One can control for quality differences by conditioning on the outcome of the prior set: A player who won the first set, for example, wins the second set with a frequency of 72.5 percent if he serves first and 68.0 percent if he receives first—a difference that is statistically insignificant. This analysis nicely reveals that taking careful account of the structure of a tennis match (or the strategic interaction more generally) and controlling for quality differences is essential to drawing correct conclusions.

And what of the first set? Surprisingly, there is an advantage to serving first in the first set. In men's matches, when serving first, the server wins 67.8 percent of all points in the first game of a match, but wins only 64.4 percent of points in the match (excluding the first set). The difference of 3.4 percent is statistically significant. Women, likewise, enjoy a statistically significant higher frequency of winning points in the first game when serving in the first set. These results are robust, as the authors show, to a more sophisticated analysis that controls for quality differences and unobserved heterogeneity between the players.

The authors' analysis of whether important points are played differently is especially nice in illustrating the power of careful consideration of the strategic situation and careful data analysis. To address this question, one must first make it precise—what exactly does it mean for a point to be important? In a match between players i and j, suppose p_i (p_j) is the probability that player i (j) wins a point when serving. Assuming that points won are i.i.d., then for any given score, one can compute the probability that player i ultimately wins the match. The importance of a point is then naturally defined as the difference between the probabilities of winning the match when the current point is won versus when it is lost.[4] Important points then are those that have a large impact on the probability of winning the match.

Estimating the effects of the importance of a point requires controlling for observable and unobservable quality differences among players. The authors carefully build a framework for thinking about observable quality differences and then provide a clever quality measure. They establish that there is an S-shaped relationship between the probability p_i that player i wins a match and the difference of his and his opponent's Association of Tennis Professionals (ATP) ranking. Thus, quality is a pyramid: a given increment in p_i corresponds to larger and larger differences in the players' rankings, and thus to more and more players. The authors form an adjusted quality measure based on the round a player is expected to reach in a (single elimination) tournament and show that there is an approximately linear relationship between the probability that a player wins a point and the difference of his own and his opponent's adjusted quality.

Estimates obtained using the generalized method of moments (GMM) show that the importance of a point has no impact in men's matches on the probability that the server wins the point, but in women's matches the server is *less* likely to win important points. However,

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[3] In tennis, the serve alternates from one player to the next between games.

[4] This definition of the importance of a point is due to Morris (1977).

men and women are both more likely to win the current point when they have won the prior point.

The books provide a nice, but informal description of GMM, which is the main method of estimation and inference. The book clearly demonstrates the usefulness of statistical methods in understanding data, but the reader interested in learning and applying the statistical methods used here will need to look elsewhere.

It also provides an elegant decision-theoretic model of the optimal service strategy which, when combined with the data, is used to conclude that the players' service strategies are nearly, but not fully, efficient. The book does not emphasize the application of game theory to tennis. Data from professional tennis, for example, has provided the strongest support to date of the empirical validity of the notion of minimax play and its generalization to (mixed-strategy) Nash equilibrium (see Walker and Wooders 2001).

Data from professional sports is well suited to studying strategic behavior. In contrast to many situations of interest to economists, in sports the rules of the game are clearly defined and the data generated is accurately recorded. Moreover, professional sports players devote their lives to the game and are highly incentivized. Tennis is particularly well suited to study, since a match takes place over a short period of time, between a fixed pair of players, and a large number of points are played (typically over 200 in a men's match).

The examples discussed above illustrate just a few of the hypotheses investigated in *Analyzing Wimbledon*. A subsection on further reading is provided at the end of each chapter, and thus the book also provides a comprehensive survey of empirical research on tennis. The book is a valuable and interesting read for the tennis aficionado or anyone interested in statistics and strategy in sports.

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In *Shaping Jazz: Cities, Labels, and the Global Emergence of an Art Form*, Damon Phillips takes on the ambitious task of exploring the diffusion mechanisms of this uniquely American art form. Phillips combines a variety of methodological approaches with unique data sources to form and test hypotheses about the geographical origins of early jazz recordings, the frequency of rerecordings, notions of connectedness and disconnectedness of major jazz cities, and the role of record labels. The book melds archival data, oral histories, newspaper and magazine articles, critical reviews, and essays into a comprehensive treatise on the formation and diffusion of jazz's recorded history. The author should be commended on the depth and scope of the work.

Phillips discusses new notions of social disconnectedness and hypothesizes that the popularity of an original jazz recording (as measured by the frequency with which it is rerecorded) is positively correlated with how disconnected the origin city is from other major jazz cities during the twentieth century. He tests this hypothesis using regression analysis and concludes this to be the case. The cornerstone of the regression analysis is the author's novel approach to quantifying disconnectedness, which is based on the mobility of bandleaders across cities. However, this reviewer thought it odd that the details of the measure are not provided in book; the reader is simply referred to the author's other work for specifics. Another shortcoming of the analysis is that identification is never discussed in earnest. In particular, it is not clear (nor is it directly argued) that musician mobility and the frequency of rerecording are not simultaneously determined. Finally, the author