



# Analysis of Strategy and Tactics in Tennis.

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## ABSTRACT

This article is a review of previous studies related to tactics and strategy in tennis and an insight into current trends and observations within the modern professional game. The purpose of performance analysis of interest to the current paper is tactical analysis. In this paper, we will firstly discuss the nature of tactics and strategy in sport before covering how tactical aspects of tennis can be analysed.

**Key words:** Tactics, Analysis, Strategy.

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## INTRODUCTION

Performance analysis of sport is an observational analysis of actual sports performance that typically involves audio-visual and computer equipment. Performance analysis can be done using any methods that allow data from actual sports performance to be recorded and analysed; such methods include notational analysis, biomechanical analysis of technique, qualitative observation and the use of physiological measures taken during actual sports performance (O'Donoghue, 2010, p.2). The purposes of notational analysis identified by Hughes (1998) have been adopted as the purposes of the wider performance discipline. These purposes are technical evaluation, tactical analysis, analysis of movement, coach and player education as well as developing sports performance databases for modelling purposes.

### Tactics and strategy

Strategy and tactics are related concepts in sports performance. A strategy is planned prior to competition (O'Donoghue, 2010, p.6-7) that will make best use of the player's strengths while limiting the effects of any weaknesses. At the same time, the strategy should seek to exploit any known weaknesses of the opponent while avoiding situations where the opponent can make use of their strengths. Tactics are moment to moment decisions made during the competition by players based on the options available to them and the perceived risks and opportunities associated with these options (Fuller and Aldersson, 1990). Talented players make good use of situational probability during rapid decision making in sport (Singer and Janelle, 1999).

A strategy planned before the match and tactical decisions made during the match are mental concepts that are not

directly observable during competition. However, the different skills performed by players, the locations where they are performed on the playing surface as well as the timing of these actions can give an indication of the strategy and tactics being applied. For example, if a tennis player approached the net then he or she can be assumed to have adopted a net strategy. If, on the other hand, the player did not approach the net, then the player can be assumed to have adopted a baseline strategy. The analysis of player decisions requires an understanding of the different options available, their relative chance of success and any risks involved. The time pressure that a player is under when making a decision should also be considered.

### Performance Indicators in Tactical Analysis of Tennis

There are many different types of tactics in tennis including service tactics (Unierzyski and Wieczorek, 2004) and shot placement (Hughes and Clarke, 1995). Performance indicators are used to represent important and valid aspects of sports performance including tactical aspects (Hughes and Bartlett, 2002). "Performance indicator" is not a fancy new term for variable and there are specific qualities that sports performance variables need in order to qualify as performance indicators. Performance indicators should be measures of valid and important aspects of performance, have an objective measurement procedure and a valid means of interpretation (O'Donoghue, 2010, p.21). We will look at some performance indicators of tactics in tennis. The distribution of service directions can be represented by the percentage of services played to the left and right thirds of the target service court (Unierzyski and Wieczorek, 2004; O'Donoghue, 2009a). This can be done for first and second serve to the deuce and advantage courts separately. Figure 1 shows that male players in Grand Slam tournaments adopt a different service strategy when facing left and right handed opponents (O'Donoghue, 2009a).

There are other aspects of service strategy that can be observed including speed of serve and the use of slice, kick and flat serve types (Bollettieri, 2001, p.137). Knowledge of the service strategy of opponents can help players prepare to receive service against these opponents (Roetert and Groppel, 2007).

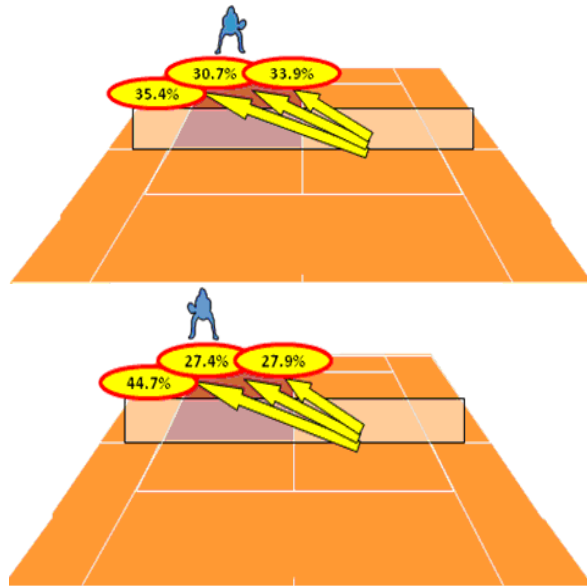


Figure 1. Distribution of serve direction of right handed players playing (a) right handed and (b) left handed opponents in men's singles at the French Open (O'Donoghue, 2009a).

Another indicator of strategy is the percentage of non-service points where players go to the net (O'Donoghue and Ingram, 2001). Service points include aces, double faults, serve winners and serve return winners. If there is a high or low percentage of service points in a match, it can distort the value calculated for the percentage of points where a player goes to the net. Therefore, these points should be excluded from the analysis of net strategy so as only those points of 3 or more shots where players had an opportunity to go to the net should be included. Like service strategy, net strategy can also be influenced by the opponent with different players reacting differently to the same opposition effects (O'Donoghue, 2009b). There are some players who will go to the net less against opponents who frequently go to the net, there are some players who will go to the net more against opponents who prefer to go to the net in order to prevent the opponent going to the net and there are some other players whose own net strategy is unaffected by how often the opponent goes to the net (O'Donoghue, 2009b).

Strategy in tennis is not only influenced by the opponent, but also by court surface (O'Donoghue and Ingram, 2001; Collinson and Hughes, 2003). Since the introduction of surface grading and the use Type I and Type III balls, it is no longer correct to talk about a surface effect as surface is not the only thing that differs between tournaments. Therefore, the differences which still persist between Grand Slam tournaments (Brown and

O'Donoghue, 2008) are tournament effects rather than surface effects. There are also gender effects on tennis tactics with male players tending to go to the net more often resulting in shorter rally durations (Brown and O'Donoghue, 2008). Knowledge of the different tactics used in men's and women's singles tennis is important to aspiring players and their coaches. Scoreline within matches has also been found to influence the tactics of players with male players tending to go to the net more when facing break points on serve than during non-game points (O'Donoghue, 2007). A further scoreline effect on strategy is that women tend to go to the net less during tiebreakers than normal games while the percentage of net points played by men is similar between tiebreakers and normal games (O'Donoghue, 2006).

#### Player Profiles addressing opposition effects

The fact that the opponent has an influence on service strategy (O'Donoghue, 2009a) and net strategy (O'Donoghue, 2009b) presents a challenge for player profiling in tennis. Player profiles show the typical values for performance indicators as well as an indication of variability in these values between performances (James et al., 2005). O'Donoghue (2005) mapped performance indicator values onto percentile norms to help interpret the typical value for a player as well as the spread of performances about the typical performance. It is necessary to understand how a player plays against different types of opponents. We could define baseline players as those who go to the net on 10% or less of non-service points and net players as those who go to the net on 10% or more of non-service points. Table 1 is an example of a profile for a player that separates performances against different types of opponents. The main tactical indicators in the profile are the percentage of net points played as well as the percentage of points where the player plays a winner or unforced error. This is an indicator of strategy because some players are more aggressive than others and try to finish the point earlier, and thus, they play their last shot of the point sooner than other players, whether that last shot is a winner or an error. A profile such as the one shown in Table 1 could also include separate performance indicator values for matches where the opponent is right or left handed. Furthermore, the profile could distinguish performances at different tournaments providing important information about the player's strategy when different surfaces and ball types are used.

OPPONENT	Baseline opponent (n=9)	Net opponent (n=6)
%First serves in	61.4	61.0
%Points won on first serve	74.7	77.5
%Points won on 2nd serve	51.5	59.3
%Aces	9.6	5.6
%Double faults	6.4	6.1
%Points won when receiving	54.6	55.0
Mean 1st serve speed	160.7	157.0
Mean 2nd serve speed	134.6	133.3
%Net points played	15.9	16.2
%Net points won	78.2	78.3
%Points where winners are played	24.7	25.4
%Points where unforced errors are played	21.6	16.5

Table 1. Performance profile for Maria Sharapova playing against baseline players and net players.

## CONCLUSIONS

Understanding the tactics of a player allows decisions to be made about how to prepare for a match against that player. There are tactics for different aspects of tennis performance and these can be represented by relevant performance indicators. Performance analysis has a role in analysing the tactics of players. Players never play against an "average" opponent on an "average" court surface with "average" balls. It is, therefore, important that player profiles represent the tactics of players in different types of competitive situation.

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