

What's the point of it all?

by Gary Horvath



Tennis players, coaches, professionals and announcers often talk about how a match hinged on just a few key points. Do you know the percentage of points you win and lose when you play a match?

In the 1995 French Open, Michael Chang won an excruciating semifinal match against Sergi Brugera. Chang was perfect in terms of sets won, winning all three of the sets played. His percentage slipped drastically, though, as he only won 55.56 percent of the games played (20 out of 36). In terms of points won, Chang captured only 51.36 percent of the points played (113 out of 220). If Chang had won three fewer points, he and Brugera would have won the same number.

As illustrated in this example, the probability of winning a point, game, set and match are substantially different. A player with a 25 Tencap has a better chance of winning a single point from Steffi Graf or Pete Sampras than they do of winning a match against them.

A better understanding of the value of *one* point can be gained by more closely examining Markovian chains as they apply to the tennis scoring system. My introduction to Markovian chains came from fellow USPTA professional Alex Dorato in the early 1980s. He and his father applied the studies of fellow mathematicians on the theory of Markovian chains to the probability of winning a tennis match.

Most tennis players have never heard of Markovian chains and fewer would understand their derivation. The good news is that they won't have to calculate their derivation as a means of better understanding how to cope with

losing on the court. All they need to know is that the theory determines probabilities of winning an event based on the method of scoring.

By looking at the table below, we can begin to see how just a couple of points can impact the outcome of a match. As might be expected, if a player wins 50 percent of the points, he will win 50 percent of the games, 50 percent of the sets and 50 percent of the matches (column 1).

A player who can win 55 percent of the points increases the probability of winning a game to 62.3 percent. The probability of winning a set becomes 81.5 percent and the probability of winning the match is 91 percent. The unique scoring system used in tennis allows a player to win slightly more than half the points, but win the match by a decisive score.

By reviewing the possible scenarios from this table, it is easy to see that every point can theoretically have a significant impact on the match. When players are closely matched, or have Tencaps within 7 points of each other, the winning player will often win less than 55 percent of the points played. This was particularly evident in the previously mentioned Chang match.

An understanding of this is important to tennis professionals in helping their students establish productive practice sessions, develop their mental games, improve their techniques and strategy implementation and improve the tracking of goals and match play. By developing a discipline in which you focus on each point, it will suddenly become very easy to pick up several points a set — and these points can be quite important. *∞*

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Probability table <i>(based on Markovian chains)</i>												
Situation	Percentages											
Point	.500	.510	.520	.530	.540	.550	.560	.570	.580	.590	.600	.650
Game	.500	.525	.550	.575	.599	.623	.647	.670	.693	.714	.736	.830
Set	.500	.571	.640	.705	.763	.815	.859	.895	.924	.947	.963	.996
Match	.500	.606	.705	.790	.859	.910	.946	.969	.984	.992	.996	1.000
<i>(2 of 3 sets)</i>												