COACHING & SPORT SCIENCE REVIEW

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COACHING & SPORT SCIENCE REVIEW

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EDITORIAL

Welcome to issue 67 of the ITF Coaching and Sport Science Review, the third and final issue of 2015. The articles in this issue cover a variety of tennis specific topics including; coping strategies in coaching, professional player anthropometrics and communication.

This issue follows the conclusion of yet another highly successful ITF Worldwide Coaches Conference by BNP Paribas in Antalya, Turkey. The ITF and the Turkiye Tenis Federasyonu hailed the ITF´s 19th biennial coach education showpiece event as a huge success.

During the week, over 700 coaches from 99 nations attended presentations on cutting edge research, technology and training methodologies from renowned experts and former professional players such as; Judy Murray, Dominik Hrbaty, Francis Roig, Beni Linder, Gabe Jaramillo, Carl Maes, Biljana Veselinovic and Mats Merkel to name a few.

The five-day conference brought together over 70 leading international experts in coach education, player performance and sport science to present on the latest trends in the long-term development of a tennis player. ITF Development Research Officer, Miguel Crespo remarked: "This year's conference has been a huge success with tennis coaches from all over the world sharing their knowledge and experience in the latest trends in tennis player development." The conference also saw the unveiling of the first official Worldwide Coaches Conference app, to great critical acclaim, as all delegates and speakers were able to interact together through the app and have all the conference information easily accessible in the palm of their hand.

November saw the launch of the new Tennis iCoach website, offering increased exposure for coaches and clubs, increased free content in the Editor's Pick section and improved search filters. The ITF Tennis iCoach website remains at the forefront of online coach education platforms. The ITF Tennis iCoach Academy will launch in 2016. The first course is aimed at coaches that are starting out on the international tours. Coaches will develop their on-court and off-court skills through an understanding of the tasks related to achieving success at this level. The course is set out over ten modules related to aspects of the tour including planning and periodisation, tactical and technical training, anti-doping programmes and management skills. Please click here to visit the improved new website.

There is another important announcement to be made which affects the ITF Development department:

After 24 years, Executive Director of Tennis Development Dave Miley has decided to leave the ITF for personal reasons at the end of December 2015.

Dave has played a key role in the development of tennis globally. He initiated many successful projects including Tennis10s that grew out of the ITF's Play and Stay Programme.

With Miley's innovative and creative approach, he worked hard to expand the education of tennis coaches worldwide, particularly with the launch of iCoach, the ITF's official online coaching platform. Miley was very active over the years with the Worldwide Coaches Conference with another successful five-day conference last week in Turkey.

In 1993, Miley established the ITF Coach Education Programme and was author of both the Level One Manual and co-author of the Advanced Coaches Manual that is now available in over 20 languages worldwide. The Junior Touring Team programme proved very successful with many top-ranked players coming out of the teams, including Grand Slam Champion Victoria Azarenka (BLR).

ITF President David Haggerty said: "The outstanding work of the ITF's Development Department and the contributions of Dave Miley are well known throughout the tennis world. Dave will leave a large legacy and we wish him well for the future."

The ITF thanks Dave for his years of service and commitment to tennis.

We hope that you find the 67th edition of the Coaching and Sport Science Review insightful and that it will keep allowing coaches across the world to build on and develop their coaching knowledge. As always, you can continue to make use of all the ITF´s comprehensive coaching resources by visiting the ITF coaching website.

www.itftennis.com/coaching

Dave Miley
Executive Director
Tennis Development

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Troubleshooting in Tennis

Scott Williams (USA)

ITF Coaching and Sport Science Review 2015; 67 (23): 3 -4

ABSTRACT

This article discusses troubleshooting your own game and specifically your serve, and return. The article approaches this subject through the use of the SMARTS system which includes six fundamental skills: Seeing, Movement, Adjusting, Rotation, Transfer and Swing.

Key words: troubleshooting, SMARTS, improving, self-teaching

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INTRODUCTION

The SMARTS system outlines basic stroking skills. Every shot you make on the court involves seeing, movement, adjusting, rotation, transfer, and swing. Being an individual sport where no mid-match coaching can take place it is important for players competing at all levels to manage their own game and be able to troubleshoot when strokes are misfiring. However, this is not something that comes naturally to all players, therefore this troubleshooting guide for serve and return will enable you to apply corrective SMARTS to your game when in both practice and match situations.

TROUBLESHOOTING YOUR SERVE

1- A player foresees themselves double faulting and then does so

a. Seeing – The player must improve their imagery. By watching pro players deliver winning serves the player can then try and put themselves in the professional player´s shoes and see the path of success their serve will take.

2- The serve goes into the net

a. Seeing – Keep head up until the impact is complete.

b. Adjusting – Is the toss too low or too far in front of the player´s body? Counter by adding more height and spin. The rhythm of the toss and backswing may be too quick or the player might not be extending their legs enough. Check the player´s balance by adjusting their stance. Their feet may also be too close together. For the second serve, a tennis player should look to toss the ball above their head more and brush up on the ball as if their hitting a ground stroke with topspin. Rely on wrist more; keeping it loose. Also by aiming higher and deeper over the net.

c. Rotation – Too little rotation in the forearm (pronation) may be creating too much slice on the ball. Counter by using an alternative spin, perhaps a kick serve or flattening out the slice.

d. Transfer – If a tennis player is hitting too many serves into the net the fault may be the result of not utilising the legs enough to push upward to the ball. Or the player may be hitting down on the ball.

e. Swing – Another potential problem could be pulling down on the ball with the elbow too soon. This can be countered by adding spin to the ball, especially on the second serve. Additionally the ball toss may be too low, meaning the backswing may be ready prior to the toss being finished. The tossing arm needs a head start to get fully extended; the racquet arm will catch up.

3- Footfaulting

a. Rotation – If a player is stepping over the baseline with their back foot, their hips are opening too soon or not rotating enough at the start of the coiling motion.

b. Transfer – If faulting with their front foot, a player should ensure they are transferring weight from the back foot to the front foot, angling their hip while keeping the front foot anchored to the ground. A player can try to correct this by practicing serving with their weight just on the front foot angling the hip over the baseline to transfer weight. Then by accentuating the extension of their tossing arm, and bending the hip over the baseline, but keeping their feet on the safe side.

4- Lacking power on the serve; just arming the ball

a. Adjusting – The player´s body may be straightening too soon. A player should look to get their legs into it, bending and extending them more. Then check other power sources: rotation, transfer, swing.

b. Rotation – Could be standing too open when making contact. Check the swing path.

5- There´s a hitch in the serve

a. Adjusting – Check the timing. The player may be tossing the ball too high and taking the racquet back too quickly. Practice the whole sequence step by step. Toss first, then start the backswing.

b. Swing – Perhaps the racquet head is not staying up but dropping between the player´s shoulder blades too soon.

6- Jumping at the serve

a. Adjusting – Feet should only leave the ground as a result of upward extension. A player shouldn´t jump to reach the toss, if this occurs the toss may be too high or the player may be swinging too soon.

7- Losing control of the toss

a. Adjusting – Check that as a player you are not releasing the ball with a flick of the wrist. Also check that you are opening all your fingers at once and only when your arm is fully extended. Try tossing the ball as if you are holding an ice-cream cone.

8- Serve goes long

a. Adjusting – This may be a result of moving under the toss, so move the toss more in front. Speed the wrist up to move the racquet through impact more quickly. Add spin and reduce pace: aim shorter in the box.

b. Swing – Possibly the ball is being hit too low. If holding the racquet with a forehand grip, try a continental grip to put spin on the ball, pronating the wrist and forearm. Accelerate the wrist more to get the racquet through impact faster. Speed up the follow-through.

9- Serve goes wide

a. Adjusting – Pronating the arm more, meeting the ball with a flat racquet face can counter this. Aiming with greater margin of error away from the lines.

b. Rotation – There is likely too much spin on the ball due to an open racquet face at contact and an over-rotation of the hips and shoulders. Focus on using the tossing arm as a decelerator across the body to stop rotation.

10- Elbow seems as if it's not being bent properly during the serve

a. Rotation – A player may be serving from their elbow, commonly known as the ´waiter serve´. The problem may be that the right hip is opening prematurely. Try a closed stance for several weeks as the whole body learns to rotate into the serve.

b. Swing – If the elbow is not bending at all, go back to the trophy position and serve with the racquet head up for a few days. Dennis Van Der Meer suggests taking a full backswing and tapping your back twice with your racquet before making contact, then after a few more serves tapping once, then not at all.

11-Legs aren't bending at all on the serve

a. Transfer – Check the cadence of the serve. You may be rushing the backswing and decelerating the finish. Emphasise your stance and trophy pose.

12-My opponent repeatedly kills my serve

a. Seeing – Look at your opponent´s grips before you serve. Let that help you decide where to serve the ball.

b. Transfer – Your weight transfer actually may be going backward, giving it less power, making it easy to return. Transfer your weight upward and forward into the ball, and get a strong push off the ground. Then follow your serve into the court a step or two.

13- My rear end sticks out when I´m serving

a. Transfer – The upward transfer happens too soon. Check your trophy pose. Load and explode. Fully extend before impact when the toss is on the way up.

14- When you can hit the serve with enough spin

a. Swing – First be sure you are tossing in the right place for spin serves (1 o´clock for slice and 11 o´clock for topspin for right-handed players). Then from the trophy pose extend upward to your toss, keeping your wrist loose at contact, so the racquet quickly can brush the ball.

TROUBLESHOOTING FOR RETURNS

1- Being caught often with the wrong grip

a. Seeing – Is your opponent studying your grip? If so, let him or her know you are aware of this by constantly switching it or waiting until they start their serving motion to establish the grip.

b. Swing – Don´t grip the racquet too tightly in the ready position. Let the nondominant hand turn the racquet in the hand. If still being caught, try preselecting a grip that is suitable for the spot where your opponent will likely serve. This will likely be a backhand; but even if you have to change, you can move quickly to a continental or eastern forehand grip or the grip of your choice.

2- Returns are going all over the court

a. Seeing – Keep your eye where you are aiming.

b. Adjusting – Adjust your starting position.

c. Swing – Measure the backswing and take a shorter backswing.

3- Getting aced in the same place over and over

a. Movement – Take the split step as the ball is struck to get ready to move quickly.

b. Rotation – Vary position (deep in the court, on or inside the baseline).

4- Often can´t reach second serves

a. Movement – Start closer to the service box and use shuffle steps to move forward.

5- Always swing late on returns

a. Seeing – Make sure to carefully watch the opponent´s toss

b. Adjusting – If too close to the ball, start further back.

c. Rotation – Make unit turn faster.

d. Swing – Shorten backswing.

6- Often jammed on returns

a. Adjusting – Work on moving around the ball, running around the anticipated contact point to get proper position.

7- Returns go short in the court

a. Seeing – Pick the spot for where the return is intended.

b. Adjusting – Get proper distance to swing. Clear the net with more height and spin. Add pace to the return.

c. Transfer – If hitting in a closed stance, rotate and transfer weight into shot.

d. Swing – Accelerate the racquet head and hit the ball with a complete follow-through.

8- Returns going wide

a. Movement – Make sure the first step is powerful.

b. Adjusting – Do not jam yourself. Give yourself proper distance from the ball.

c. Swing – Swing may be late or not accelerating when meeting the ball. Aim away from the lines.

9- Returns going into the net

a. Seeing – Pick spot for the return.

b. Movement – Adjust position by challenging the return with shuffle steps or transition movements.

c. Adjusting – Try to aim higher over the net. Try a different spin.

d. Rotation – Stay low and work on speeding up your unit turn so not waiting for the ball. Continue to adjust location until the ball is being met at a height with which is comfortable.

e. Swing – Shorten the swing and open the racquet face slightly when blocking second serves. Add topspin or slice to give you more net clearance.

10- Returns go long

a. Adjusting – Work on shuffle steps and adjust position.

b. Transfer – Weight might not be being transferred correctly, weight might all be on the player´s heels, especially when on the defensive.

c. Swing – May have too big of a wind-up on second-service return. Work on shuffle steps with a shortened backswing. Add topspin. Check to see if grip is changing. Lower the height of return. Aim shorter in the court. Close racquet face more at contact.

11- Timing seems off

a. Adjusting – Adjust position further back so that you have more time.

CONCLUSION

The ability to troubleshoot your own game during competition can often be the difference between winning and losing. Although each tennis player´s game varies greatly by familiarising yourself with the SMARTS system it can help a player from overthinking during competition by just analysing their game through the six fundamental skills. This troubleshooting guide provides improving players with methodology to correct circumstances that can occur frequently during tennis competition. It is important for a player to be aware of what is causing these reccurring errors and having the ability to troubleshoot their own game will greatly enhance their learning and knowledge of the game.

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Excerpted from the book Serious Tennis (Human Kinetics), written by Scott C. Williams. Reprinted with permission from Human Kineti

RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

An evaluation and comparison of the height and mass of the top 250 ATP players

Keith Leiting (USA)

ITF Coaching and Sport Science Review 2015; 67 (23): 5 - 6

ABSTRACT

Elite level tennis performance requires perfect skill and highly developed physiological characteristics. Very little research focuses on the physical characteristics of elite level tennis. This evaluation of height and mass suggests that both variables are, on average, larger the closer a player gets to the number one ranking. This suggests that physical characteristics may influence elite level tennis performance.

Key words: ATP, physical characteristics, anthropometrics

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INTRODUCTION

Development of elite level tennis performance takes years to develop. As the elite tennis player hones their skill and reaches the top 250 in the ATP rankings, the difference in skill between players may be minimal. Several studies have identified important physical characteristics of junior elite tennis players but to the author's knowledge, no studies have been done on the top ATP players. The aforementioned studies suggest that height may positively influence ball velocity (Perry, Wang, Feldman, Ruth, & Signorile, 2004) and increasing strength may improve tennis performance (Groppel & Roetert, 1992). Due to the similarities in tennis skill at the elite level, physical characteristics may separate the best from the rest.

The purpose of this study is to identify differences in height and weight of the top 250 ATP players.

METHODS

Data was collected from: http://www.atpworldtour.com/Rankings/Singles.aspx on 21 May 2015. Data for each player ranking from 1-250 was manually transferred into Microsoft Excel 2010©. Data included ranking, ATP points, date of birth, height, mass (body weight), and year the player turned pro (experience at the pro level). Player data was separated in 50 player increments. Statistical analysis included 20 two-tailed, student sample t-tests assuming unequal variance ($P < 0.05$). Secondary analysis involved Cohen's d estimate of effect size (how practically different are the results). Table 1 shows the number of data sets used for each variable.

Number of samples analyzed for each sample					
Rank	1-50	51-100	101-150	151-200	201-250
Points	50	50	50	50	50
Age	50	50	50	50	50
Height (cm)	50	49	49	45	39
Mass (kg)	50	49	48	46	36
Experience as pro	48	47	39	29	19

Table 1. The table above denotes the energy utilisation systems in five discrete categories, however, many other texts combine them into three major systems.

Limitations

This study is limited by the potential inaccuracies and missing data on the www.atpworldtour.com website. If players do not report or update their information we do not know if they have grown taller, gained mass, or lost mass.

RESULTS

The results of this study indicated that there are statistically significant differences in points, age, height, mass, and experience as a pro player. The difference in points was expected as the players were separated by ranking, which is determined by points. Age and experience as a pro player were randomly statistically significant from the top 50 players, 51-100 and 151-200 were statistically significant but not statistically significant for 101-150 and 201-250. Therefore, age and experience as a pro provide no separation between the top 250 ATP players. Height and mass did not reach statistical significance until the top 50 were compared with the 201-250 ranked players. It is important to note that height and mass show a trending decrease from the top 50 players. Table 2 lists the mean, standard deviation, statistical significance, and Cohen's d effect size for all variables.

Comparison of the top 250 ATP players, in 50 player increments						
Rank		1-50	51-100	101-150	151-200	201-250
Points	Moy.±ET Signification Cohen´s d	2351.68± 2398.39 0.000*	685.24± 111.61 0.000* 1.33	435.38± 49.67 0.000* 1.56		215.76± 14.01 0.000* 1.77
Age	Moy.±ET Signification Cohen´s d	28.54± 3.66	26.91± 3.8 0.030* 0.44+	28.18± 4.22 0.644 0.09	25.83± 4.01 0.001* 0.71	27.13± 13.11 0.465 0.17
Height (cm)	Moy.±ET Signification Cohen´s d	188.32± 8.17	185.82± 6.42 0.093 0.34+	185.80± 6.47 0.091 0.34+	185.62± 6.66 0.080 0.36	184.26± 5.03 0.005* 0.62
Mass (kg)	Moy.±ET Signification Cohen´s d	81.70± 8.43	79.24± 6.75 0.112 0.32+	79.78± 7.07 0.223 0.25+	79.47± 6.05 0.138 0.31+	77.30± 5.79 0.004* 0.62
Experience as a pro	Moy.±ET Signification Cohen´s d	10.73± 3.46	9.17± 3.52 0.032* 0.45+	10.85± 4.09 0.888 -0.03	8.69± 4.25 0.034* 0.53+	9.16± 4.51 0.183 0.39+

*Table 2. *Indicates statistical significance at P< 0.05; Cohen´s d: small effect 0.2-0.49 (‡), moderate effect 0.5-0.79 (§), large effect› 0.8 (≠)*

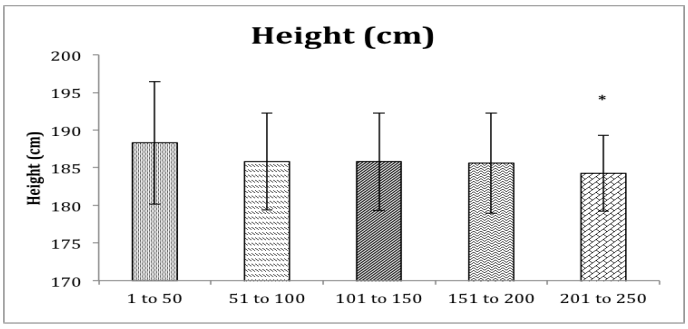
DISCUSSION

Height

The top 250 ATP players are an elite level group and can be considered homogenous. The top 250 ATP players represent only a small percentage of the tennis players in the world. Therefore, the difference in height among this sample suggests that height may play a role in reaching elite level tennis performance. The analysis of height also shows a downward trend as you get further from the top players. Height may be an advantage because taller players typically have a greater arm span. According to Reeves, Varakamin, & Henry, (1996) height and arm span are positively correlated ($r = 0.73$-0.89) meaning the taller the individual typically, the greater the arm span.

The increase in arm span may positively influence racquet velocity and subsequent ball velocity during the serve and ground strokes.

For example, if a player that is 170cm and a player that is 190cm have the same shoulder angular velocity, the linear velocity of the racquet will be greater for the taller player. With all other variables the same, the taller player should hit the ball with greater force and velocity. In previous research player height was shown to positively influence ball velocity during the execution of ground strokes and serves (Perry et al., 2004).



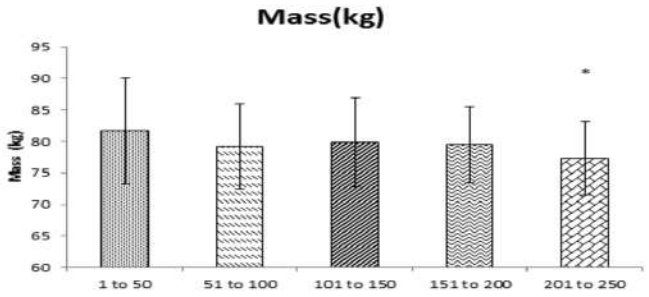
Graph 1. Comparison of height among the top 250 ATP players.

*indicates statistical significance from the top 1-50 players.

Another positive effect of being a taller player is the ability to cover more of the court with a simple reach of the arm. The size of the court is not changing therefore; longer arms allow the player to cover more of the court without moving their center of mass thus, saving valuable energy.

Mass

The body mass of the top 250 ATP players shows a downward trend the further a player is from the number one ranking. Data from this analysis suggests that the top 50 players are on average 2 - 4.5 kilograms heavier than other ATP players. According to Groppel & Roetert, (1992) elite level tennis players have 10.4±3.2% body fat. The difference in body mass between the top 50 and remaining ATP players may be due to an increase in muscle mass, not fat mass. The increase in muscle mass may give the player an advantage as Gabbett, Kelly, & Sheppard, (2008) suggested, stronger players are able to change direction and cover more distance faster than weaker players.



Graph 2. Comparison of mass among the top 250 ATP players.

Analysis of experience as a pro player showed that on average each group of players had between eight and ten years of experience at the pro level. Analysis of height and mass suggests, as a player progresses through the ATP rankings, physical characteristics may play a larger role in success. Skill and experience are still important, but because everyone at the elite level has similar skill and experience, this may not be the defining factor between winning and losing.

Among the height and mass data, there is a consistent trend that moves downward as a player is further from the number one ranking. The downward trend supports the notion that height and mass may play an important part when attempting to be the best tennis player in the world.

CONCLUSION

As mentioned, age and experience were not that different among the top 250 players. The lack of large differences in age and experience suggest that physical characteristics may influence success more than age or experience. The combination of greater height and body mass may create, what is called a "heavy ball." The heavy balls typically have a lot of velocity and spin, which may make the return more difficult technically and physically.

The downward trend in height suggests that a taller player has a greater chance of making it to the elite level. Therefore, if a tennis academy or coach is going to invest in or sponsor an athlete, it may be wise to consider the player´s maturation height. Mass also showed the downward trend which; suggests that participating in a quality strength program may increase muscle mass and improve the athlete's performance.

Further research needs to be conducted on elite ATP players to determine the influence of physical characteristics (aerobic, anaerobic, strength, and power) on tennis success.

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RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

Psychological implications of 'expecting the ball back'

Suresh Kumar Sonachalam (IND) & Edward Horne (GBR)

ITF Coaching and Sport Science Review 2015; 67 (23): 7 - 8

ABSTRACT

Mental toughness is widely accepted as the main aspect that makes the difference at the professional level. Hence it is becoming increasingly important that the coaches integrate psychological training in their day-to-day training program. This article discusses how a simple instruction of 'Expecting the ball back' that is commonly used, can have far reaching psychological benefits, if used with the right understanding.

Key words: psychology, visualisation, imagery

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INTRODUCTION

When coaches instruct a player to 'expect the ball back', they do so with the intention of ensuring that the player is ready to play the next ball and is therefore not surprised or out of position when the opponent does retrieve the ball. Too often this is seen as the only apparent benefit, but if we analyse a little further, we find that there are several other far reaching psychological implications involved and it in fact results in making the player very tough mentally, if ingrained in a player so it becomes a habit. A lack of mental skill training in players can restrict a player´s development and prevent them from fulfilling their potential, Eraña (2004) states that coaches tend to be preoccupied with technical development when technical and mental skill development can go hand in hand if coaches are a little more imaginative. A simple mental process of expecting an opponent to retrieve every shot will improve a tennis player's focus and eradicate frustrating mistakes or poor decision making.

Setting up the scene

Let us focus on a typical situation in a match and analyse the psychological implications of 'expecting the ball back' from this (following) situation. For better understanding try to visualise the following scenario:

"Player A has done all the hard work and has forced a short ball from the opponent that can be put away with a forehand (FH) into the open court. Just before executing the forehand, player A becomes aware that his/her opponent guessed where he/she is going to play the forehand and starts to move early in that direction.

Analysis and options in the situation

In this situation, two very different thought processes can determine the outcome of the execution of the FH by player A.

In the first thought process, if player A thinks about hitting a winner and does not want the player B to retrieve the ball back:

1.They might try to change the decision, in the last moment, and hit it behind the opponent, which would probably end up as a badly executed shot. As stated by Weinberg (1988) one of the fatal mistakes you can make is attempting to change your mind on the type or placement of your shot at the last moment.

2.Since the goal is to ensure that the opponent does not reach the ball, in an attempt to hit the ball away from the opponent, they could pull it out wide to achieve this goal.

However, if in the same situation, player A has no problem with player B retrieving the ball back and hence, expects the ball back:

1. The player will stick to their decision and continue to execute the FH into the open court

2. They will fully focus on the execution since he/she will not be perturbed by his/her opponent reaching the ball and therefore will not be distracted by the opponent's early movement towards the ball.

DISCUSSION

The psychological implications of ´expecting the ball back´:

1.**Concentration - Staying in the present**: The thought of expecting the ball to come back ensures that the player stays in the present while executing the shot. The focus remains on the execution of the stroke and does not shift to the outcome of the point, as will be the case if they do not want the ball to come back. In all likelihood given the position of the player in the point by committing to the first decision even though the opponent has guessed correctly, the player is still likely to be dictating the play.

2.**Confidence - Avoiding negative thoughts:** When the player is expecting the ball back, it is already a positive thought since they are expecting their shot to fall in (only then the ball will come back). Furthermore by expecting the ball to come back into play they are looking for further opportunity to win the point positively, rather than pinning his or hopes on their opponent not reaching the ball or missing the court. The notion of wishing or hoping for your opponent to make a mistake can induce negative, apprehensive feelings and added tension during competition which in turn can develop a fear of failure in a player. Weinberg describes a fear of failure as a tennis player playing not to lose instead of playing to win (Weinberg, 1988).

3.**Process orientation:** It is also clear that this ensures the player is process oriented and not outcome oriented during play.

4.**Control of emotions - Reduces anxiety:** Most of the time mistakes happen in put away situations, due to the anxiety that it causes, which results in the player looking up too early to see if the ball is falling in/out, or if it is a winner/opponent reaching the ball, thereby affecting the balance and the timing of the stroke. When a player expects the ball back, anxiety reduces and helps them relax through the entirety of the execution of the shot.

5.**Right attribution and awareness:** Since the player is focused on the execution, the awareness is very high, of why a particular shot was good or not. This allows the right attribution for the success or the failure and thereby helps them reinforce the right execution, or to understand what was wrong and correct it so when faced with a similar situation in the future the player is aware of what needs to be done to improve.

APPLICATION

The ability to stay focused on the execution by expecting the ball back and not be distracted by the fear of the opponent retrieving the ball can be trained on and off the court. This skill can be developed on court, by ensuring that the player is recovering to the next tactical court position immediately, after the execution of every shot, including an easy put away.

Off court, visualisation techniques can be used to help the player develop this desired thought process.

Being ingrained with the ability to visualise can have a positive aspect on additional psychological affects in tennis to those being primarily targeted.

Visualisation can be done internally and externally. Internal visualisation is recommended for use in recreating tactical or more open situations, while visualising externally is preferable for honing technical or more controlled and simple tasks (Weinberg and Gould, 1995). Imagery or visualisation is a key aspect of mental training that if utilised can result in significant reward for a player. Visualisation is the process whereby internal images that are produced consciously and believed to reduce anxiety, decrease errors, heighten anticipation, coordination, concentration and enhance self-confidence (Crespo et al, 2007). By recalling prior situations during competition where a player has regretted a particular decision, in this case not expecting a ball to come back, the player can then learn from that mistake and visualise executing that point in the desired fashion. Therefore when faced with a similar circumstance in the future the player, having rehearsed the point several times in their head previously, will eliminate the opportunity for indecision, ´positive imagery can prevent issues such as lack of commitment and confused shot selection´ (Williams et al, 2000).

An off court practice for visualisation and imagery outlined by Crespo et al (2007) includes these points:

1-Learn to relax.

2-Divide the movement into sequences.

3-Visualise a static object.

4-Visualise a moving object.

5-Visualise a player moving.

6-Visualisation directed by other person.

7-Visualise with words of the player.

8-Visualise before the match.

9-Visualise during the match.

By introducing this progressive and systematic process for developing visualisation in a player, qualities such as expecting the ball back can be greatly improved. By visualising an opponent retrieving a ball back and also visualising the next shot, a player, by being expectant and mentally prepared for that instance stands a greater chance of correct execution.

By integrating visualisation into a player´s armoury research has clearly demonstrated its many benefits: levelling emotions, enhancing confidence and facilitating technique modification and tactical training (Noel, 1980).

CONCLUSION

Therefore, with a simple thought process several aspects of psychology in tennis are covered. This thought process could be easily trained and developed by a player and their coach during practice both on and off the court while also being included into a player´s preparation for match play.

All of us understand the importance of integrating psychological training along with all the other aspects of training on court. It will be of great benefit to the players if we can achieve this goal with such simple and easy to understand instructions.

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RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

Coping with emotional labour in tennis coaching

Richard Buscombe (GBR), G Shone (GBR), A Preston (GBR) & Miguel Crespo (ESP)

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ABSTRACT

Viewed through the lens of 'emotional labour' this paper discusses situations in the tennis coach's daily schedule that may lead to perceptions of increased stress and burnout. Resulting from interviews with experienced coaches, our findings revealed; (1) Responsibility; (2) Impression Management; (3) Communication to describe the primary antecedents, response and coping strategies employed by coaches to mitigate against the maladaptive outcomes associated with emotional labour.

Key words: emotional labour, coping strategies,

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INTRODUCTION

A tennis coach works in a social environment, employed in a service based economy with the outcome of client-customer interactions significantly impacting on the consumer experience. Research conducted outside of sport has shown that positive affective displays during interactions, which in a tennis situation may include providing support through displays of warmth, empathy, positivity and compassion as the client attempts to master a new technique, have shown positive associations with customer satisfaction. Hochschild (1983) coined the term 'emotional labour' to describe the process of, and demands resulting from adjusting one's demeanour, language and tone during social encounters in a planned and strategic manner in order to facilitate a positive outcome. Hochschild proposed that individuals in jobs which require a high degree of face-to-face interaction with the public are particularly at risk of experiencing potentially deleterious effects that result from dealing with emotional labour demands on a daily basis. It would appear that tennis coaches work in environments that make them susceptible to experiencing emotional labour and as such the intention of this article is to first introduce the concept and then to provide suggestions for how a coach may cope with these demands.

According to Grandey (2000) emotional labour may involve enhancing, faking or suppressing one's true emotions. In a sports context this may require a tennis coach to act in such a way as to routinely inhibit, modify or project either positive or negative emotions that are either at odds with their current emotional state or perhaps even run counter to their personality (Cushion et al., 2011). Hochschild (1983) outlines two elements of professional acting 1) surface acting, which is the overt display of a planned outward appearance, 2) deep acting, requiring an individual to evoke in herself, and display the feelings needed in order to convey genuine empathy for those people with whom we interact. The variety of experiences afforded by the sports arena, and the diverse nature of the coaching profession are two alluring features of working in the field. However, even the most experienced coaches can find the variety of clients (age, standard, aspirations in tennis) and service demands (on-court coaching, leading social events, hosting tennis camp) to be challenging when continually modifying the way one is required to act at work. Each of these situations requires social interaction with clients who have their own personalities, emotional state and expectations for the outcome of the encounter. For example a coach may one minute find themselves in a discussion with a junior performer who is upset that they have not been able to master a new skill and then a minute later find themselves interrogated by an overzealous parent who wants to know why their child has only been selected for the second team when they feel that they are worthy of a first team berth. This diverse range of interactions requires a coach to be able to detect the emotional state of the person with whom they are interacting and then tailor their own emotional persona in order to ensure a smooth social encounter. When working as a tennis coach not only are you required to constantly engage in interactions but these interactions must be purposeful with the outcome holding consequences for the athlete (performance), the coach (perceptions of coaching efficact) and the

coach-athlete-parent triad. Isenbargar and Zembylas (2006) have highlighted the stressful and demanding nature of dealing with emotional labour and suggest that individuals who are unable to cope with these demands may experience increased stress and burnout.

Burnout has been described as chronic exhaustion caused by a perceived inability to cope with excessive emotional and psychological demands and it has been reported to occur in a range of performance climates (Jackson et al. 1986). Work in this area has served to highlight the role that various moderators (e.g., coping resources) and mediators (e.g., personality characteristics) play in influencing incidences of burnout in occupations requiring high levels of social interaction. The exploratory work described in the subsequent section describes our attempt to explore some of the antecedents, outcomes and methods of coping associated with emotional labour resulting from the need to manage social encounters when working as a tennis coach.

Eight coaches with a minimum of five-years' experience within their coach-athlete relationship participated. Six male and two female coaches took part, ranging in coaching experience from five to nine years and in age from twenty one to thirty two. All coaches had to be in contact with their athlete or group of athletes for a minimum of five hours per week, with time spent ranging from five to nine hours. Each coach participated in an in-depth interview lasting approximately forty-five minutes. The interviews consisted of open-ended questions thus permitting the participants to contribute as much detail as they wished in addition to allowing the researcher to ask probing questions to draw out fully the participants' viewpoints and experiences (Turner, 2010). An interview guide was followed consisting of general questions (i.e., "how did you get in to coaching?") moving to more detailed enquiry exploring the nature of social interactions in the workplace. The main body of the questions focussed on the nature of, and emotions resulting from these interactions with specific reference to stress and burnout (these terms were not directly used during the interviews). Finally each coach was asked to consider the strategies that they employed to cope with the demands of working in a service based industry. The

interviews were analysed using interpretative phenomenological analysis, with the aim being to "explore the participants' view of the world and to adopt as far as possible, an insider's perspective" (Smith, Flowers and Larkin, 2009).

The results clustered under three headings; Responsibility, Impression Management and Communication.

THEME 1: RESPONSIBILITY

Internalising a disproportionate amount of responsibility for managing the coach-athlete relationship and ultimately the athlete's performance had a significant effect on whether the coach demonstrated signs of enduring stress.

"I'm very harsh on myself before the players... I'm struggling to cope with work and balancing everything at the moment so we're not really sure what we are going to do next year... the seasons a write off to be truthful" (Participant 7).

A perceived inability to cope with situations when an athlete underperforms was seen to give rise to a series of negative emotions in some of the participants,

"Angry. I get frustrated easily with them sometimes and can name many situations where I have given them the tools but they have not taken it with them on a match day" (Participant 1).

THEME 2: IMPRESSION MANAGEMENT

The theme 'Impression Management' was derived from a collection of often contrasting interpretations. The participants' responses included reference to the need to balance their private and public self to examples where coaches were clearly struggling to manage the different identities that they adopt both at the club and in 'normal' life; ;

"Its life isn't it? It doesn't mean you act... I can't act... I wear my heart on my sleeve... I have never noticed holding my emotions in when coaching... its what I personally love doing" (Participant 6).

"Its funny you mention that because just the other day I saw one of my guys down the shops and he was laughing at the fact I have a life outside of coaching... In any environment you act differently, even down the shops I was more relaxed around the boy... Sometimes I come home and literally collapse... I put too much into it and feel so drained I can't even be bothered to have my dinner... my girlfriend's always nagging me to take a break from it" (Participant 3).

THEME 3: COMMUNICATION

Six of the coaches reported that they communicated with friends or family members in order to manage their emotional response when experiencing stressful situations and as such this appears to be a dominant source of coping.

"Even when I'm coaching my old man always comes to watch... when I played he watched and now when I coach he watches, he loves it... it's a routine for us on the way home to have a chat about the game or in general... he is always trying to advise me on what to do" (Participant 6).

However two participants felt less inclined to share their thoughts or emotions with others;

"Sometimes something can really irritate me but I just have to get on with it... I don't really talk to anybody about training or matches to be honest with you... I get very stressed but I decide to do it, I'm the coach so I have to deal with the stress that comes with it" (Participant 2).

CONCLUSION

Our exploratory work supports the contention that emotional labour is experienced by tennis coaches and furthermore, based on the coping strategies employed by a coach, burnout may result. In our exploratory study, communication was seen to be the primary method of coping with stress resulting from emotional labour although there was a marked difference in the participants' propensity to share their thoughts with others and to whom they confided. In this regard Korczynski (2003) found that workers turned to each other to cope with stress experienced at work. The coaches in our study did not utilise individuals inside the workplace but alternatively family members. Communicating with individuals not immediately connected to their workplace afforded the coaches an avenue to air their emotions without fear of the consequences. In order to establish structures within a team that supplement the existing support being provided by a coach's family it is proposed that head coaches may consider establishing forums for their coaching team to engage in meaningful discussion at work in a supportive and collaborative environment. For example, the use of a coach mentoring system, structured focus groups and one-to-one pastoral meetings may all prove to be worthwhile endeavours. In order for such strategies to be successful it is essential that the head coach promotes at all times principles that emphasise a non-judgmental and inclusive working community with coaches being made aware of the benefits associated with being inter-dependent when working to achieve the organisational goals and one's individual targets. Instilling these values and making them overt in the working environment will hopefully create a climate of trust and openness where coaches share their thoughts with colleagues. Korczynski (2003) found that establishing such communication patterns helped workers deal with stress encountered at work, in addition to improving team cohesion and facilitating a dense supportive culture among the workforce.

It was evident in our work that a) the coach's playing experiences, b) the interaction and management of the coach's personality with that of the athlete and parent and c) the coach's long term career aspirations all contributed to the experiencing of, and ability to cope with, stress associated with emotional labour. Future research employing nomothetic designs to elucidate the moderating and mediating role of a range of characteristics under these three broad headings would appear warranted.

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RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

TennisiCoach

How to change incorrect habits

Claudio Sosa (ARG)

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ABSTRACT

This article explains, from the perspective of neuroscience, why it is so difficult to change negative habits and particularly a player´s behaviour when making mistakes.

Key words: habits, make a pause, breathing, directed attention,neural wiring.

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INTRODUCTION

A habit is formed in the brain as a response to a behaviour that is regularly repeated. Habits are not just actions, they can also be repetitive thoughts or emotions.

The brain mechanism that produces behaviour patterns responding to environmental stimuli makes the brain a very efficient organ. Making movements and changing from one task to another require an energy from the brain. This energy consumption is even greater when a new task is completed. The human brain, due to habits, passes the stimuli directly to the action, but it does not give the opportunity to think whether the person will still want to act that way. That is why, to enforce a change in behaviour, for example, a technical movement, a way of thinking or a certain behaviour is a very difficult task that requires a great consumption of energy from the brain.

In 1944, the Canadian psychologist Donal Hebb explained that when two or more neurons get connected, they simultaneously trigger a signal. The synaptic connections get stronger and increase the probabilities that: when a neuron switches on again, the other one will switch on as well. Neurons that switch on together, wire together. A practical example to understand this is the following: Imagine crossing a mountain which is covered by a dense forest, the first time, a great effort will need to be made, but a very weak mark will be left along the way. If this is done several times, the mark of the trail will be more evident. There will come a time in which the trail will be very clearly marked, and another one will not want to be chosen, since it will require a greater effort to make a new one. When a tennis stroke, or a thought become mechanic, a hypothetical trail is left in the brain. When this stroke or negative thought has to be changed, each time a shot is made for example, the brain is being required to cross the mountain through the dense forest, which implies an effort and energy expenditure (Bacharach, 2014).

HOW TO CHANGE HABITS

In order to perform a new task, the brain must inhibit the attention towards the old task. This is very costly for the brain because of the energy expenditure it has to make, in other words, the brain circuits and connections have to work harder when trying to change. Dr. Estanislao Bachrach suggests that in order to change a habit, it is not enough to do it once, it will have to be practiced and repeated many times until it becomes a new habit. Besides, there is a part in the brain which the neuroscientist Mac Leand labels as a reptile brain (responsible for the survival instinct) which ´likes´ repetitive behaviour, routine and for things to always be familiar.

Self-directed neuroplasticity gives a person the tools to able to re-wire the brain, i.e. to change. This is achieved through a person´s expectations, experiences, what and how the individual pays attention to, being able to stifle certain emotions and suppressing thoughts and automatic actions from the brain (Bachrach, 2014).

It is essential for a person to be able to possess a strong commitment, work, discipline and dedication to be able to modify a behaviour. This ultimately activates the part of the brain which is receptive to new challenges through that motivation which activates the left prefrontal cortex and the reward circuits of the brain, which increase the desire and perseverance to change (Goleman, 2011).

If the same behaviour is repeated several times, like hitting the racket or making a wrong technical action, the brain will consider that action as ´preferable´, regardless of the effect it has on the person. The actions or inactions of any given day, and on which attention is being focused upon, have an effect on the wiring of the brain, and on how a person will respond automatically to different stimuli.

Commitment is necessary to be able to evoke change, and it must be understood that change is good. NASA specialists established that for change to happen, thirty days of consecutive practice of the new habit are necessary to create new neuronal paths in the brain, to learn and to incorporate this habit.

Literature by (Bacharach, 2014) says that in order to change, first, it is recommended to make a pause. During this pause, a person can think differently and should not act automatically i.e. reacting each time a point is lost or becoming upset because a new stroke has not been successfully corrected. It must be remembered that the brain does not want to spend energy. In essence thinking is a great consumption of energy. If a situation has not been already lived, or a similar one, the brain is signalled to repeat what it has done before. If a person threw their racket and got upset multiple times then this would be continually repeated. Automation, habits, repetition and doing the same thing repeatedly will assure little effort and energy expenditure to the brain and allow for a long survival. What the brain does not know, but the mind does, is that this thoughtless reaction is not at all beneficial for a person and this does not necessarily match the individuals 'targets or objectives´.

And it is just that what is trying to be changed, the reactive behaviour that does not match the targets that are trying to be reached by an individual. The constant negative emotions that are exhibited each time a shot is missed, or the wrong technical actions in a service action do not allow a person to be more effective. These behaviours that often lead to anger, result in a spiral of negative emotions which are very difficult to get away from.

PROCEDURE

1) If a stimulus causes negative emotions, try to get visually away from this stimulus, as far as possible. For example, if faced with a negative gesture from an opponent, an angry expression from a coach, or the last point or game has been lost, turn around and walk to the back of the court. If the set has been lost, it is best to go to the bathroom and get momentarily away from the negative situation of having lost the set. It is very important to know oneself and to be able to realise the signs of becoming angry.

2) Breathing deeply, just three or four times, is often sufficient. When negative emotions begin to surface, though sometimes unnoticeably, the rate of breathing accelerates, the brain receives less oxygen and toxins accumulate in the neurons. It may not be realised that the brain is the most toxic organ in the body. Not only does oxygen allow the cells to breathe, it is also a great stimulus for the creation of new cells. So, breathing deeply, is favorable for improving access to nutrients and to provide oxygen to more neurons. Cleaner and better breathing and more well-nourished neurons lead to better thinking.

Breathing deeply favours the use of more neurons to think consciously. Several alternatives can be created in the mind and perhaps different reactions. In the long-term this is part of the process of changing.

3) When a visual stimulus is changed or removed by, for example, turning away from it, and this is done so whilst breathing deeply, it is advised to try to do so whilst maintaining a good upright posture. This will aid in not only being able to breathe better, but it will favour a more efficient transfer of neurochemical messages from the spine to the rest of the body.

Research shows that when a person is anxious, impulses can drive reactions even more, and, as has been evidenced, this may go against the long-term objectives of an individual in trying to change a behaviour. If your mind is distracted, it will fall into the temptation to react without thinking.

This skill has to do with keeping concentration on what really matters, even in tough times. In order to achieve change, it is necessary to train.

The best physiological way of measuring success when practising the pausing exercise is known as the variability of heart rate. Every individual has, to a certain extent, a different heart rate. A healthy person´s heart rate has normal variations, even if they are sitting and reading. It increases when inhaling and decreases when exhaling. The more stressed a person is, the greater their heart rate, and the lower the heart rate variability. This happens because the heart is confined to a very fast rate with no variations, and this contributes to the physical feeling of anxiety and anger. Meditation is a technique that has proved to increase the variability of the heart rate. Apart from improving all the skills of self-control and will, this practice will help to improve focused attention, stress management and impulse control.

CONCLUSION

The key to modifying habits is by maximum self-directed concentration. Jose Mourinho, a Portuguese football coach, says that it is better to train in five minute series, with maximum concentration, than thirty consecutive minutes. Another suitable piece of advice is to not to try to incorporate everything altogether, it is better to advance little by little. A pause accompanied by breathing to calm down and to focus on the habit that is intended to be changed, is the key to success.

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RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

Communication tips for juniors

Jordi Gázquez (ESP)

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ABSTRACT

Tennis in modern times is an industry that integrates sport, entertainment and business together. Nowadays, a junior tennis player is not limited to what they do on the tennis court. The junior player must be ready to face other responsibilities, among which are the media and commercial related activities.

Key words: media,sponsors,brand,management

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INTRODUCTION

Coaches offer players multidisciplinary development. Their programmes can include technical, tactical, physical, nutritional and psychological training in sport. However, teaching young professionals how to deal with the media, and how to use social communication tools to get the maximum benefit possible is often overseen.

Junior tennis players should be aware of the role of the media in the projection of their professional careers. Greater or lesser presence of the media is an intangible value that can provide a source of income other than competitive activities.

The greater public exposure allows the player to have new sponsors, and to have even greater exposure, something particularly significant in individual sports such as tennis, thus, the importance of the tennis player showing their personality and helping to promote tennis in general. A greater, positive public exposure of a player within the media ultimately leads to increased fame and sponsorship opportunities.

THE MEDIA VALUE OF A TENNIS PLAYER

The main factor determining a player´s media value is their results. The increase in fame after winning a title is directly proportional to the greater capacity to generate extra sporting income.

However, there are other factors that impact on the exposure of a tennis player, and which, at times, can make their fame even greater than what they can deserve for their strictly competitive activity.

ASPECTS THAT DETERMINE THE MEDIA VALUE OF A TENNIS PLAYER

- Current sporting performances.
- Past sporting background.
- Personality.
- Personal factors other than sporting performance.
- Other variables, for example, the popularity of tennis in a certain country or the number of performance tennis players in that country etc.

Media attention is only usually given to successful tennis players, both national and international. Attention is not often given to the activities of other players. Therefore, it must be the tennis players themselves, their coaches or their staff who inform about their sporting achievements.

More often than not, tennis players do not have great abilities to be able to deal with the media, because they lack this initiative, and often overlook their relationship with journalists and the media. This is especially true in those who prefer to be more receptive to their local, regional and more specialised media.

In order to raise awareness of the situation, the Sport Upper Council, (CSD, in Spanish), organised in Madrid in 2014, a course on the ´communication and image of the athlete´ which contributed some behaviour guidelines for emerging athletes:

- Be active with the media and with communication in general: This helps in instigating new opportunities.
- Look for opportunities of visibility sharing events: Photographs and actions on social media with those who have many fans/likes/followers such as other athletes and well known celebrities.

- Establish collaborations that are outside of one´s comfort zone: It is possible that in tennis, players have a certain perception to others. It is necessary to look for actions that provide visibility with other people and in environments that are not habitual for our discipline to become part of a wider network of people.
- Being creative: Tennis many not have many followers in one particular country, but it may do in a neighbouring one. It can be advised to always look for relationships with national companies that are trying to enter the market.

Management of the personal brand

Sponsors only invest in a tennis player if the media value that he/she can create, can bring about good profitability or intangible value in terms of brand image.

Therefore, the search for media visibility must go hand in hand with the construction of an appropriate personal brand, since companies are particularly careful when contacting emerging athletes, particularly when they represent individual sports like tennis.

Alejandro Kowalski suggested that investing and sponsoring individual athletes is a risk for any company, since an individual athlete can bring about problems or an image crisis due to personal attitudes or conflicting opinions etc. ´It was indicated that there are three features that a company expects from the athlete it sponsors:

- Results / Success: These have an impact on visibility.
- Values: The athlete´s values must be in line with those of the company.
- Visibility: An effort must be made in order to get visibility.

The coach or the player must have an updated dossier to give to prospective sponsors or communication media. This paper or multimedia format dossier should include a personal file, match results, photographs, newspaper clippings, social media publications, etc.

Risks and opportunities in social media

The creation of a personal brand starts with the tennis player´s attitude on the court, in their personal relationships with the other players, technical staff, umpires, professionals of any field, and amateurs in general.

Social media provides emerging players the first global projection platform for their public image on the internet. Most emerging

players have their own profile on the main platforms (Facebook, Twitter, Instagram, etc.), making personal use without realising how important they are for managing their brand.

Potential sponsors study the public image of athletes to see if it matches the values of their brand, and one of the first things they will trace is the image an athlete projects on social media. Thus, tennis players must be aware that a profile is not just a tool for personal use, it is also a professional tool.

Managing a profile in the social media involves risk that also provides opportunities. Being ´prudential´ is important when posting online in order to avoid damaging the personal brand that is desired.

Athletes, in general, use social media to publish news, to make statements, and to express opinions, a relatively new way of interacting with the public and the media. This involves making their profiles more dynamic, posting personal photographs and videos which take them even closer to their followers.

Social media also provides sponsoring opportunities, both for professional and junior players, since they represent commercial communication with sponsors. Those brands that sponsor big stars, reduce production and emission costs of their advertising dramatically, and multiply the target audience they reach.

Emerging players can make similar use of their profiles to sponsor the brands that support them. Gone are the days when tennis players only offered to wear the logo on rackets or on t-shirts. It is important, however, to calculate communication actions to get the greatest effectiveness possible, and to avoid rejection on the part of the followers.

The tennis player- journalist relationship

The relationship between the tennis player and the journalist is not always easy, due to different reasons. It is open to debate from an ethical point of view, since personal and professional relationships can be conflicting. While the journalist looks for privileged information, the player looks for their benefit.

FACTORS THAT IMPACT ON THE TENNIS PLAYER- JOURNALIST RELATIONSHIP

- The personality of the player.
- Their professional and personal environment.
- Current results.
- The eccentricity of the sporting media.
- The personal relationship that the player may have with the journalist.
- The volume of demands from the media.

At ATP and WTA professional tournaments, it is the press person appointed by the organisation who acts as a mediator between the tennis player and the journalist, together with the person sent by the communication department of each competition. The main function is to coordinate press conferences and one-to-one personal interviews.

This is not frequent on the rest of the International Tennis Federation (ITF) and junior circuits, where nobody is in charge of the press, and it is the journalist who contacts the players directly.

The ITF published a text to raise awareness amongst junior players about the importance of communicating with the media in their careers. These are the main guidelines:

- They must be aware that the media are an important part of the life of a professional player in addition to training, coaching and playing matches.
- A personal interview is good to sponsor a player.
- There is no need for players to be afraid: If the player is concerned about an interview, they can ask for help preparing for it.
- Bear in mind that it is the player who controls the information revealed.
- It is advisable to try to get to know the journalists in particular regions or countries, and even foreign journalists, for when the professional level is reached.

It must be understood that not all journalists who carry out interviews are tennis specialists.

- Neither journalists nor much of the public know what it means to be a professional tennis player: They expect to learn this information from the players´ themselves.
- Questions about private life: These are typically asked to gain an insight into the player´s life, however, they should not be intrusive.
- Punctuality when attending media commitments is crucial.

It is also important for players to be able to give interviews in English, so as not to miss the opportunity to interact with the journalists and global fans during international competitions.

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RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

Temporal structure in tennis competition

Bernadino Javier Sánchez-Alcaraz Martínez (ESP)

ITF Coaching and Sport Science Review 2015; 67 (23): 15 - 16

ABSTRACT

This article intends to review the temporal structure of competition tennis. It is indispensable for the coach to know the temporal aspects because they will help them to select the most appropriate type of training for their athletes depending on the characteristics of the competition.

Key words: rest time, playing time, analysis

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INTRODUCTION

The analysis of the competition intends to record and analyse the behaviours and actions of athletes in real match situations (O'Donoghue, Girad, & Reid, 2013). Tennis is the racket sport that most frequently applied performance of competition analysis (O´Donoghue, & Ingram, 2001), defining a number of variables or performance indicators that contribute to success in competition (Hughes, & Franks, 2004), as shown in Figure 1:

Figure 1. Tennis performance indicators.

Among all these indicators, it is key for the coach to know the temporal aspects which will help him to determine the most appropriate training types for their athletes (Gutiérrez, 2010), and to regulate the workloads for physical conditioning of the tennis player in terms of volume, intensity or duration (Sánchez-Alcaraz, 2013).

Temporal structure of tennis

There is a lot of research about the temporal structure of competition tennis, stating that there are different variables that impact on the temporal aspects of tennis, such as gender, level of players, age, modality of the game (singles, doubles, wheelchair tennis, etc.), number of sets to be played or the surface of the court (Sánchez-Pay, Torres, & Sanz, 2014). In order to carry out this research, a thorough revision of the bibliography was made, on the Web of Science and Dialnet database using the following descriptive terms: "tennis, temporary aspects, notational analysis, and performance analysis".

Total and real time of play

The total duration of a tennis match varies between 1 and 5 hours (Torres, Sánchez-Pay, & Moya, 2011), depending on the number of sets (3 or 5) to be played and on the type of competition (Cabello, & Torres, 2004). In the case of best of three matches, the average duration is between 60 and 90 minutes, both for adults and junior tennis players (Bergeron et al., 1991; Kovacs, 2007; Torres, Cabello, & Carrasco, 2004; Torres, Sánchez-Pay, Bazaco, & Moya, 2011), though these times can be longer when playing on clay (Cabello, & Torres, 2004). In the case of best of five matches, the TT is longer and increases to 3-4 hours of play (Schonborn, 1989; Professional Tennis Registry, 2002) or even 5 hours in top competition matches (Christmass, Richmond, Cable, Arthur, & Hartman, 1998; Hornery, Farrow, Mújika, & Young, 2007).

Yet, the percentage of real playing time for a tennis match ranges between 16% and 29% of the total time (Elliot, Dawson, & Pyke, 1985; Reilly, & Palmer, 1995; Christmass et al., 1998; Smekal et al., 2001; Torres et al., 2011). These figures are lower in the case of professional players and on clay courts, around 16-18% (Smekal et al., 2001), while on a fast court, it will range between 23-26% (Christmass et al., 1998; Elliot et al., 1985). Depending on the age of the players, research shows higher values of RT of play for junior players, around 30% (Torres, 2004). Finally, when comparing sex, no differences have been recorded between men and women in adult competition in the real time of play percentage in the most recent studies made (Fernández, Fernández, & Terrados, 2007; Fernández, Sanz, Fernández, & Méndez, 2008; Méndez, Fernández, Fernández, & Terrados, 2007).

Performance time and pause

Intermittences in tennis are very strongly marked by the rules which allow a resting time of 20 seconds between points, so in relation to performance time during the point and pauses or resting time, there is a variation between 1:2 – 1:3 (Christmass et al., 1998; Elliot et al., 1985; O'Donoghue, & Ingram, 2001; Reilly y Palmer, 1995), although veteran players have shown lower values (Fernández et al., 2009).
As to the duration of the points, the studies analysed have shown an average of play of 6-10 seconds (Fernández, Méndez, Fernández, & Terrados, 2007; Fernández, Sanz, Fernández, & Méndez, 2008; Hornery et al., 2007; Kovacs, 2007; Morante, & Brotherhood, 2005). Yet, the duration of a point in tennis varies, mainly depending on the type of the playing surface, and the sex of the players. So, a study made by the Professional Tennis Registry (2002) among professional players, the duration of the point in men matches was confirmed 2.3 seconds on grass, 5.7 on hard court and 7.2 seconds on clay and for women, it was 4.9, 6.1 and 9.3, respectively.

On the other hand, apparently the duration of the points has increased over the last years in the four Grand Slam tournaments in the male category, and has decreased in the female category, so the differences between the different types of surfaces are smaller (Fernández, Sanz, & Méndez, 2012). In this sense, two studies made with women competition players showed similar duration of points, both on clay (7.2 seconds average) and on fast courts (8.2 seconds average) (König et al., 2001). their practice sets and how they connect to improved match play. Finally, in junior players, the average duration time of points is higher (approximately 9 secs.), both on fast and slow surfaces, it clearly shows the importance of setting the level, the age and the surface when defining these parameters (Torres, 2004).

Author/s	Total duration (min)	Playing time (%)	Resting time (%)	PT & RT duration	Point duration
Weber et al. (1978)	.....	16.4	83.6	.....	5.08
Elliot et al. (1985)	60	26.5	73.5	1: 2.9	10 ± 1.6
Reilly y Palmer (1995)	42.7	27.9 ± 3.9	72	1: 3.1	5.3 ± 1
Christmass et al. (1998)	90	23.3 ± 1.4	.....	1: 1.7	10.2 ± 3.0
Smekal et al. (2001)	.....	19.12 ± 12.1	70	.....	6.4 ± 4.1
RPT (2002)	120 - 180	.....	.....	.....	2.3 - 7.2 in males & 4.9 a 9.3 in females
Morante & Brotherhood (2005)	65 to-152	17.5 - 21.1	78.9 - 82.5	.....	5.2 - 7.0
Hornery et al. (2007)	79 - 119	14.93 to 28.57	71.42 - 85.06	.....	6.7 - 7.5
Fernández et al. (2007)	.....	21.9	78.1	.....	8.2 ± 5.2
Méndez et al. (2007)	.....	21.5	78.5	.....	7.5 ± 7.3
Fernández et al. (2008)	.....	21.6	78.4	1: 2.1	7.2 ± 5.2
Torres, Cabello et al. (2011)	105.0 ± 20.0	31.5 ± 5.83	73.5 ± 8.5	1: 2.7	9.08 ± 6.0
Torres et al. (2011)	69.62 ± 8.01	22.46	80.63	.....	5.5 ± 9.7

Table 1. Most relevant studies on tennis temporal aspects.

PRACTICAL APPLICATIONS FOR COACHES

According to Gutiérrez (2010), the identification of the parameters that make up the sport structure provides relevant information at the physiological level (it determines the effort made by the athlete during practice), technical and tactical (it determines technical and tactical actions over time to set training sessions that fit into the sport reality as much as possible, and determines execution times) psychological (it controls the subjective perception of players about the real time of play), etc.

CONCLUSION

Research has shown that, in general, the duration of a tennis match is approximately 60-90 minutes out of which the player is hitting the ball between 20-30% of the time. The duration of the point varies between 6 and 10 seconds, with a 20 second resting time between points. However, it has been proved that there are different variables that impact on the temporal aspects of tennis, such as gender, level of the players, age, modality of the game (singles, doubles, wheelchair tennis, etc.), number of sets to be played, or surface of the court, and which must be considered when planning training sessions.

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Should players serve using the foot-up or foot-back technique?

Caroline Martin (FRA)

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ABSTRACT

In this article, two stance techniques used when serving, the foot-up and foot-back technique, will be analysed and the effects, practical tips and recommendations for each will be detailed for a variety of game styles and tactical intentions.

Key words: stance technique, foot-up, foot-back,

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INTRODUCTION

In biomechanics, the tennis serve is a sequence of motions referred to as a "kinetic chain" made up of the various body segments involved in this specific stroke. As the starting point of this chain, the legs are the "launching pad" of the service motion and, therefore, their position and action play an essential role in performance. The goal of the preparation phase for the server, during which they get their body and legs into position, is to use ground reaction forces in order to generate the power required for the service motion. Tennis players can generally use two stance techniques: some bring the back foot up to the front foot during the ball toss, prior to the swing (Murray, Tsonga, Del Potro); while others leave the rear foot back until leg extension begins (Federer, Djokovic) (Figure 1). The first is known as the "foot-up" technique, while the second is called the "foot-back" technique.

Figure 1. Foot-back tehcnique used by Federer (left); foot-up technique used by Del Potro (right).

During the 2007 French Open, the distribution of the two stance techniques was analysed (Renoult, 2007). Results showed that 72.4% of players used the foot-up technique. However, when we look at technique selection according to game style, we notice that this percentage changes considerably (Table 1). Close to 50% of players who serve and volley regularly or occasionally (doubles players or attacking players) use the foot-back stance when serving, compared with only 1 player in 6 among those who never move to the net after their serve (Table 1). What are the advantages and disadvantages of each stance technique?

Serve stance	Attacking game style	Baseline game style
Foot-up	54.3%	82.7%
Foot-back	45.7%	17.3%

Table 1. Distribution of techniques according to game style among players at the French Open, adapted from Renoult (2007).

EFFECT OF THE STANCE TECHNIQUE ON BALL VELOCITY: ADVANTAGE TO THE FOOT-UP TECHNIQUE

A recent study has shown that when expert players use the foot-up technique, they generate on average higher ball velocities (173.2 km/h vs. 166.3 km/h with the foot-back technique) (C. Martin, Bideau, Nicolas, Delamarche, & Kulpa, 2012). This represents a mean difference of 7 km/h in favour of the foot-up technique. How can we explain this result? It is known that the larger the base of support, the more balanced the player is. That is what happens with the foot-back technique which gives the player good stability. By contrast, with the foot-up technique, as both feet get closer until they touch one another and the server moves forward and pushes off the ground to hit the ball, the base of support narrows, which means the player becomes less balanced. The body of the server starts rotating forward. As the result of the blocking of a body part in motion (in this instance, the feet), an amount of body rotation is produced (as is also the case during a trip or somersault) (Figure 2). That amount of forward body rotation (known as "angular momentum" in biomechanics) is greater with the foot-up technique than with the foot-back technique. And we know that the greater the amount of forward body rotation, the higher the ball velocity (Martin et al., 2013). That is why the foot-up stance allows players to serve a little harder.

Figure 2. Back foot brought next to front foot before forward rotation.

EFFECT OF THE STANCE TECHNIQUE ON NET CLEARANCE: ADVANTAGE TO THE FOOT-UP TECHNIQUE

Another major advantage of the foot-up technique is that it produces higher upward ground reaction forces compared with the foot-back technique (2.1 times the body weight vs. 1.5 times the body weight, respectively) (Elliott & Wood, 1983) (Bahamonde & Knudson, 2001). onsequently, the foot-up technique allows players to impact the ball higher compared with the foot-back technique. A mean difference of 11 cm was recorded between the two stance techniques (2.65 m with the foot-up technique vs. 2.54 m with the foot-back technique) in expert tennis players (Elliott & Wood, 1983). As we know, the higher the ball impact, the greater the net clearance, the higher the chances of increasing 1st and 2nd serve percentages, and the more chances you have of achieving short and cross-court angles. It has been shown that increasing the height of ball impact from 2.60 m to 2.70 m allowed players to reach zones 25 to 30 cm shorter in the service box.

EFFECT OF THE STANCE TECHNIQUE ON RUNNING TIME TO THE NET DURING THE SERVE-AND-VOLLEY: ADVANTAGE TO THE FOOT-BACK TECHNIQUE

A scientific study has focused on the influence of stance techniques on the running time of expert tennis players (male and female) to the net during the serve-and-volley (Martin et al., 2012). Results showed that players using the foot-back technique were able to reach the service line faster than those using the foot-up technique (1,49 s vs. 1.56 s, respectively). Even though the difference of 70 ms between the two techniques may appear insignificant at first sight, in reality it makes quite a difference in relation to one of the biggest challenges of serve-and-volley play. Indeed, serve-and-volley players look to run as quickly as possible in order to play the volley in good conditions; this can be achieved by getting as close as possible to the net. For instance, in the case of a return of serve hit at 140 km/h, a 70 ms time difference means that the serve-and-volleyer can get approximately 2.4 m closer to the net, thus greatly enhancing the likelihood of a successful first volley (Figure 4). How is it possible to explain such a difference between the two stance techniques? According to the results of this study, the loss of time recorded with the foot-up technique happens mostly during the landing phase. The duration of the first foot-floor contact after the serve (Figure 3) is extended by 20 ms on average with the foot-up technique.

Figure 3. First foot-ground contact during the landing phase.

Because players push more upward when using the foot-up technique, they need more time to recover balance during the landing phase before running to the net. Another factor explains the shorter running time to the net with the foot-back technique, and that is the forward impulse. With the foot-back technique, players cover a greater distance inside the court during the serve (60 cm compared with 46 cm with the foot-up technique) because they are able to generate larger propulsive forces to the net (0.20 times the body weight vs. 0.16 times the body weight with the foot-up technique) (Figure 4) (Elliott & Wood, 1983) (Bahamonde & Knudson, 2001).

EFFECT OF THE STANCE TECHNIQUE ON THE RISKS OF CHRONIC UPPER LIMB JOINT INJURIES: NO CLEAR ADVANTAGE

Some scientists studied the stress (forces and torques) that is placed on the shoulder joint during the serving motion depending on the stance technique used in order to determine if one technique was more traumatic than the other. No noticeable difference in joint loading was observed between the foot-back and the foot-up techniques (Reid, Elliott, & Alderson, 2008).

CONCLUSION

Practical tips: What type of stance is recommended when serving?

- Are you a doubles specialist? A serve-and-volleyer? Or an attacking player? Consider using the foot-back technique which will enable you to reach the net faster during the serve-and-volley.

- Is your goal to serve with more speed and consistency? Consider using the foot-up technique to generate more speed and have a higher ball impact. Make sure to bring your back foot behind your front foot and not on the side or slightly in front. Otherwise, your hips will rotate towards the net too soon and you might overload and injure your shoulder.

- Is your goal to enhance the technique you currently use (foot-back or foot-up)? Regardless of the technique you use, you should know that it is the back leg that should primarily be responsible for pushing upward and forward; the role of the front leg is more to provide stability so as to facilitate the body rotation to the net. Make sure that your back foot is correctly positioned in relation to the back hip, i.e. in such a way that the upward push of the back leg allows for the elevation of the back hip and the tilting of the pelvis and shoulders (Figure 5).

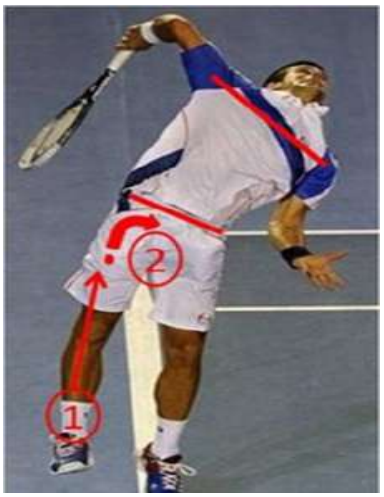

Figure 5. Back leg push and tilting of the hips (Elliott, Reid, & Crespo, 2009).

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RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

The impact of the four motivation boosters on tennis player development (part 2)

Antoni Girod (FRA)

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ABSTRACT

This article is a continuation of the first part. In this part, we will discuss the last two motivation-related concepts for the long-term development of tennis players.

Key words: development, long term, Development, long term, psychology, progress

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INTRODUCTION

The "Progress" booster

Now that we know that the first two motivation boosters, i.e. Meaning and Enjoyment, are key to the success of the learning process in its early stages or that they can help a player regroup for a fresh start, let's take a look at the third booster, i.e. Progress, which is essential to maintain motivation in the long run. This specific concept cannot be separated from the notions of work and discipline, as illustrated by Kei Nishikori's words: "When I was 12, I was selected for a three-week trial at Bollettieri's tennis academy. I immediately loved it. I would play tennis all day and even if it was hard work, the pro players who were training there showed me that you had to work really hard to become a professional player." Gabe Jaramillo, head coach at Bollettieri's, recalls: "Many teenagers that come to the Academy have a lot of talent, but many of them also don't work hard enough to achieve their full potential. Right from the very first day, things were different with Kei. If we'd tell him to arrive at 7 in the morning for a training session, he'd be there at 6:45 with his rackets ready and his tennis shoes firmly tied. At 7 am sharp, he'd be ready to start training." Discipline, an essential value for anyone who wishes to reach the highest level, needs to be instilled in players by their coach between the ages of 10 and 12.

The goal is for the player to be able to discipline himself, so that he does not need to rely on others to push himself to progress. Stanislas Wawrinka, one of the hardest workers on the ATP Tour, had a difficult start to the 2013 season. This is what Severin Lüthi, captain of the Swiss Davis Cup team, said on the subject: "Stan suffered some difficult losses early this year, but we always said: 'Look, the most important thing is what you make of this situation. If you react negatively and bury yourself in a hole, you won't make any progress. You need to accept the positives and negatives, and learn from them to improve. That is all you can do.' And through self-discipline, that's exactly what he's managed to do." In the spring of that year, the Swiss player arrived at the Monte-Carlo Masters Series tournament with a Samuel Beckett quote tattooed on his inner left forearm: "Ever tried. Ever failed. No matter. Try again. Fail again. Fail better." Here's what the Swiss player had to say about it: "It's my second tattoo; I'd been thinking of doing it for a while. It's a quote that I really like because it sums up well my job and my desire to always try despite the defeats." You could call it having the Progress booster under the skin!

Rafael Nadal knows better than anyone else the importance of switching to another booster when the others do not work. In 2011, after a loss to Tsonga at the ATP World Tour Finals in London, here's how the Majorcan player analysed the situation: "I did not play well. My game in the third set was a disaster. But well... You have to accept it and get back to work. I probably have a little less passion for the game at the moment because I'm tired. The season has been tough despite positive things and I have to accept it and learn from it to be ready for the start of next season. In a career, there are ups and downs. My motivation is still there and I'll do my best to come back. Each day, I will try to improve something in my game. If in the end it's not enough, I'll have no regrets and I'll be proud of myself."

Getting back to work and focusing on the Progress booster when results are not happening or there is less enjoyment is the Spanish champion's way of solving the problem. However, it is also essential to focus on that Progress booster in times of good performance and not only when results are poor. Evidence of this are Sam Sumyk's words, talking about Victoria Azarenka during her amazing run of successive wins in 2012: "After a difficult win in her first match at Indian Wells, we had a little talk and we realised that we were taking things too much for granted. Like if she'd miss a shot in training, we'd go: 'Well, no big deal.' After that, she started working twice as hard. And there hasn't been a moment of sloppiness since."

THE "PERFORMANCE" BOOSTER

In today's society, the cult of performance is everywhere. Only victory matters. Pierre de Coubertin's initial idea that participation is more important than winning ("L'important c'est de participer") has since been replaced with the Olympic motto "Citius, Altius, Fortius" ("Faster, Higher, Stronger"). This three-word expression uses a comparative form with no second part. As is often stated, "nature abhors a vacuum"; therefore, to the following question: "Faster, higher, stronger than whom?", it would seem that the answer is: "Faster, higher, stronger than the others." Because the idea here is indeed to prevail over, dominate, defeat, or, to use a more warrior-like expression, to "kill" your opponent. This cult of excellence at any price which glorifies the ultimate winner, the individual who reaches the top, means at the same time that all the others, i.e. the losers, are not worth much. For better or for worse, the fact is that competitive sport is based on a "winner-loser" system. Can the quest for performance be accomplished only in this context? Is it not possible to think of an alternative vision of competition where interpersonal relationships would be based on a "winner-winner" scenario? What if the answer to the question: "Faster, higher,

stronger than whom?" was: "Faster, higher, stronger than myself?" What if the quest for excellence, rather than being about comparing oneself to others was about comparing oneself to oneself; what if it was about a constant search for improvement without demeaning others or feeling demeaned by others' performance? The opponent, far from being the enemy, becomes an individual that helps you reveal your hidden potential and become aware of your strengths and areas for improvement.

In an interview given a few years ago after a loss to Federer, Andre Agassi, then still an active player, had the following to say to a journalist who was asking him about his possible retirement: "As long as I see that my opponents have to raise the level of their game to near perfection against me to be able to win, as long as I have opponents like Federer who force me to dig deep to raise my level of play, and that I'm physically able to play, win or lose, I'll keep playing."

For Agassi, the purpose of competition was for both players to emerge stronger from the contest. In other words, regardless of the outcome, the more my opponent makes it hard for me, the more he forces me to improve. Similarly, the more I make my opponent's life difficult, the more I make him progress. The purpose of a tennis match is no longer to win, but to improve and make my opponent improve. As a result, when both players come out of the court after their match, there is no longer a winner and a loser, but two winners and one victor. This year, at the French Open, there wasn't one winner and 127 losers, but rather 127 winners and one victor!

Many players who go through a period without any significant results use the strategy of small victories. To do this, they put their ego aside and humbly choose to compete in smaller tournaments. This is precisely what Benoît Paire did when, after dropping to 135 in the rankings in January of this year, he decided to play in Bressuire, a Futures tournament: "It's tough to drop in the rankings when you've been as high as number 24. It's not easy mentally, but I have to accept this situation. I'll do whatever it takes to get back to my best level. That's why I'm here. The goal this week is to play as many matches as possible, have good training sessions and see if my knee holds up! I'm here to win matches and why not go all the way to start my season on a positive note. But I also know that I might lose in the first round." After winning this Futures tournament, he went on to play 3 challenger events, winning two of those and finishing as the finalist in the third. Thanks to this strategy of small victories, he was able to get back to the top 100 by early April but, most of all, he was able to gradually rebuild his confidence.

CONCLUSION

The secret behind constant motivation: combining the four boosters

Now aged over 30, where does Serena Williams get her motivation from? Here's how the player with the most singles and doubles titles in the history of Grand Slam tennis explains it: "I love playing tennis and I love winning. What keeps me going is the fact that I'm healthy and that I win. When things are going this way, I simply want to maintain this momentum, and keep on progressing and trying to win. But if I lose, what keeps me going is something totally different: I then want to find out why I lost and what I can improve and if I'm still able to do it." In two sentences, Serena Williams combines three of the four boosters. First, the Enjoyment booster: "I love playing tennis"; second, the Performance booster: "What keeps me going is the fact that I win"; third, the Progress booster: "I want to keep on progressing; I want to find out what I can improve". Later, the American player adds: "Before when I was winning, I would win one, two, three or four Major titles whereas now, one Grand Slam trophy means a lot more to me. It has more meaning in the history of the game." The only booster left to explain how this amazing champion managed to maintain her motivation was the fourth and final one, i.e. the Meaning booster: during her career, she was able to combine the four motivation boosters through constant determination. And that is the reason why she has become a role model for many aspiring players.

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RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

Learning movement by awareness

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ABSTRACT

This article reviews a special approach to the learning and teaching of technique. For tennis players, movement awareness and understanding implies full body awareness. Improving your body schema is the foundation for efficient technical learning. As part of body and mind training, repeating good and fundamental technical habits, first at a very slow pace with a progressive increase in speed as skills improve, is surely an approach that is worth considering.

Key words: Technique, motor learning, movement

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INTRODUCTION

This article is a testimony inspired by a long conversation I had many years ago with a physiotherapist friend responsible for the rehabilitation of accident victims with motor injuries. He was sharing his views on how he could help these recovering patients experience again the motor actions that had been "lost" following their accident. This led to some deep thinking and, ultimately, to a special approach to the learning of technique. All the experiences that I'd like to share with you are all based on well-known scientific principles. But my intent here is not tell you about things which, in some social circles, would surely make an impression. My commitment to helping my students improve is what drove me to deepen my analysis of organised movement, a true miracle of nature.

We are all on a daily basis confronted with technique and its teaching, from mini-tennis to all other levels of practice. Our education, our experiences (deliberate or not), as a player or a teacher, the continuous search for improving our own teaching methods are such that we develop a "sensitive" attitude toward the notion of "transmitting" technical skills. But before going further, what would be an appropriate definition of the word "technique" for tennis? The following two suggestions come from the Larousse dictionary:

"A set of processes and practical methods specific to an activity"

"A person's practical knowledge and skills for the carrying out of a specific task"

When reading these definitions, supposing we do so with the eyes of a teaching professional, we see two very distinct aspects, namely technique from a global perspective (body of methods), on the one hand, and technique from a person-centred perspective (individual skill), on the other.

Once we figure that out, we're on the right path!

Indeed, both perspectives complement each other: mastery is primarily a level of technical mastery, know-how and ability! In the case of individual technical flaws, this translates on the court as a "messy" spatial and temporal organisation. Technique therefore reflects a person's cognitive organisation. In my last article, I was discussing motor actions whose execution is inevitably supported by a rhythm, motion range and balance specific to each action, in accordance with technical and mechanical fundamentals. I know what you're thinking about this "fundamentals" word, an overused term to describe a blurry notion, not sufficiently clarified and thus often forgotten! I therefore suggest that we take, as an illustration of this fundamentals concept, the example of the search for a contact point in front of the body and two of its direct mechanical consequences, i.e. the maintenance of an optimal contact point and the follow-through action of the arm over the shoulder.

A picture is worth a thousand words...

What does this picture tell us? I'm not sure for you, but for me it illustrates "perfection": balance of both arms on the same level, head (and eyes) focused on the ball impact which, in turn, allows for optimal core stabilisation during rotation, full extension of the right arm with delayed elastic action of the wrist and forearm, and forward movement of the right shoulder in the natural direction of the shot all serve as the foundation for a contact point in front of the body; all this is executed with no apparent effort, no visible strain!

Looking at Federer's execution of this forehand, one can only see how fluid and effortless this player is. His balance is perfect!

The impression that he gives us, during this motor action, is that he is fully aware of the unity of body and mind: he feels the movement!

The awareness of the technical action is inextricably linked to the awareness of the spatial interactions between all body parts, from start to finish of the movement. There is nothing automatic about this movement; quite the opposite: it is the result of pure determination!

The continuous and deliberate search for a contact point in front of the body is only possible if the intention is to organise the body position with minimum effort for optimal performance. Only through a strong and permanent awareness of the mechanics and organic sensations can this action be repeated each time with the same efficiency.

BODY SCHEMA OR FEELING ONE´S BODY

From a very simplistic and holistic perspective, a controlled motor action is an action whereby bones are moved by muscles working in kinetic chains with alternating contraction and relaxation phases, the whole action being controlled by the CNS. The specificity of this action is that, at any moment, it can be stopped, adjusted, reversed or replaced with a different action than the one originally planned. This is why we are in the field of voluntary movement. The action being voluntary, this means that it can be acted upon, controlled;

it's no longer something that you do, but something that you "live"!

Living is feeling, feeling is being alive!

During any technical and motor learning, the efficiency of our actions and adaptation skills depend, from early childhood, on our self-image. We act and react according to our self-image! That is why we cannot separate the body from the mind, because both develop together through a subtle mix of nature (innate qualities) and nurture (social, emotional, sentimental, educational and, of course, psychomotor experiences that we have from an early age, even before we say our first words). Self-image is therefore something we inherit without us being aware of it.

Gradually, through the simultaneous action of nervous system maturation, challenging sensory and motor experiences and the support of our caring family and friends, we become aware of our body. It can therefore be said that the child acquires a sense of psychomotor balance and that this "learning" goes on throughout the different experiences in life, until adulthood. This is how body schema, awareness of our own body, develops, whether our eyes are open or closed, whether we are in the dark, in the water, on the sand, seated, lying, alone or with other people, in front of a mirror, whether we stand still or not, whether we prefer to use our right eye/hand/foot/leg or our left one (or both); in other words, it develops in all the situations that we no longer pay attention to until we are actually confronted with a specific situation or a new psychomotor requirement such as "hitting the ball in front of the body".

OVERCOMING THE FALL

This is an interesting notion that we cannot dissociate from the concept of balance, also very interesting.

As long as we are physically able and in good health, physical balance is a natural quality. However, we forget that, as a child, we used to crawl and that learning to walk bipedally, although part our natural development, was not an easy thing! Balance is a STRENGTH that prevents us from falling. Balance disruption is therefore synonymous with falling and loss of control. Losing your physical balance has an impact on your psychological balance. Can you imagine the psychological consequences that repeated falls would have on you? How would you feel? What image would you have of yourself? Fear of falling is extremely common, it's in our genes. If you think about it, in highly technical sports, one of the biggest challenges is to avoid falling. Falling is the beginning of failure and I'm quite certain that skaters, skiers, dancers, cyclists, boxers, football players, gymnasts, hikers, golfers, and even tennis players, would agree with me! Let's reflect on this for a moment and visualise each sport by incorporating this concept of falling. Do you see what I'm getting at?

I think we've managed to identify something that we no longer pay attention to in our daily lives. And in our daily lives, our role as sports educators is to enable our male and female players to learn and understand HOW TO overcome the "technical fall", as the expression of a non-controlled and forced movement.

A little earlier, we discussed body schema and the awareness of our body. Have you noticed that our arms, legs, head, and trunk have a certain mass? Have you noticed that depending on their spatial position and movement, their mass (with or without the addition of a device to be controlled) changes due to the shift of their centre of gravity? What is the action of gravity upon a body on Earth according to Newton's law? That's right: the free fall of that body! All the permanent changes to our body schema, during a technical motion, are detected by a neurological system made of extremely sensitive kinaesthetic, proprio- and exteroceptive sensors.

Let's not forget that the main technical goal that we have set is to "hit the ball in front of the body" through repetitive, voluntary and controlled movements. For us to be able to achieve this goal over and over again, considering that body schema itself is never, during our entire life, the same twice in a given situation, all nervous sensors work together for a precise "modelling" of the action to be be performed, thus creating the illusion of a motion that can be repeated in the same way indefinitely.

What is the best "anti-fall" technique that you should teach?

If you look closely at today's male and female champions, you notice that all of them look for a level of technical and mechanical efficiency that allows them to achieve the most efficient production of energy (moving the ball forward) with minimum effort. This pursuit of body and mind unity invariably results in fundamental segment and joint "via points". Although every player has their own style (their technique is easily recognisable), the constant search for balanced movements executed with the correct rhythm and range of motion is what is commonly called "the right action at the right time".

In our profession, we often hear people say that there are no rules; implying that there is no universal method, that everything is good. I agree that there are no rules, but you need to know them! There are no rules, but the ones that we all know are the so-called "technical fundamentals". And these fundamentals are the exact illustration of what balance should look like from a mechanical point of view.

Here is our challenge: teaching technical skills that are smooth, non-restrictive, biomechanically efficient and non-traumatic; skills that can be felt and understood by the player. Not an easy task... but these fundamentals exist; you only need to draw on the best players' stroke mechanics!

In this article, my intention is not to describe and classify the basic technical skills that are common to tennis champions. It is rather to share with you my thoughts about the idea we have of what teaching of correct, fine, adapted, controlled, progressive and repeatable technical actions should be in all situations of... imbalance!

SHADOWING

This brings me back to this notion of body schema and the continuous struggle to overcome imbalance. Among the solutions available to us is a wide range of teaching tools designed to help players understand their body in relation to the technical actions that we ask of them. Shadowing is one of those tools. We'll describe shadowing as an action without any physical contact with the ball. Though not physical, the contact is nonetheless mental through visualisation such that the mental feeling becomes a physical sensation. In this case, let me continue...

Why is shadowing of any interest to us? It's quite simple to understand really. The use of shadowing makes it possible for body schema to truly "connect" to the action to be learnt via all the nervous sensors we talked about earlier. The trick, if I may use this word, is to perform the technical action at a very slow pace. This slow pace allows the CNS to register (encode) each piece of information very precisely and in a controlled way. Any change in balance control, whether caused by trunk or hip rotation, shoulder elevation, arm extension, head tilting, or knee bending, implies a postural and kinetic adjustment that, if performed at a slow pace, amplifies the sensation of heaviness in the various segments involved. This

increased sensation of heaviness forces the body to counteract muscle tension in order to overcome gravity. Let's illustrate this with an example: on a table is a one-and-a-half-litre bottle (of water!). I grab it and move it to another table at an unconscious pace.

A rather common daily task. I now repeat the same action using a container filled to the brim with the same quantity of water. This time, because I don't want to spill the water, I perform the action at a very slow pace with increased visual concentration and a totally different muscular control. The one and a half litre of water feels heavier in the second scenario. This can be explained by the physical laws of kinetic energy, which are way too complicated for me! In any case, what matters is that the technical action was truly felt, due to the increased heaviness sensation. The CNS learns through slow and heavy-feeling movements, allowing the tennis player to become aware of their body schema, and learns from the inside, the outside becoming then less important. Isn't it the impression that we have when we see Roger focus on the ball the way he does?

The advantage of this teaching method is that it develops kinaesthetic, proprioceptive and exteroceptive sensitivity: slow movements, combined with the sensation of heaviness, enhance sensitivity. This method is also interesting because it allows coaches to instantly correct the positioning of any segment, something which is not possible with the use of slow-motion video.

With the alternating use of "real" play and "shadowing", we notice real learning transfer through very powerful feedback. What does a golfer do before a drive or a putt if not shadow swings?

To continue with this idea of feelings that can be transferred to tennis, we can also mention Tai chi. This practice, known for its slow and measured movements, should not be seen as a collection of oriental postures, but rather as another powerful tool to develop body schema. One of the many principles of tai chi is to perfectly isolate the different muscle groups through contractions and relaxations during each posture. By learning to slowly isolate agonist and antagonist muscles using the vertebral axis as the origin of the movement, you're able to harmoniously activate all planes and axes in a combined and synchronised fashion (figure below). Similarly to what happens for shadowing, refocusing can only happen through a "sensitive understanding" of the movement.

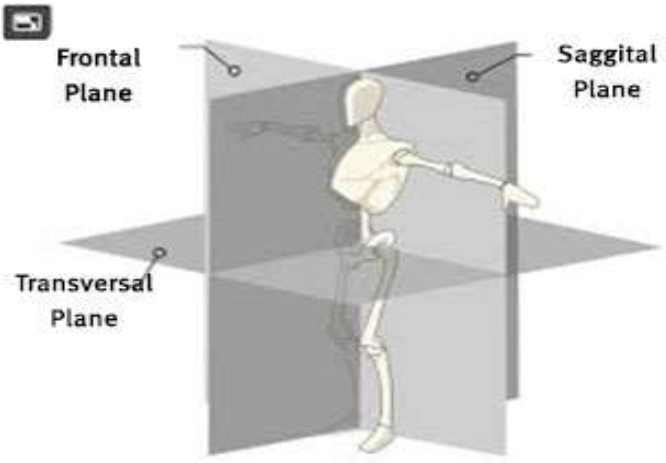

Figure 1. Anatomical Planes.

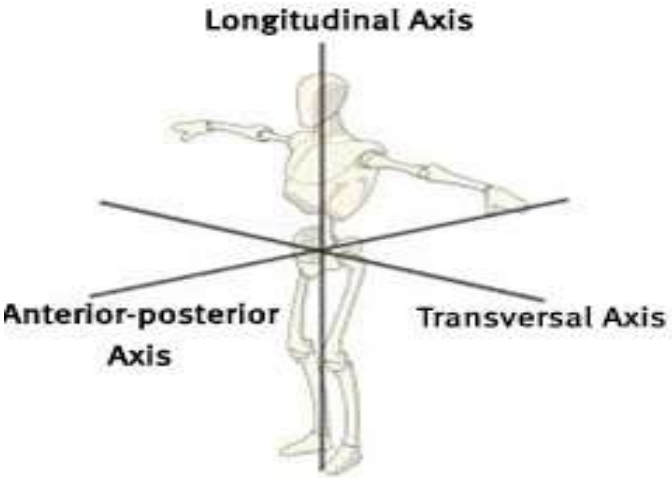

Figure 2. Anatomical Axes.

Through slow execution and the resulting awareness of gravity, tai chi offers a variety of mechanical via points similar to tennis.

Finally, we cannot conclude this article on movement awareness without mentioning the importance of psychomotor activities performed with the use of a mirror. The mirror used can be real and, in this case, the player sees and perceives themselves as "their own spectator"; their image is reversed, but that does not change the fact that they're looking at an image of themselves. The player has both an external (they see their image) and internal (the feel) perception of themselves. From a psychological and neurological perspective, it is quite fascinating! If the "mirror" used is the coach or a partner, the goal is then to become the perfect reflection of the other. As with shadowing, this activity should be performed using the "slow and heavy" principle. In this mirror game, the teacher's responsibility is to ensure the technical execution is smooth and in line with the fundamentals.

CONCLUSION

As a tennis player, movement awareness and understanding implies full body awareness. Improving your body schema by listening to your feelings is the foundation for efficient technical learning. As part of body and mind training, repeating good and fundamental technical habits, first at a very slow pace by alternating shadow swings and actions with the ball with a progressive increase in speed as skills improve, is surely an approach that is worth considering! In conclusion, I recommend that you take a look at what happens technically when a player is asked to vary their hand pressure on the grip...

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TECHNIQUE DEVELOPMENT IN TENNIS STROKE PRODUCTION

Authors: Bruce Elliot, Machar Reid, Miguel Crespo Year: 2009. Language: English. Type: e-book. Level: Advanced. Year:2009.

The ITF Technique Development in Tennis Stroke Production e-book aims to outline the mechanical basis of stroke development from a scientific perspective. What science tells us about stroke production in relation to player development, not opinions, forms the basis for understanding stroke structure over various developmental stages. This is one of the resources that form part of the ITF Coaches Education Programme, which is currently being used in over 80 of the ITF´s member nations. Complete with practical examples and theoretical information, this ITF publication reflects the ITF´s ongoing role in making available the most up-to-date tennis-specific training information to players and coaches worldwide. Please click here to purchase your copy.

DEVELOPING YOUNG TENNIS PLAYERS

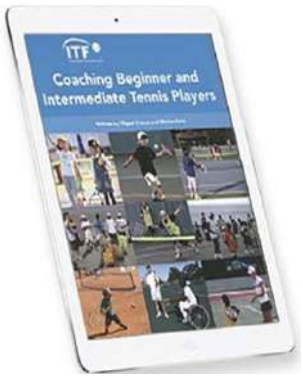
Authors: Miguel Crespo, Gustavo Granitto, Dave Miley. Language: English, French and Spanish. Type: e-book.
Level: Intermediate and advanced. Year: 2002.

ITF Developing Young Tennis Players is a manual for working with 10 to 14 year old tennis players. It presents the principles and fundamentals of the International Tennis Federation Programme for 14 & Under Players. This book also presents more than 50 tennis drills and exercises directed to junior tennis players. The drills in this e-book are presented in a progressive way, by using the criteria of the modern teaching methodology. If you are a tennis player, coach or parent, ITF Developing Young Tennis Players has everything you need to improve your knowledge in junior player development. Please click here to purchase your copy.

STRENGTH AND CONDITIONING FOR TENNIS

Authors: Machar Reid, Ann Quinn and Miguel Crespo. Language: English and Spanish. Type: e-book.
Level: Intermediate and advanced. Year: 2003.

The ITF Strength and Conditioning for Tennis e-book provides a detailed analysis of strength and conditioning specific to the tennis players. Complete with theoretical information and practical training exercises from some o the tennis world;s leading physical training experts, this publication reflects the ITF's ongoing role in making available the most up-to date tennis specific training information to players and coaches worldwide. Please click here to purchase your copy.



COACHING BEGINNER AND INTERMEDIATE TENNIS PLAYERS

Authors: Miguel Crespo and Machar Reid. Language: French and English. Type: e-book.
Level: Beginner to advanced level. Year: 2009.

This e-book (320 pages) forms part of the ITF Coaching Beginner and Intermediate Tennis Players (former Level 1) syllabus. Designed for coaches working with beginner and intermediate players in schools and clubs, the manual is one of the few tennis resources that provides comprehensive information, both practical and scientific, on all elements of the game as related to coaching players of these playing levels. It includes practical and theoretical information on coaching knowledge, applied sport science, tactics and technique, biomechanics and movement, physical conditioning, programmes, plus much more. Please click here to purchase your copy.

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