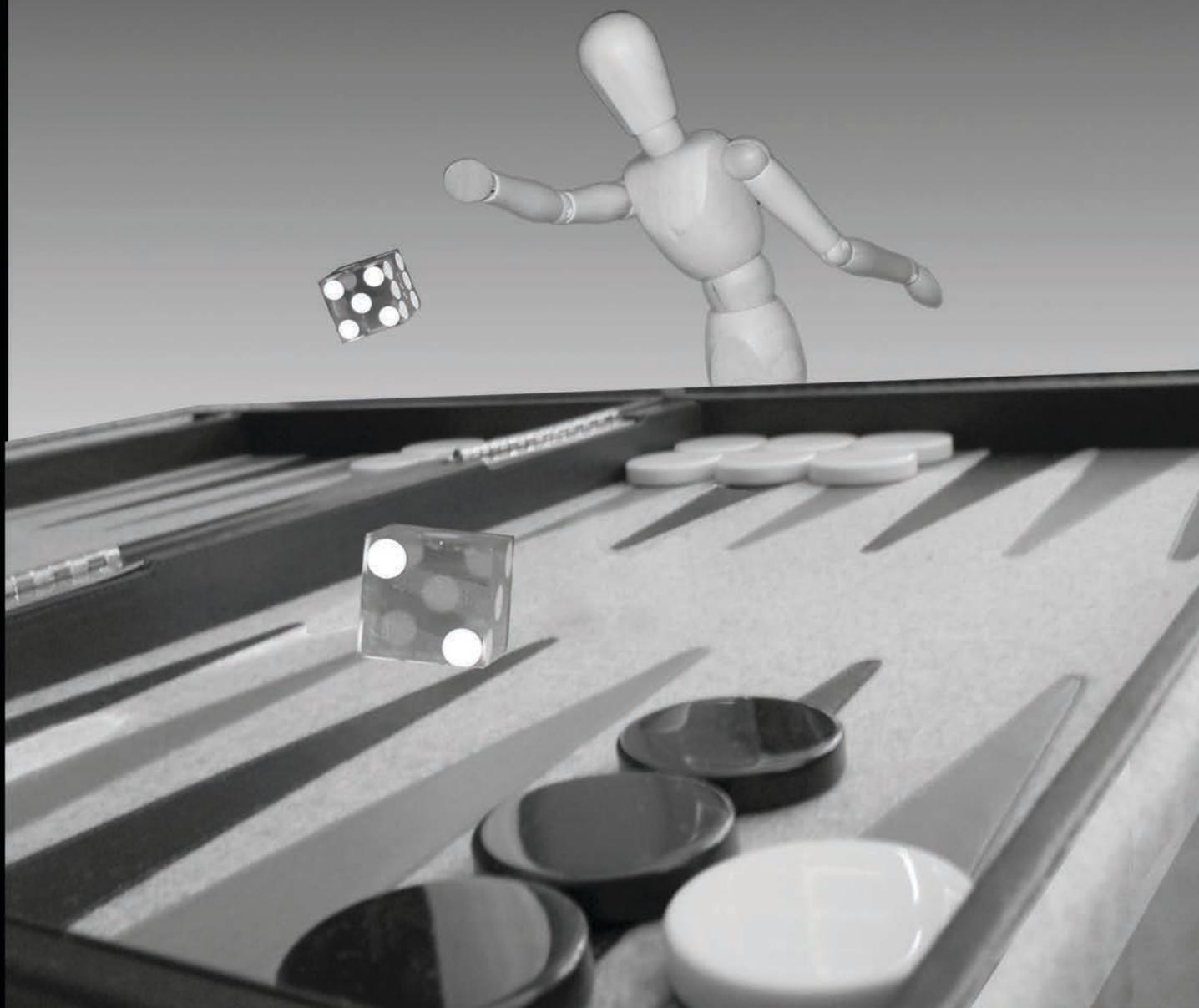


IN THE GAME UNTIL THE END

VOLUME II

Ace-Point Endgame Analysis – the Next Generation

ROBERT WACHTEL



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Ace-Point Endgame Analysis – the Next Generation

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A U.S. BACKGAMMON FEDERATION BOOK

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Introduction

Twenty-odd years ago, in 1992, I found myself living in London with very little to do. My career as an options trader on the Philadelphia Stock Exchange had hit the skids, and I'd gone seeking fresh opportunities in the European markets. But nothing much had materialized, and after a few months' grace period I'd even been barred from the local backgammon club, the Doubles Fives. Its gentile proprietor explained to me that I was "too good" for his customers—which meant that I was siphoning off too much of the free money he was accustomed to collect from them.

I decided, in my abundant leisure, to write an unusual kind of backgammon book. I had spent much of my callow youth as a chess player; but an American chess player—which meant, unless you were Bobby Fischer, that you would never achieve anything on the international stage. The "Soviet school" of chess, renowned for its strict discipline and advanced training techniques, dominated that market. While the Russians produced grandmasters by the dozen (confirming, for propaganda purposes, the superiority of their system) we American teenagers dithered and meandered, following our intellectual appetites like children gorging themselves on ice cream and candy.

Our ice creams and candies were the exciting, complex openings and middle games that our heroes navigated so dashingly; but those treats left us with little appetite for plain fare: the tedious endings that resulted when neither side had been able to achieve a decisive advantage in the early stages of the game.

Perhaps it was just a subcultural urban legend, but I remember believing that the Russian teachers made their young charges learn the game backwards. Before he was allowed to even look at an opening or middle game, a Soviet disciple had to learn his endings. His lessons began with the simplest positions (king and pawn), and it was not until he had reached some competence in those that his teachers grudgingly placed another piece or two on the board. Having proved himself at this next level, he would be allowed a little more complexity. By the time this process reached the middle game, the student had a grasp of the atomic chemistry of chess that no self-taught American player could dream of attaining. This deep knowledge of "technique" would allow him quite often to recursively proceed in his planning: having arrived at an advantageous middle game, he could consciously strive to convert it into a familiar, solved ending. As his reverse

education continued, he would be taught how to segue from advantageous openings into familiar, solved middle games. His last step (our first!) would be to look for clever ways to gain an advantage in the opening.

Despite our indiscipline, we knew what we were missing. The vast literature of chess contained any number of endgame books, even if most were written by Russians. If you wanted to compete with the best, you had to master the information contained in those works.

Ever since I had discovered backgammon in 1977, I'd been struck by the fact that its theory was far less developed. There were no systematic studies of anything: no monographs on (for example) the 6-1 opening, identifying the best replies and surveying the game plans that would typically develop thereafter; no in-depth analyses (for example) of 22-point holding games; no treatises on cube handling against back games; and not a single endgame book or pamphlet.

Given my background, this last deficiency seemed the most glaring; and I now saw in it an opportunity to satisfy my own curiosity while beginning to establish for backgammon a chess-style knowledge base. My backgammon book would be the game's first dedicated endgame study—starting, of course, from the final moments of contact: the class of money-game (or early long-match) positions, including the famous “Coup Classique,” which arise as the last residue of a well-timed ace-point game. In these dramatic situations, where the side bearing off has only a few checkers left, the ace-point side is constantly faced with stressful “stay or go” decisions. To simplify my task, I chose the purest, the most “theoretical” cases: those in which the ace-point side had a full, outside prime, owned the doubling cube, and had absolutely no chance to run off the gammon.

My methods were, by today's standards, positively Stone Age: I used a combination of hand calculations, hand rollouts, and hand-to-hand combat results (most of them derived from high-stakes propositions which had been played for weeks or months at New York's old Mayfair Club) to assemble equity flow charts originating from the positions I had chosen. In fond memory of the mantra of a long-extinct species of backgammon gambler, I called my monograph *In the Game Until the End* (henceforth: IGUE or Volume 1).

Once I had completed IGUE, momentum swept me along the recursive path. I applied myself to the next, more complex level of contact bearoffs. The work required was considerable, but within a year I had Volume II almost ready for the printer. But then (in 1994) the bots arrived: Jellyfish first, then Snowie. If I was (to flatter myself) John Henry, they were the steam engines. Accurate and indefatigable, these analysis programs cranked out in a few minutes rollouts and calculations that had taken me days or weeks to finish. The future did not look pretty: I imagined that there would presently appear any number of scathing (or pitying, it did not matter), bot-powered reviews of my work and a host of studies surveying, with majestic certainty, territory far beyond that covered by the problems I was now addressing. My research had been rendered irrelevant. I put it on the shelf.

But backgammon knowledge has not evolved as I thought it would. The fantastic labor saving offered by the analysis engines did not, for some reason, inspire the kind of focused research that chess has enjoyed since the beginning of the 20th century. I eventually came to the conclusion that if I didn't write "Son of Ace Point," it wouldn't get done.

Still, there would not have been much point to embarking on this project were I not to employ the best technology available. That meant using eXtreme Gammon (XG), the strongest and most popular contemporary bot; and it meant that I would need rollouts—the deeper and longer the better—of every play and cube decision. That necessity, after consultation with the top U.S. player Neil Kazaross, led me to acquire one of the better Intel i7 chips, and to ask him and the L.A. expert Steve Sax to help with the grinding. They kindly obliged; and Neil, who works closely with eXtreme Gammon developer Xavier Dufaure de Citres, also gave me valuable advice about which settings to employ to obtain significant results. Most of the routine positions, consequently, were rolled out with these parameters: XG Roller+ for checker plays, XG Roller+ for cube decisions, a "huge" search space, variance reduction, and between 1296 and 10000 trials. But I would still not have been able to bring some of my inquiries to an acceptable conclusion had not Xavier and Neil, when the current version of XG (XG2) was not up to the task of analyzing some particularly exotic positions (Chapter 6), lent me a pre-beta form of version 3 (XG3), which did the job quite nicely.

If I had initially conceived my goal as simply that of extending the findings of Volume 1, I quickly realized that those results first needed some serious revision. True, my gross conclusions had (as I had immodestly stated for years) survived "the bot test"—but that was despite the fact that there were a host of inaccuracies and misjudgments lurking in the details. Chapter 1, "*In the Game Until the End* in Retrospect," then, is all about setting the record straight. With a solid, neural-network-validated foundation (XG2 rollouts, and XG3 rollouts of some crucial positions) finally in place, it is off, in the subsequent chapters, to conquer new lands. Even so, I feel obliged to caution the reader that I do not view this volume's findings as in any way final or definitive. They are, instead, just reflections of the technology at my disposal, and are naturally subject, with the inevitable advent of better bots and faster processors, to substantive revision. By the same token, I have designated the rollout results for a handful of problems you will encounter in the following pages "inconclusive" or "too close to call." By that I don't mean that I couldn't extend those rollouts until XG declared one decision or the other a clear winner—rather that I don't have the confidence that that exercise would achieve anything particularly meaningful.

*“In January 2012, while giving a lecture at the New Mexico Championships in Santa Fe, I encouraged Bob Wachtel (who was in the audience) to finish the update/sequel to his classic 1993 book, *In the Game Until the End*. Bob took my suggestion to heart, so I feel like the godfather of this brilliantly composed study. Backgammon knowledge, like scientific understanding, is built in increments; and Bob’s work in this volume has finally provided us with a solid foundation for a much-neglected aspect of the game.”*

~ **Neil Kazaross**, 6-time American Backgammon Tour champion and all-time ABT points leader

“My buddy Bob Wachtel has done it again. His first book covered positions that nobody understood at the time. I read it, and it helped me win money and tournaments. I have the feeling that this one is going to do the same. The endgame is important. Don’t neglect it. Study Bob’s book and your endgame will certainly improve.”

~ **Mike “Falafel” Natanzon**, perennial “Giant of Backgammon”

In 1993 the international backgammon community was presented with a unique research report. Authored by the American expert, Robert Wachtel, *In the Game Until the End* set out to address the critical “stay or go” problems that arise at the 11th hour of a well-timed ace-point game.

This project was an extraordinarily ambitious one, for a proper solution to those questions required the resolution of some very thorny issues of fundamental backgammon theory – and, like all explorers of his era, Wachtel had no analysis programs to rely upon. His methods, instead, were part science and part art. He rolled positions out by hand, gathered data from other experts, extrapolated, analogized, and calculated. His results have hardly been challenged in the 20-year interim. But that, of course, does not mean that they are, by today’s standards, accurate.

This second volume of *In the Game Until the End* is both a revision of and a sequel to that early, landmark work. Employing the contemporary professional’s analysis program of choice, extreme Gammon 2 (XG2), Wachtel vets his prior

investigations with extensive, high-level rollouts. He then employs the same cutting-edge tools to extend his research to ace-point problems of increasing complexity. But this is not another of those “because the bot says so” tracts. Always probing for the principles underlying the results, the book’s later chapters are studded with puzzles, oddities, and anomalies that demand – and receive – thoughtful interpretation.



ABOUT THE AUTHOR

Currently #8 on the peer-ranked survey, “The Giants of Backgammon,” Robert Wachtel has been one of the backgammon world’s elite players for the last 30 years. He is the author of a book on ace-point endings, *In the Game Until the End* (1993), and more than 40 articles on the game. Robert is the editor of the U. S. Backgammon Federation’s bimonthly magazine, *PrimeTime Backgammon*.



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