

**(“Il Cervello Tennistico” is available in Italian language only at the moment. The Index and Abstract in English language are a kind concession of the Author to English speaking readers.)**

## **TENNIS BRAIN**

(How Mind influences your results)

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## INTRODUCTION

“Athletes and trainers have been understanding for many decades now that the mental aspect is a critical factor to determine the quality of sport performance which is often more important than the athletic and technical aspects (Weinberg and Gould 1995; Butler, 1988; Sayer & Connolly, 1987; Martens, 1991). A meta analysis made by Williams (1986) shows that in terms of psychological abilities, high level athletes have got better concentration abilities, higher confidence, thoughts related to performance, less distractions and lower level of stress. Those athletes use imagery abilities to anticipate success in the task, are more determined and show better involvement and motivation (Gould et al., 1989; Orlick et Partington, 1989).”

Muzio M., Crosta D., in *Sport: flow e prestazione eccellente* (2004), Franco Angeli, Milano

Different tennis competition events like single, double, team competitions and so on require different mental skills. In doubles, players can communicate with each other. In team events the player can relate to the team captain. Communication makes doubles and team events completely different from single not only from a technical point of view but, above all, as for mental aspects. This different psychological perspective makes some players excellent in double and team events but in single, open tournaments, when left alone on the tennis court become lost in themselves. The contrary happens very often too: two single players, joining together for a double are incapable to perform as a team.

The sport of tennis above all when played single, has got some peculiarities that makes it different compared to other sports. It is an extremely lonely and mentally stressing game; the event duration would make an aerobic sport of it but the nature of rallies makes of it an anaerobic effort; the effective play time is a small percentage to the overall event time with extremely frequent play pauses (and that makes of tennis the second listed “mental sport”, second to golf only); reaction times while rallying are extremely quick; there is a phase of “action” and one of “reaction”; it is a sport in which fine motor skills are fundamental; the scoring system can be considered irrational and so on. By combining all these different characteristics it comes out that tennis has got peculiar aspects compared to other sports and, no matter many common issues, requires specific mental abilities and adaptive mental training. This is the reason for an overall, specific work on tennis. Sampras wrote that athletic and mental characteristics which allow a player to shine on tennis are

harder than those required to become a star in NBA <sup>1</sup>; Meaghann Shaughnessy wrote that tennis takes a lot of talent because a player need to combine so many physical and mental skills, such as end-eye coordination, speed, strength, endurance and flexibility. Even if all these physical skills are perfected, if the mental part is not as strong, it is difficult to succeed as a tennis player.<sup>2</sup> Hewitt, who made of mental abilities a competitive advantage to get to the ATP top said that he couldn't remember a time where he wasn't mentally tough out there. It was something he did right since coming through juniors. He wasn't as big or strong as a lot of the guys. He had to find an edge over the guys because he wasn't going to overpower them or serve bigger out there.<sup>3</sup> Nadal, who is given huge credit for his mental strength wrote that tennis, more than other sports is a mental game. The tennis player who feels more positive sensations for most of the time, the one capable to isolate himself better from his own fears and mood that an important match inevitably brings, at the end will triumph as number one in the world.<sup>4</sup>

## WHAT IS "TO BE GOOD" AT TENNIS?

In tennis there are 4 macro areas to be accounted for:

Technical dimension

Tactical dimension

Athletic dimension

Mental dimension

By doing an average which takes into account sex, age, play level, surface among modern professional tennis players, technical aspect amount 20% of overall competence.

Tactical aspect amount for 10%.

Athletic aspect about 30%.

Mental aspect about 40%.

To say it with Marat Safin, playing at professional level it is not just about playing tennis, the mental part plays a very important role. Tennis is not just about hitting the ball over the net, serving or volleying; it is much more than that; you need to use your head. Pro players can play tennis, what makes difference is how their brains allow them to use their abilities at best. When two players with similar potential and technical-tactical skills come up against each other, the result of the match is often determined by psychological factors such as self confidence, determination, will power and concentration.<sup>5</sup> Nadal on the same subject wrote that observing in training number ten and number 5 hundred, is not easy to say who is higher in the rank. Without the event pressure, both players will

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<sup>1</sup> Pete Sampras, from *You can quote me on that*

<sup>2</sup> Meaghann Shaughnessy from *You can quote me on that*

<sup>3</sup> In Young, J. (2008), *Coach, can you help me to be mentally tough?*. ITF coaching and Sport Science review, 15(44), 2-4.

<sup>4</sup> Nadal R., Carlin, J.,(2011), *Rafa, La mia storia*, Sperling & Kupfer

<sup>5</sup> Samulski, D. (2006), *Tennis is mental game (Part One)*, ITF coaching and Sport Science review, December, Issue 40.

move and hit the ball in the same way. But playing tennis is not only about hitting the ball well, but taking the right shot selection, hitting slower or harder, high, long, with back spin, top spin, flat and what part of the court to shoot.<sup>6</sup>

According some theories creating a top player requires 10000 intensive training hours. If mental aspects account to 40% of the overall skills, players should dedicate at least 4000 hours of mental training in their education. How many tennis players do it?<sup>7</sup> It is a question that probably will be answered in the next years. I'm pretty sure that many of you will say that mental skill are acquired with playing matches and acquiring experience on the court. Of course matching and practical experience are very important to improve mental abilities but, alone, are not enough and by all means are not the optimal solution to educate, improve and strengthen personal mental abilities. Rallying against a wall improves technique, so, what's the use of specific training with a tennis coach? Playing tennis means moving on a tennis court. What is then the necessity for a specific athletic training?

Let's see the matter from a technical point of view too. Players and experts are surprised with the fact that nearly 80% of playing time is spent on things other than just hitting the ball to win a point. A lot of time is taken up changing ends, in the intervals between games, between points and thinking. However, during training, players rarely use 70 or 80% of the time to mentally prepare themselves.<sup>8</sup> The last sentence is unfortunately still true. Players train hard on the "active match time" but they seldom train the most relevant part of the match, the phases of not play, the pauses, which Rial<sup>9</sup> named "the invisible aspect" of activity. Most modern players specific training is about technical, tactical, athletic aspects while mental training is left to natural talent and selection. The question I would like to bring to your attention is the following: why relying on talent and natural selection if it is broadly demonstrated that mental skills can be trained and it is overall accepted that mental abilities improve tennis performance on court, that is, competitive advantage?

Another aspect which limits the spread of mental training is the fact that obviously tennis players have the minimum interest in spreading news about it. Since mental may be an important competitive advantage, champions want to keep it and they don't give any hints or explanation about the work they did on that field. Therefore, when asked on the subject, very often they have an understatement attitude. It is very curious that most times when players are interviewed on the issue they neglect mental training or employing mental experts. Valverde wrote on this: "Those players who make it to the top usually have some kind of mental training in their development. However, because this is the biggest edge they have over their opponents, they do not talk about it very often and they keep it as as their "secret weapon". When I interviewed several top professionals tennis players during my doctoral dissertation research (1988-1991), I asked them about their mental

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<sup>6</sup> Nadal R., Carlin, J.,(2011), *Rafa, La mia storia*, Sperling & Kupfer

<sup>7</sup> I guess the surprise of many readers while reading "4000 hours". Such reaction is determined by the fact that many tennis players believe the mental approach limited to psychological support. That is just one and actually not the most relevant of the 4 mental training aspects. The other three are: mental training on court; mental training outside the court; communication parents-player-coach.

<sup>8</sup> Samulski, D. (2006), *Tennis is mental game (Part One)*, ITF coaching and Sport Science review, December, Issue 40.

<sup>9</sup> Rial, C.F., (2008), *The invisible aspect of tennis: a revision of the psychological processes of the activity*. ITF coaching and Sport Science review, 15(44), 9-13.

thoughness strategies. None of them wanted to share with me this information until I signed an agreement with them stating that I will not release that information to the next ten years.”<sup>10</sup>

In this book we will unveil a further tabu on mental training: the common prejudice that it is mainly about teorical knowledge of abilities related to confidence, motivation, concentration, stress management and so on. They are important aspects but they are not all the mental skills required to a tennis player and above all, **THEY ARE USELESS TO THE GOAL UNLESS THEY ARE PRACTISED, TRAINED AND AUTOMISED ON A TENNIS COURT IN ROLE PLAY SITUATION AND THEN APLLIED IN REAL CONTEST.**

Knowledge doesn't automatically mean capacity to put into practice. This is particularly true in a sport like tennis since player is stressed by agonistic and competitive situations which lead to psychological anxiety and pressure and emotive and istinctive reactions can take the upperhand on self management and control. In other words, mental approach must be not only teorically known but must be practically trained just like any other technical and tactical skill. Although we know that phisical, technical and tactical factors are essential for the appropriate development of a great tennis player, we must not forget that the psychological aspect must be trained and perfected the same way.<sup>11</sup> Just like the automization of a shot requires thousands of practice hours with endless repetitions (overlearning), the same principle must be applied to training mental abilities. Bill Cole wrote on this that having a cognitive, conceptual understanding of sport psychology is important, but this alone is not suffient to help an athlete consistently perform under pressure. The principles of sports psychology need to be practiced, used in actual game conditions and mastered before the can be called upon in a reliable manner day to day under competitive conditions.<sup>12</sup>

No matter that an ATP research shows that those players who use a mental training approach can improve their tennis performance from 15 to 50%, the mental trainer is in most of cases a professional who works outside of a player team; it makes limited motivational teorical consulting, and the work which is carried on is usually irregular and during competitive agonistic season break with the end result that is poorly fuctional to the player performance improvement.

In tennis academies and schools, the mental aspects of tennis are usually being thought by a professional who has got limited specific knowledge of tennis and above all is incapable of applying teorical knowledge with exercises on the court. He can provide screening, testing, psychological help but he often misses a program and a short, medium and long term feedback. He is on the tennis court very hardly, rarely can direct a training session on court, almost impossible he can monitor for a reasonable stretch of time that the teorical support is automised on a tennis court and the tennis player becomes autonomous in the mental management.

## **THE MENTAL TRAINER**

We need to clarify the mental aspects of tennis to under stand the role and work of the mental trainer. Mental training is about 4 main issues:

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<sup>10</sup> Valverde J., [www.bmentallytough.com/articles](http://www.bmentallytough.com/articles)

<sup>11</sup> Samulski, D. (2006), *Tennis is mental game (Part One)*, ITF coaching and Sport Science review, December, Issue 40.

<sup>12</sup> Cole,B., *Myths about sport psychology*, [www.mentalgamecoach.com/articles/](http://www.mentalgamecoach.com/articles/)

- Psychological support in case of problems (sport psychologist, sport psychiatrist, mental coach, mental tutor and so on)
- Tennis training with mental orientation (mental trainer)
- Teaching on mental abilities (sport psychologist/mental trainer)
- Positive communication (Trainer-parents players) (sport psychologist/mental trainer)

The mental trainer is not a psychologist. He uses some of the instruments from sport psychology, sociology, NLP, somatology, transactional analysis, cognitive sciences and whatever he may believe beneficial to be applied on tennis. While sport psychologist goal is to understand the historic origin, educative, social, cultural; motivations, reasons of tennis player behaviour, the tennis mental trainer is a technician who knows the sport, spots on and acts on those behaviours on court which determine a poor tennis performance. No matter the tennis player past, he works to reach future objectives training the tennis player with cognitive exercises outside of the tennis court and tennis exercises inside the tennis court.

The tennis mental trainer is just like an orchestra director. He makes sure that technical, tactical, athletic aspects during an agonistic contest are executed at best by brain through training and automatization of mental abilities. Each player brings on a tennis court behaviours correspondent to his own character. Since everybody is different, with his own characteristics and peculiarity, mental training must be carried on individually and tailor made according to personal needs.

## **THE BOOK STRUCTURE**

This book is structured in 5 sections. It starts from conceptual issues and goes towards real works out, from theoretical explanations to practical on court applications.

The first part, chapters 1-2 are about the brain and the body. How they work and integrate each other. In this part the latest neuroscientific knowledge and applications about brain knowledge and functioning will be reported.

In the second part, chapter 3-6 are discussed the obstacles to best tennis performance. The loop thought-emotion-behaviour will be explained thoroughly.

The third part, chapter 7 is dedicated to mental training and coaching. It is an interview to the Dutch mental coach Bouke De Boer. It is a full immersion mental coach approach through the real stories of athletes he has been coaching.

The fourth part, chapters 8-18, is about mental skills and mental training. It is the application of mental skills required to bypass the obstacles in the second part.

The fifth part, chapters 19-23, is about the mental skills applied to an agonistic contest. You will find inside a model and a proposal to reach the zone or flow state which is the dream mental state of each tennis player.