

Could Roger Federer Have Won More Grand Slams With an Alternate Scoring System?

By
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Federer has won more men's singles grand slams than any other player with a total of 20 and is still competing on the tour. However, Roy Emerson (even though won less singles grand slams than Federer with 12), has won the most number of men's grand slams with 28 (12 singles and 16 doubles). Mixed doubles is also played in grand slams. Further, John Newcombe (26 total grand slams), Bob Bryan and Todd Woodbridge (23 total grand slams despite winning no singles slams), Frank Sedgman and Mike Bryan (22 total grand slams) and Bill Tilden (21 total slams); have also won more grand slams than Federer at this period in time.

https://en.wikipedia.org/wiki/List_of_Grand_Slam_related_tennis_records

It could be argued that there is just as much skill in being a top singles player as well as being a top doubles player. One of the problems with observing doubles titles is that great singles players nowadays tend not to play in grand slam doubles (or mixed doubles) events, to conserve energy for the main singles draw. This is reflected by the scoring system with men's singles matches playing best-of-5 sets with many matches known to go for at least 5 hours (and the longest match going for 11 hours and 5 minutes between Isner and Mahut at the first round in the 2010 Wimbledon Championships with Isner winning 70-68 in the final advantage set). Note that Wimbledon now play a tiebreak game at 12 games all in the final fifth set. This occurred at the final of the 2019 Wimbledon Championships between Federer and Djokovic, with a match duration of still 4 hours 57 minutes. In comparison, women's singles grand slam matches are the best-of-3 sets, which would significantly reduce the length of matches compared to men's tennis. This would allow women to more likely compete in grand slam doubles (and mixed doubles) events. Serena Williams for example who is currently competing on the tour has won 39 grand slam titles - 23 in singles, 14 in women's doubles, and 2 in mixed doubles. Martina Navratilova has won the most number of combined singles and doubles titles with 49, (compared to Margaret Court with 43), but Margaret Court has won the most number of total grand slams (combined singles, doubles and mixed doubles) with 64 (compared to Navratilova with 59).

Federer being an effective serve-and-volleyer as demonstrated by his success in singles would suggest that he could be a successful doubles player (where serve-and-volleying has been a recognized successful strategy in doubles). Federer's results in doubles also back up his success as a doubles player by winning the Miami Tennis Masters Series in 2003, CA Tennis Trophy Vienna in 2003, Gerry Weber Open in Halle in 2005 and most impressively the Olympics in Beijing in 2008. Federer has only competed in two grand slam doubles events, the Australian Open in 2003 losing in the third round and the Australian Open in 2004 losing in the first round; despite competing in 78 grand slam singles and winning 20.

The underlying issue of changing the scoring structure in men's grand slam singles (to say best-of-3 sets) is you could potentially reduce the chances of the better player winning (hence reducing the chances of a top men's player winning grand slam titles even though they could potentially compete in doubles grand slam titles). So the question is can you change the scoring structure in men's singles grand slams to reduce the length of matches and still obtain the chances of the better player winning under the current scoring system (and even further still keep tradition of the history of tennis scoring systems)?

System	Event	Games	Early Sets	Final Set	Match
1	US Open women's singles Aust./French/US Open women's doubles Aust./French/US Open men's doubles Olympics men's and women's singles Olympics men's and women's doubles Men's and women's singles	Deuce	Tiebreak First-to-7 points tiebreak game	Tiebreak First-to-7 points tiebreak game	3 sets
2	Australian Open women's singles	Deuce	Tiebreak First-to-7 points tiebreak game	Tiebreak First-to 10 points tiebreak game	3 sets
3	French women's singles	Deuce	Tiebreak First-to-7 points tiebreak game	Advantage	3 sets
4	Aust/French/US Open mixed doubles Olympics mixed doubles	Deuce	Tiebreak First-to-7 points tiebreak game	First-to-10 points tiebreak game	3 sets
5	Men's and women's doubles	No-ad	Tiebreak First-to-7 points tiebreak game	First-to-10 points tiebreak game	3 sets
6	US Open men's singles	Deuce	Tiebreak First-to-7 points tiebreak game	Tiebreak First-to-7 points tiebreak game	5 sets
7	Australian Open men's singles	Deuce	Tiebreak First-to-7 points tiebreak game	Tiebreak First-to 10 points tiebreak game	5 sets
8	French Olympics men's singles (Gold medal)	Deuce	Tiebreak First-to-7 points tiebreak game	Advantage	5 sets
9	Wimbledon women's singles Wimbledon women's doubles Wimbledon mixed doubles	Deuce	Tiebreak First-to-7 points tiebreak game	Tiebreak First-to-7 points tiebreak game at 12 games-all	3 sets
10	Wimbledon men's singles Wimbledon men's doubles	Deuce	Tiebreak First-to-7 points tiebreak game	Tiebreak First-to-7 points tiebreak game at 12 games-all	5 sets

Table 1: Current scoring systems used in men's and women's singles, doubles and mixed doubles

Table 1 lists the current systems used in men's and women's singles, doubles and mixed doubles matches. Note the No-Ad game that is used in men's and women's doubles on the

main tour. In the No-Ad game the next team to win the point once the score reaches 3 points-all wins the game. Also note that only the French Open play a final advantage set in men's singles grand slams (whereas all men's singles grand slams used to play a final advantage set).

The fundamental problem with the current scoring system in men's grand slam singles matches is the deuce game is very "inefficient". Some games can last for 25 minutes. The 50-40 game where the server has to win 4 points and the receiver has to win 3 points is very "efficient". At most only 6 points are played in such a game.

	Deuce game	No-Ad game	50-40 game
10-10	79.5%	69.0%	29.7%
20-20	63.0%	47.3%	8.0%
30-30	49.9%	32.4%	2.2%
40-40	39.6%	22.2%	0.6%
50-50	31.4%	15.2%	0.2%
60-60	24.9%	10.4%	0.0%
70-70	19.7%	7.1%	0.0%

Table 2: Chances of reaching x-games all in an advantage set across three different game structures and the probabilities of both players winning a point on serve is 83%.

Table 2 gives the chances of reaching x-games all in an advantage set across three different game structures and the probabilities of both players winning a point on serve is 83%. Note this is the most extreme case with the aim that an advantage final set can last for hundreds of years. Note the chances of reaching 70-all for the deuce game of 19.7% and the No-Ad game of 7.1%. Whereas for the 50-40 game players won't get anywhere near 70-all. In the 11 hour Isner Mahut match both players were winning 77.2% and 81.9% of points on serve in the final set. Note that in the final set of the Isner vs Mahut match, there was 2.9% chance of reaching 69 games-all in the advantage final set. Refer to section 8.4 in <http://strategicgames.com.au/book.pdf> for a full analysis of the Isner vs Mahut match. Also, it could be argued that playing a 11 hour match could have health affects on the players. Hence by playing a 50-40 game, an advantage final set is still realistic which is keeping the tradition of the game (an advantage final set is not possible under the Deuce or No-Ad game as the chances of a 'long' final set is quite realistic).

	Deuce game	No-Ad game	50-40 game
0.5	95.7%	93.1%	95.5%
1	26.3%	11.0%	9.2%
1.5	0.1%	0.0%	0.0%
2	0.0%	0.0%	0.0%

Table 3: Chances of reaching x-hours in a tiebreak set across three different game structures, the probabilities of both players winning a point on serve is 50% and the average time for a point played is 12 seconds.

Table 3 gives the chances of reaching x-hours in a tiebreak set across three different game structures, the probabilities of both players winning a point on serve is 50% and the average time for a point played is 12 seconds. On clay players can average only 50% of points won on

serve. Also, players on clay average about 12 seconds to play a point. Note that using the deuce game there is a 26.3% chance of a tiebreak set reaching 1 hour and 0.1% chance of a tiebreak set reaching 1.5 hours. There are actual tiebreak sets under the deuce game that have gone for 1.5 hours. Using the 50-40 game the chances of reaching 1 hour are significantly reduced to only 9.2%.

	Deuce game	No-Ad game	50-40 game
55%, 50%	80.0%	77.2%	75.4%
65%, 60%	78.9%	76.9%	76.4%
75%, 70%	77.2%	76.7%	77.5%
85%, 80%	78.0%	78.4%	79.7%

Table 4: Chances of winning a best-of-5 set match with a first-to-7 point tiebreak game played at 6 games-all in early sets and an advantage set played in the final set played across three different game structures for different probabilities of players winning a point on serve.

Table 4 gives the chances of winning a best-of-5 set match with a first-to-7 point tiebreak game played at 6 games-all in early sets and an advantage set played in the final set played across three different game structures for different probabilities of players winning a point on serve. Note that this scoring structure typically applies to the French and Wimbledon men's singles where player's on serve are often around the 70-75% range. Note that under the deuce game there is 77.2% chance of the better player winning, under the No-Ad game this is reduced to 76.7% but for the 50-40 game this percentage is increased to 77.5%.

Hence, the above has shown that the advantage final set can still be played using the 50-40 game (keeping tradition), significantly reduce the length of sets and for certain probabilities of winning points on serve such a 75% and 70% (as typically applies in men's singles tennis) the chances of the better player winning the match is actually increased in comparison to the current deuce game. Therefore, replacing the 50-40 game in men's singles grand slam matches would encourage top singles players to compete in grand slam doubles (and mixed doubles) events and player's such as Federer could have potentially won even more grand slams based on his record in doubles matches. Similarly, replacing the 50-40 game in grand slam doubles and mixed doubles events would also reduce the length of matches and still keep the probability of the better player winning the match being roughly equivalent, which would also benefit top singles players.

The following three scoring systems are proposed for all men's and women's singles, doubles and mixed doubles events, which reduce the current scoring systems of 10 to just 3 as given in table 5. Note that the 50-40 game is used in all events allowing for consistency and for players to adjust to this one game structure.

System	Event	Games	Early Sets	Final Set	Match
1	Grand Slam mixed doubles Olympic mixed doubles Men's doubles Women's doubles	50-40	Tiebreak First-to-7 points tiebreak game	First-to-10 points tiebreak game	3 sets
2	Grand Slam women's singles Grand Slam women's doubles Grand Slam men's doubles Olympics men's singles Olympics women's singles Olympics men's doubles Olympics women's doubles Men's singles Women's singles	50-40	Tiebreak First-to-7 points tiebreak game	Advantage	3 sets
3	Grand Slam men's singles Olympics men's singles (Gold medal)	50-40	Tiebreak First-to-7 points tiebreak game	Advantage	5 sets

Table 5: Proposed scoring systems used in men's and women's singles, doubles and mixed doubles