



# The "Great Combat C"

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## ABSTRACT

Modern technology presents lots of useful statistics about a tennis match. It helps us to dig deeper into its "fabric", to understand tactical patterns, to detect underlying currents and simply follow the match flow being a better equipped spectator. We know where Nadal likes to go with his forehand, we know what serve Federer prefers to use on grass, we can foresee shot selection of Serena Williams from the mid-court and we can detect the preferable height of the ball for Kristina Mladenovic. Match statistics cover practically every bit of technical and tactical mastery of the contenders. Much could be understood about their current physical form. However, the psychological bit remains elusive. This article offers a new look at the tennis match through the introduction of a psychological measurement - the "Combat C" or "Combat Coefficient" - an easy and straightforward measure of contenders' competitive effort.

**Key words:** match analysis, deciding points, competitive effort

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## INTRODUCTION

While tennis enjoys a comfortable and well-established position among the world's most prestigious sports, there's always room for improvement in terms of view value. For the last couple of decades, tennis researchers have been analysing the progress of the game in comparison with other professional sports – and tireless efforts are being made to fill the stands and raise the TV ratings. Lots of valuable data is collected. And, being as diverse a game as tennis is, there can never be too much of it for a tennis nut. What we also want are tennis statistics that can be easily understood and followed by an outsider, someone who might never be able to tell a forehand from a smash, but who nevertheless can enjoy a gripping duel.

An uncompromising contest of two well-matched contenders is after all, the game's major attraction. Tennis popularity peaked during the decade of the Borg-Connors-McEnroe rivalry. These were well-matched warriors with an insatiable desire to conquer all – never happy with second best. Their rivalries personified the essence of competitive sport – the contest of wills. Can this be measured? And secondly: could it be put to good use?.

## METHODS AND RESULTS

To evaluate the intensity of the match we usually rely on statistics such as: score line and length of the match.

For example, 7:6, 6:7, 7:6 looks more like a fierce contest of equal players than 6:0 6:0. In reality though, a score line with tie-breaks on the ATP tour could hide easy games on serve and a Russian roulette in the tie-break. View value? – Not much higher than a "bagel set". On the other hand, 6:0 can be equally deceptive, as every game could be fiercely contested and decided only after several "deuces".

Noting the length of a match implies the assumption that the longer battle goes, the tougher the resistance, a.k.a. the intensity. In reality, long points are no guarantee of battle ferocity. Just think of a contest of two clay court specialists, who often produce long matches even when the level of the players is quite different: the ball might always go over the net 20-odd times, but the rallies are won by one and the same player.

Match time doesn't filter time-dragging (up to 37sec between points), medicals -- which happen more and more often -- or toilet breaks. All these real or fake necessities can prolong a match by as much as half-an-hour. And that represents on average one third of a best-of-three sets match.



The author suggests that the closest to real substance of the match is not the length of the match and not the score line, but the amount of “deciding” or “advantage points” in it. We know that to win a game one needs to win at least 4 points and to get to “deuce” each player needs to win at least three.

By dividing the total amount of points played in the match on the total amount of games played in the match, we get the measure of competitive effort or the “Combat coefficient” of that match. Here, any amount over 6 will indicate a tough battle, whereas anything lower than 6 suggests a pretty one-sided affair.

Some examples from Roland Garros 2017:

#### Male draw:

1. Wawrinka - Murray 7:6 3:6 7:5 6:7 1:6. **CC=6,28** (339:54)
2. Raonic – Carreño Busta 6:4 6:7 7:6 4:6 6:8. **CC= 6,37** (382:60)
3. Edmund – Anderson 7:6 6:7 7:5 1:6 6:4. **CC= 6,0** (328:55)
4. Pouille – Ramos Vinolas 2:6 6:3 7:5 2:6 1:6. **CC = 7,0** (307:44)
5. Ferrer - Lopez 5:7 6:3 5:7 6:4 4:6. **CC = 6,5** (345:53) Most fiercely contested set is the set with the lowest scoreline 6:3. **CC=7,55** (68:9).

#### Female draw:

1. Ostapenko – Bacsinszky 7:6 3:6 6:3. **CC = 6,8** (211:31)
2. Halep - Pliskova 6:4 3:6 6:3. **CC = 6,93** (194:28)
3. Svitolina - Martic 4:6 6:3 7:5. **CC= 5,77** (179:31) The score line indicates a gripping match, while the CC tells a more

sober story. It was in fact a mediocre match plagued by 75 unforced errors.

4. Bacsinszky – Mladenovic 6:4 6:4. **CC= 7,25** (145:20) 1h45min

5. Kuznetsova - McHale 7:5 6:4. **CC= 7,5** (165:22). In the second set 82 points were played, thus CC reached a staggering 8,2! But the first set took longer time.

#### DISCUSSION

The “Combat Coefficient” is a rating which is not affected by format (best of three- or best of five-setter) or by sex, as it eliminates the advantage of physical strength.

Examples from Roland Garros 2017 might give the impression that females produce a better battle. It should be noted that comparing both sexes was not the goal of this research, and more data is needed to confirm or reject this assumption. However Deaner (2016) in his article “Sex differences in sports interest and motivation: An evolutionary perspective” mentions one study which, in contrast to all others, revealed a greater competitiveness of females in comparison with their male counterparts. It was a study of professional tennis players.

At the same time, the lower CC in male matches could simply indicate the greater role of the serve.

A consistently low CC in lost matches can indicate flaws in a player’s tournament planning, as one should seek events more suitable to his level.

While the “Combat coefficient” could serve as a match evaluation tool, it could also lead to the introduction of a player’s personal CC, which might serve as an indicator of his or her current form and effort: CC for winning matches and CC for losing matches.

This could be done as follows: After a match, both players are awarded the same CC, but for a winner it goes to the “winning” column and for the loser to the “losing” column. An average in the “winning column” would be a player’s personal winning CC and an average in the “losing column” would be a player’s losing CC.

Consistently low personal losing CC could help to encourage a player to exert better effort, or to adjust to a tournament schedule and seek events more suitable to his/her level.

To eliminate the tie-break’s influence on CC, (where one needs to win at least 7 points and not 4 as in an ordinary game), a suggestion could be to discount tie-breaks completely, removing them from both the game and the point tally in calculations.

## CONCLUSIONS

The introduced "Combat coefficient" can serve as a simple and adequate tool in match analysis, which is easy to understand and follow. It tells us a bit more about the competitive level of the game, player's profile and might help coaches indicate the necessity to improve mental toughness of their pupils.

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