

Motivation & Enjoyment in Tennis

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2. Abstract

Guided by Self-Determination Theory and Cognitive Evaluation Theory, the present study examined the relation between sport motivation and enjoyment in tennis players at three levels: elite, wheelchair elite and recreational ($N=116$). Participants were asked to fill in a questionnaire. In line with other studies, results showed that tennis players with a high intrinsic motivation showed significantly more enjoyment compared to tennis players with a low intrinsic motivation. The results revealed also that there were no differences in self-determination behavior between the three groups. Finally, wheelchair-elite tennis players show less enjoyment compared to the recreational and elite tennis players. The self-determination theory and cognitive evaluation theory explain these results for some parts, but having a high achievement orientation and the perceived competence of the tennis players can be another explanation.

3. Introduction

I used to live in a house with a big, grassy yard across the street. I loved sitting on the porch in the evening and staring out into the peacefulness of that yard. It wasn't started mine but felt like it was. Then one day neighbourhood kids started playing in the field. They were so loud and noisy, they were ruining my evening peace. I tried yelling at them to please go somewhere else, but that only made it worse. So I devised a plan to get rid of them.

I walked to that yard one day and told the children I had changed my mind and actually enjoyed their playing so much that I would give them each a quarter if they would keep playing in the yard each evening. I did that for about one week. I could tell they were please as punch for taking money when they already loved to play on the site. After a week, I told them I was running out of money and could only give each one a dime. After another week, I said I could only afford a nickel. A week later I walked over one more time and said, "I'm sorry, but I'm so low on money, all I can afford is a penny for each of you." They all looked at me as if I were nuts and said, "Forget you, we're not going to come play here for a lousy penny. We're going somewhere else." And they did. (Kimić, 2002, pp. 28-29).

The story above is a well known phenomenon in psychology. Especially in the psychology of sport and exercise. More and more athletes are earning much money with an activity that started as their hobby which in due course turned into their job. Professional tennis players, soccer players, basketball players, ice hockey players and so on, earn millions a year by winning sport matches (and sometimes that isn't even necessary). To become a professional athlete, you have to put a lot of effort in your sport for several years, without having the certainty that you will become such an athlete. Actually, you have no certainty at all, but still you have to do everything that a human being can do to become an elite athlete. Robin Haase, the number 1 in Holland in tennis and number 59 of the world (as we speak) emailed me; "From the very first moment I got in touch with tennis, I was totally in love with the sport... and I still am". But what happens if athletes, so in love with their sport, get rewards like millions of dollars a year? Will their motivation increase, or perhaps decline? The story above illustrates that receiving external rewards induces the motivation to display a certain behaviour. This survey aims to set out how external rewards (like prizes and points)

have an influence on the self-determination behaviour and enjoyment of tennis players. This survey has been structured as follow. In the theoretical section I will discuss the theories and studies involving this matter (motivation, self-determination, cognitive evaluation and enjoyment). In the next section I will give a further explanation of my study. Then the results of my study are presented, followed by a discussion of these results.

3.Theories

3.1 Motivation

Maslow (1972) is a major contributor to the theories of motivation. He argues that human beings are born with a tendency to strive for self-actualization. This self-actualization is a construct which is built on (among other things) autonomy, competence and relatedness. This theory has been further developed by Harter (1978), followed by Deci and Ryan (1987) with the self-determination theory.

Generally, there are two ways in which an athlete can be motivated (Harter, 1978). People can be motivated from within, called intrinsic motivation or people can be motivated from outside, called extrinsic motivation. When people are intrinsically motivated, they have the feeling of autonomous and free participation (Cox, 2002). Intrinsic motivation can be defined as doing an activity for itself, out of interest, and for the pleasure/satisfaction derived by simply performing it (Deci & Ryan, 1985). An example of intrinsic motivation toward sport would be a tennis player who goes to practice because (s)he finds it interesting and satisfying to learn more about tennis. In other words, tennis players are attracted to tennis for the direct experience rewards, such as the feeling of excitement or personal competence.

There are three ways of intrinsic motivation (Cox, 2002). The first one is intrinsic motivation for knowledge: This means, for example, that you want to know how a certain technique is learned. The second way of being intrinsically motivated is for completing some goals you have and the feeling of accomplishment you experience. The last way one can be intrinsically motivated is to experience stimulation, that means (s)he wants to “feel” when (s)he is playing. (s)He wants to experience the feeling that someone has when he hits a ball (when playing tennis or golf), or that he wants to feel the rushes when playing soccer.

Intrinsic motivation has positive correlations with other constructs in sport psychology, for

example with a decreased experience of time (FLOW) (Conti, 2001), program attendance and subject's confidence in their intentions to continue exercising post-program (Oman & McAuley, 1993), effort and persistence (Ferrer-Caja & Weiss, 2000; Pelletier, Fortier, Vallerand & Brière, 2002), exercise adherence (Ryan, Frederick, Lepes, Rubio & Sheldon, 1997), increased participation (Tsorbatzoudis, Alexandris, Zahariadis & Grouios, 2006), positive perception of physical activity (Alderman, Beighle & Pangrazi, 2006), more time spending playing the game in a free time period (Iwasaki & Mannell, 1999), sport commitment and enjoyment (Zahariadis, Tsorbatzoudis & Alexandris, 2006) and interest and enjoyment (Reeve, 1989).

When you are motivated for example to win prizes, honour or respect, everything that lies outside the person, it is called extrinsic motivation (Deci & Ryan, 1987). Extrinsic motivation pertains to a wide variety of behaviours where the goals of action extend beyond those inherent to the activity itself. Tennis players who practise for the prestige of being an athlete or to show others how good they are, display extrinsically motivated behaviour. Extrinsic motivation has negative or less clear links to other variables than intrinsic motivation (Morris & Summers, 2004). An important theory that further explains the bipartition of the athletes motivation is the self-determination theory.

3.2 Self-determination theory

The self-determination theory of Deci and Ryan (1987) explains the different ways of motivation. According to them a human being has three basic needs, the need for autonomy, the need for competence and the need for relatedness to others, like Maslow (1972). Sport and exercise activities can fulfil these needs in order to create a healthy psychological life (Vallerand, Deci & Ryan, 1987). Research has focussed mainly on the first two needs. The self-determination theory starts on a continuum for the different forms of motivation with amotivation and at the other end there is intrinsic motivation (Vallerand, Deci & Ryan, 1987). In between these two extremes is external, introjected, identified and integrated motivation. It depends on the perceived locus of causality at which level you are (Vallerand, Deci & Ryan, 1987). Perceived locus of causality refers to the beliefs individuals hold about whether forces internal or external to their self initiate their behaviours (Morris & Summers, 2004). Cox (2002) states that amotivation means that there is no motivation at all for the activity. External

regulation is motivation controlled by external factors, like rewards or constraints. With introjection, the formerly external source of motivation has been internalized such that its actual presence is no longer needed to initiate behaviour. Identified regulation is being motivated for something external but the choice to do this lies within, for example, athletes who participate in sport because they feel their involvement in this sport contributes to a part of their growth and development as a person. In sum, the more internal locus of causality one perceives, the more motivation from within will be displayed. Figure 1 illustrates this.

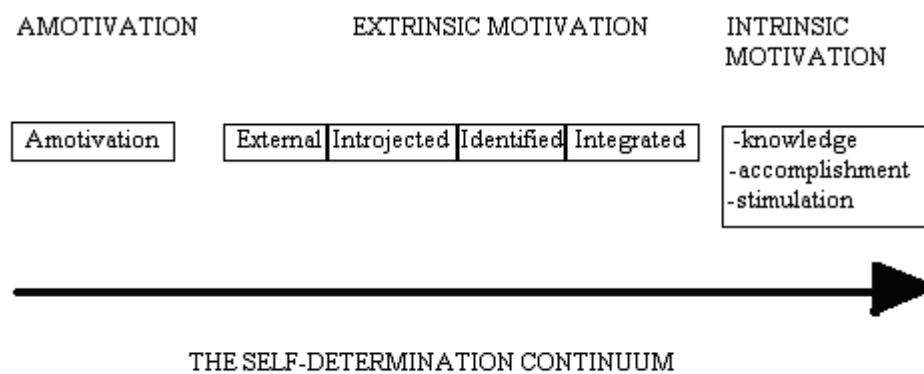


Figure 1: Self-determination continuum (Cox, 2002).

3.3 Cognitive Evaluation Theory

The application of this continuum has led to the development of a body of knowledge about how factors such as rewards, feedback and competition can enhance or undermine one's intrinsic motivation. The theory that describes the way this could work is called the cognitive evaluation theory (Deci & Ryan, 1985). It explains intrinsic motivation by stating that it comes from the organically need for competence and self-determination and that all the information a person can get about his competence and his self-determination will have an effect on intrinsic motivation. According to this theory, inputs relevant to the initiation and regulation of behaviour can serve to promote or infringe upon self-determination and/or facilitate or inhibit competence (Vallerand, Deci & Ryan, 1987). Thus the cognitive evaluation theory predicts that intrinsic motivation will be enhanced or maintained as long as

the involvement fulfils the need to feel competent and self-determining. The outcome (success and failure) represents an important social factor in sport (Vallerand & Losier, 1999).

Experiences like rewards, feedback or competitive elements can be perceived as a controlling aspect of their autonomy and competence (Cox, 2002). It is important to note, that this theory does not describe what the external forces are, but the way they are perceived by the athlete. In fact, perceived competence can be accounted for much of the changes in intrinsic motivation (Vallerand & Losier, 1999). Summer and Morris (2004) note that any feedback that promotes a sense of competence will have a beneficial effect on intrinsic motivation, in contrast to feedback that undermines perceived competence which will lead to decrease of intrinsic motivation. The use of rewards works the same way. When a reward is perceived as controlling it will reduce the intrinsic motivation, but if an athlete can perceive a reward as a positive reflection of competence, it will increase intrinsic motivation. Figure 2 gives us a clear view how this could work.

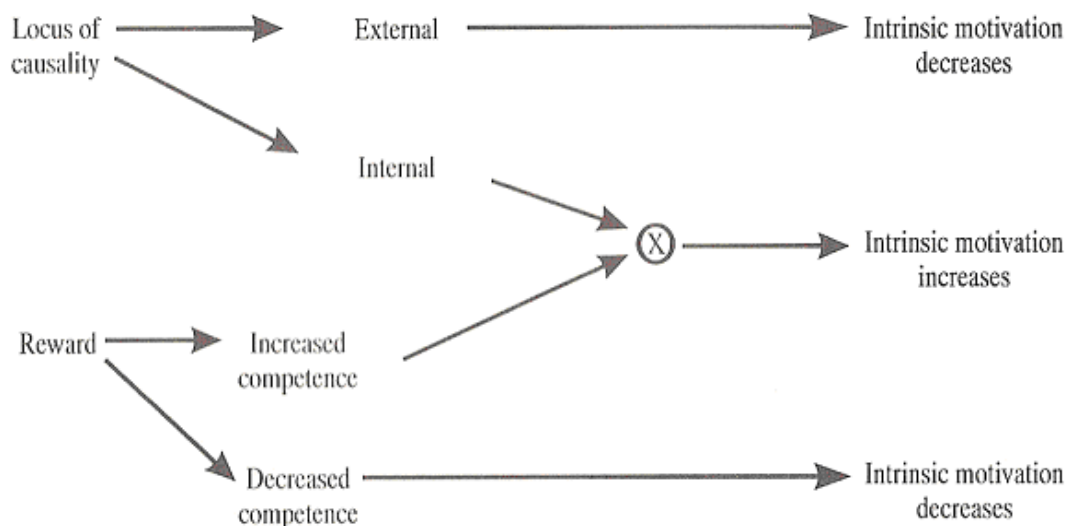


Figure 2: Cognitive Evaluation Theory (Hardy, Jones & Gould, 2001)

Cognitive evaluation theory asserts that underlying intrinsic motivation are the psychological needs for autonomy and competence. Hence, the effects of an event such as a reward depend on how it affects perceived self-determination and perceived competence, it depends on the interpretation of the athlete (Deci, Koestner & Ryan, 1999). In contrast, when a reward is perceived as an informational cue of his competence, his intrinsic motivation will increase.

Wan and Chiou (2007) examined adolescents who were addicted to computer games and their results showed that expecting to obtain rewards would undermine intrinsic motivation. Secondly, if the external rewards were of high relevance this would also undermine one's intrinsic motivation. Thirdly, substantial rewards (such as money, candy, grades) would also undermine intrinsic motivation, and finally, if the same rewards were given to every participant in the game, intrinsic motivation was also undermined. This was not a sport-situation (perhaps the addictive players will disagree) but the results that were found are worth mentioning, because rewarding tennis players could also be influencing their intrinsic motivation, just like the computer game addicts.

A meta-analysis (Cameron and Pierce, 1994) that examined the effects of extrinsic rewards on intrinsic motivation, concluded that, overall, rewards do not decrease or increase intrinsic motivation. According to Deci, Koestner and Ryan (2001) these results were found because, "we believe the problems with their meta-analysis made their conclusions invalid, because we agree that a useful critique of their article must involve reanalysis of the data, and because the issue of rewards effects on intrinsic motivation is extremely important to educators, we performed a new meta-analysis of rewards effects on intrinsic motivation" (p. 2). In this new meta-analysis of 128 studies (Deci, Ryan & Koestner, 1999), they showed that engagement-contingent rewards (participation ensures a reward), completion-contingent rewards (completing a task ensures a reward) and performance-contingent rewards (in comparison with others you can get a reward) significantly undermined free-choice intrinsic motivation, as did all tangible rewards, all rewards and all expected rewards. Tangible rewards will tend to be experienced as controlling and as a result of this they will tend to decrease intrinsic motivation, according to the cognitive evaluation theory. Especially when the tangible rewards are expected, they will be experienced as controlling (Deci, Koestner & Ryan, 2001). The problems with these meta-analyses are that they examined school-situations while I am examining a sport-situation. However, it is a matter of debate if there is a real difference between them according to motivation theories.

Other aspects that can influence someone's perceived locus of causality can be his interpersonal behaviour (Pelletier, Fortier, Vallerand & Brière, 2001). According to cognitive evaluation theory, a controlling interpersonal style should bring about an external perceived locus of causality and thus undermine feelings of autonomy and correspondingly, self-determination. In contrast, the autonomy-supportive way of interpersonal style should lead to

more self-determination (Pelletier, Fortier, Vallerand & Brière, 2001). Other results (Pelletier, Fortier, Vallerand & Brière, 2001), involving swimmers, showed that this is actually what happens. Perceiving the coach as controlling will decrease the perceived locus of causality and the self-determination, so the intrinsic motivation is less with the swimmers who perceive their coach as autonomy-supportive.

Iwasaki and Manell (1999) showed in a study that situational and personality influences effects intrinsic motivation. In this study they examined if the degree of self-determination, competence, commitment and challenge were important factors in different situations (autonomy-supportive / controlling condition) on influencing intrinsic motivation. The results suggest that both person and situation need to be taken into account to understand a person's intrinsic motivation in an activity. Another aspect that has to be taken into account, is that high achievers do not display a loss of intrinsic motivation, even under highly competitive conditions (Harackiewicz, 1989). Individuals high in achievement orientation enjoyed a word game more in competition than those low in achievement orientation across conditions of positive and negative feedback, see below. (Tauer & Harackiewicz, 1999).

3.4

Enjoyment

It is very difficult to give a clear explanation as to what enjoyment is. According to Kimiecik and Harris (1996) the question of what enjoyment exactly is, cannot be answered, because it depends on your philosophy of science. The present study aims to investigate how much enjoyment tennis players perceive at different levels, so I've decided to stick with the following description of enjoyment: it is a positive affective response to the sport experience that reflects generalized feelings such as pleasure, liking and fun (Scanlan & Simons, 1994). They propose that discovering the different and diverse aspects of enjoyment in sport is critical to comprehensive understanding of positive affect and its relation to extended sport involvement. Inherent to this is that enjoyment underlies greater commitment to sport (Kimiecik, 2002). Ryan, Frederick, Lepes, Rubio and Sheldon (1997) examined the adherence of Tae Kwando and aerobic classes, and the results showed that enjoyment was associated with adherence and intrinsic motivation.

In general, enjoyment has often been discussed with regard to intrinsic motivation. In my opinion enjoyment is a broader and more inclusive construct than intrinsic motivation,

because a person can also enjoy extrinsic rewards. Keeping in mind that professional tennis players acquire a tremendous and almost perfect repertoire of strokes, it would be hard for them to enjoy their sports if enjoyment is derived only from achievement behaviour that is intrinsic motivating. The principle motivational effects of enjoyment are the willingness to continue and persist in the activity (Reeve, 1989). Enjoyment also contributes in an important way to adherence and psychological benefits from physical activity (Wankel, 1993).

Scanlan and Simons (1994) argue that to equate sport enjoyment exclusively to intrinsic motivation, it is failing to acknowledge extrinsic sources. Boyd (1996) examined which variables can predict enjoyment, and his results showed that there are other variables than intrinsic motivation that influence enjoyment. The most important predictor of enjoyment was perceived competence. Other predictors of enjoyment were social recognition and ego involvement (external sources). Many studies have found evidence that there is a strong correlation between intrinsic motivation and enjoyment (Martens & Weber, 2002).

Zahariadis, Tsorbatzoudis and Alexandris (2006) examined if having a high intrinsic motivation is related to enjoyment. Intrinsic motivation showed higher association with enjoyment than the other forms of motivation (external, amotivation, introjection, identification). Another aspect was that enjoyment was a major mediator between intrinsic motivation and psychological commitment to sports, which supports the findings of Scanlan and Simons (1992). Alderman, Beigle and Pangrazi (2006) showed that promoting intrinsic motivation was a contributor to enjoyment of physical activity. Enjoyment is also a strong predictor to stay motivated and sport commitment (Scanlan, Carpenter, Schmidt, Simons & Keeler, 1993). Reeve (1989) states that: “interest contributes to intrinsic motivation by arousing the initiation and direction of attention and exploratory behaviour, while enjoyment contributes to intrinsic motivation by sustaining the willingness to continue and persist in the activity” (pp. 83). He examined if perceived performance predicted enjoyment, and the results confirmed this expectation. Performance satisfaction that will lead to feelings of mastery, efficacy, and competence, relates enjoyment with intrinsic motivation, whereas satisfaction of a drive state or the receipt of tangible rewards relates enjoyment to extrinsic motivation (Reeve, 1989).

Wankel and Kreisel (1985) examined which factors are underlying enjoyment in youth sports. Factors that are rated high as underlying enjoyment are factors that are interpreted as being intrinsic to the sport activity, like excitement of the sport, personal accomplishment,

improving one's skills and just doing the skills, while factors that were extrinsic to the sport activity, like pleasing others, winning rewards and winning the game were rated as least important. By far the majority of the participants indicated that what they liked most about sport were intrinsic rewards.

4. This study

4.1

Research question

The purpose of this study is to test the self-determination and enjoyment at three different levels in tennis. The three levels were divided into: Elite, wheelchair-elite and recreational level. There has only been one study (to my knowledge) that examined the effects of external factors on athletes in adapted sport, using the theoretical constructs of the self-determination theory (Pereault & Vallerand, 2007). In this study the top of the elite of wheelchair tennis players have participated (nr. 1-8 of the world). I compared wheelchair elite players with valid tennis players who earn little money and with full time professionals that play world wide tournaments like Roland Garros, Australian Open, US Open and Wimbledon.

Because the cognitive evaluation theory predicts that rewards, such as money and points, have a decreasing influence on the intrinsic motivation of tennis players (if perceived as controlling). I hypothesize that professional athletes should have less intrinsic motivation compared to recreational athletes. However, as we have seen that intrinsic motivation is linked to various aspects that are important for professional athletes, like persistence, enjoyment, effort (Ferrer-Caja & Weiss, 2000; Pelletier, Fortier, Vallerand & Brière, 2002; Zahariadis, Tsorbatzoudis & Alexandris, 2006) it is important for elite players to have a high intrinsic motivation. It seems that the context of recreational sports is different from competitive sports, where the majority of research on the multidimensional model of motivation was conducted (Tsorbatzoudis, Alexandris, Zahariadis & Grouios, 2006). The main research question in this study is; Is there a clear link between intrinsic and/or extrinsic motivation and enjoyment in tennis? The second question is, whether the three levels (i.e. wheelchair-elite, elite and recreational) of tennis players perceive different self-determination patterns and enjoyment in tennis, or whether there no distinction between the three levels?

The main question in this research is if intrinsic motivation has a relation with perceived enjoyment in tennis, and if this same relation is found in extrinsic motivation. My hypothesis are as follows. Players who perceive low intrinsic motivation display less enjoyment than those who perceive high intrinsic motivation. In contrast, tennis players who have a high extrinsic motivation do not perceive more enjoyment than those who have a low extrinsic motivation. This in accordance with the results of Zahariadis, Tsorbatzoudis & Alexandris (2006), Martens & Weber (2002), Alderman, Beigle and Pangrazi (2006), Wankel and Kreise (1985), Reeve (1989), Zahariadis, Tsorbatzoudis and Alexandris (2006), and Frederick, Lepes, Rubio and Sheldon (1997).

Another important question I want to examine is if there is a different self-determination pattern between the groups. My hypothesis is that the different groups (elite, wheelchair-elite and recreational) will show different patterns of self-determination. The main focus of the three groups is different in tennis. The recreational group is predominantly focussed on intrinsic constructs, such as interest fun, whereas the focus of the other two groups is on extrinsic constructs, such as money and points for the ranking, because those who have to earn their living with playing tennis (elite/wheelchair-elite) are dependent on that outcome. This will lead to differences in their self-determination pattern (Deci, Ryan & Koestner, 1999). More specifically, in the first place I expect the elite players and wheelchair-elite players to exhibit lower levels of self-determined forms of motivation, that is, less intrinsic motivation to know, to accomplish things and to experience stimulation. I also expect the elite and wheelchair-elite to display higher levels of non self-determined types of motivation that is, more amotivation and extrinsic motivation. This hypothesis is based on the study of Fortier, Vallerand, Brière and Provencher (1995) that showed that competitive athletes demonstrated less intrinsic motivation to experience stimulation and less intrinsic motivation to accomplish things than recreational athletes, while exhibiting more identified regulation and more amotivation than this group. Another study (Medic, Mack, Wilson & Starkes, 2007) examined if having a scholarship influenced the motivation of athletes. It was found that the scholarship basketball male players perceived more external regulation and

introjected regulation of motivation than the non-scholarship basketball players. They also examined a hypothetical manipulation, whereby the non-scholarship group was granted a scholarship, and the scholarship group did not receive any scholarship anymore. The results showed that the non-scholarship group (who would perceive a hypothetical scholarship) perceived more pressure and playing for the money reduced their enjoyment. The scholarship group perceived the removal of the scholarship as a reduction of having choices to demonstrate their capacities which will induce their motivation. Chantal, Guay, Dobрева-Martinova and Vallerand (1996) investigated elite athletes in Bulgaria and the results indicated that in comparison with less successful athletes, elite athletes displayed higher levels of non-self-determined extrinsic motivation and higher levels of amotivation. In contrast, Vallerand and Losier (1999) state that perceived competence is an important contributor to higher levels of intrinsic motivation. Elite and wheel-chair elite competitors are much more competent than recreational players, but maybe they do not perceive it this way. Research reveals that high achievers do not display a loss of intrinsic motivation even under highly competitive conditions (Harackiewicz, 1989). This means that if the elite are high achievers, they do not show a loss of intrinsic motivation. Perreault and Vallerand (2007) argue that individuals who participate in adapted sport also identify extrinsic factors as an important variable to consider why they are participating in a sport. This would mean that there are no differences between the wheelchair-elite and the elite group.

My last hypothesis is that there is a difference in perceived enjoyment between the three groups. According to the self-determination theory and cognitive evaluation theory, being rewarded for an activity leads to less intrinsic motivation and more extrinsic motivation. Because intrinsic motivation has a strong relation with enjoyment and extrinsic has not, the recreational tennis players should perceive more enjoyment than the elite and wheel-chair elite. Kavussanu and Roberts (1996) did a research with beginning tennis classes where they found strong evidence that having a mastery climate, meaning that the environment (i.e. coach, feedback) is focussed on completing tasks and mastering skills, is a strong contributor to intrinsic motivation and experiencing joy in tennis.

Participants

Participants were 116 tennis players with an average age of 25 years (SD=12 years). The elite level competitors (n=30) were tennis players who are playing tennis and receive rewards, such as money and points for the national or international ranking. In this group the minimum amount to be received for playing a match is € 25,- euro's and the maximum amount is € 15.000,- euro's. The average age was 30 years (SD=6 years). The wheelchair-elite (n=10) are the players that played the world championships for wheelchair in Amsterdam in 2007 and so have a ranking of 1-8 in the world (both men and women), with an average age of 21 years (SD=4 years). The recreational level (n=76) consist of people who do not earn money or points but just play tennis with no extrinsic rewards worth mentioning, but they rarely receive rewards. The average age of the recreational group was 26 years (SD=14 year). Participants were from all over the world, Australia, Korea, Japan, USA, Germany, Norway, France, Turkey, Belgium, Hungary, but most participants were Dutch.

Procedure

Participants were asked to fill in the questionnaires. The questionnaires were handed over by coaches, via email or by myself. I explained the type of questions that the tennis players would be asked to answer, the purpose of the study, and explained that confidentiality of their answers would prevail at all times. The questionnaires were completed at home on a computer or with a pencil. Most participants had no problems with the English language, but some people needed extra explanation at certain questions. This was inevitable because there was no Dutch version of the Sport Motivation Scale and there are a lot of international participants who can not read or speak Dutch, so the English version was the only option. Participants who could not understand what the questions were about were thanked for their effort and were removed from the study. Following the completion of the questionnaires, the participants were thanked for their participation.

The purpose was to examine four different groups. The elite group, was first divided into two different groups. The first group originally consisted of tennis players who earned a

living by playing tennis internationally and had a ranking on the ATP (world wide tennis ranking) of 500 or higher, called the elite level. The second group were players who earned money and points by playing tennis, but not enough to call it their jobs. This means that they do not have an international ranking or at least higher than 501 on the ATP. This last group was called second rank elite tennis players. Because the first group only consisted of 6 tennis players who were willing to fill in the questionnaire, and over 50 players have received an email to fill in the questionnaire, I decided to formulate the elite level as follows: every tennis player (without a handicap) who earns money or points or some form of rewards worth mentioning (over 1000 euro a year).

Instruments

Sport motivation scale. To examine the motivational reasons of the tennis players the Sport Motivation Scale (SMS), designed by Pelletier, Fortier, Vallerand, Tuson and Brière (1995) was used. They designed it according to the self-determination theory of Deci and Ryan (1987). In the SMS, athletes are asked, “Why do you practice your sport?”. They are provided with 28 questions, 4 items per subscale, presented in the form of answers to that question, on a 7-point-Likers-scale, from 1 (does not correspond at all) to 7 (corresponds exactly). In the appendix the questions are shown. All items in the questionnaire had loadings over .70. The internal consistency of the seven subscales varied from .74 to .80. The mean cronbachs alpha score was .73 (amotivation $\alpha = .90$, external regulation $\alpha = .76$, introjected regulation $\alpha = .83$, identified regulation $\alpha = .81$, intrinsic motivation to know $\alpha = .78$, intrinsic motivation to accomplish $\alpha = .89$, intrinsic motivation to experience stimulation $\alpha = .85$). Altogether the test can be used for measuring the self-determination of tennis players. The questionnaire is appended to the appendix.

Enjoyment. To test the enjoyment of the tennis players I used a questionnaire containing five questions on a 5-point-Likert-scale, which was used by Deci and Nicholls (1992). The factor loadings of the five items on satisfaction/enjoyment were high: .90, .90, .87, .85, and .82. The questionnaire is appended to the appendix.

5. Results

My main hypothesis was that those players who perceive low intrinsic motivation also display less enjoyment compared to those who perceive high intrinsic motivation. To test this, I divided the intrinsic motivation into two groups, a high intrinsic group and a low intrinsic group. The mean score of intrinsic motivation was 60,03. Scores equal to, or smaller than 60,03 (n=63) were the low intrinsic motivation group, scores higher than 60,03 (n=53) were the high intrinsic motivation group. To examine if there was a difference between the groups, I have performed an ANOVA-analysis with enjoyment as dependent variable, and intrinsic motivation (high/low) as independent variable. The results showed that there was a significant difference between the two groups ($F(8,115)=2,417$, $p < 0,05$). The participants with a high intrinsic motivation had a higher mean score on enjoyment ($M=22,62$, $SD=2,206$) than the participants with a low intrinsic motivation ($M=21,32$, $SD=1,778$).

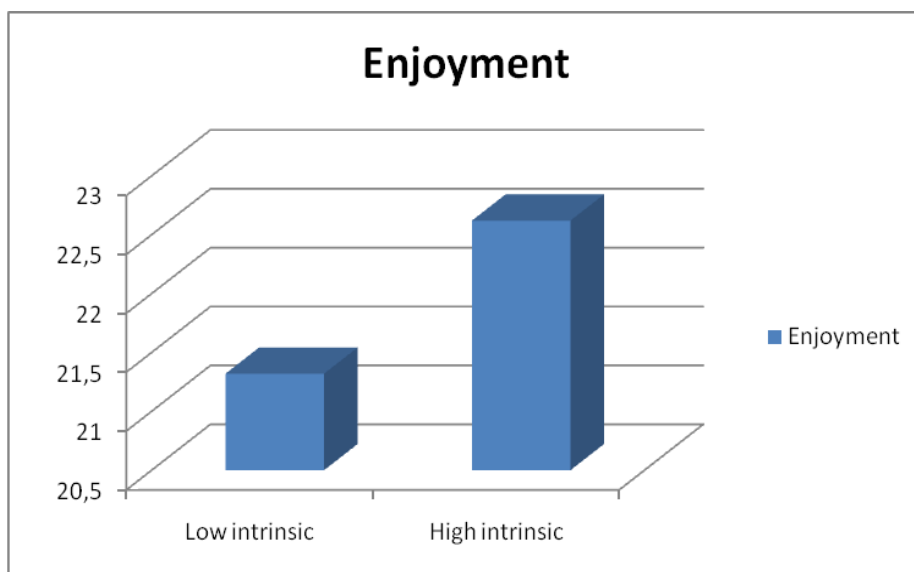


Figure 3: Low/High intrinsic motivation and Enjoyment.

For extrinsic motivation I used the same method. The mean score on extrinsic motivation was 50,39. The low extrinsic group consisted of 61 participants, and the high extrinsic group out of 55 participants. I performed an ANOVA-analysis with enjoyment as dependent variable and extrinsic motivation (high/low) as independent variable. The results

showed no significant difference ($F(8,115) = 0,386, p > 0,05$) between the two groups of extrinsic motivation on the enjoyment score.

My main hypothesis was that tennis players with a high intrinsic motivation would perceive more enjoyment than tennis players with a low intrinsic motivation. For extrinsic motivation there would not be such a pattern. As is shown in Figure 3, the results confirm my hypothesis: Having a high intrinsic motivation is an indication for having more enjoyment in tennis, compared with low intrinsic motivation.

My second hypothesis was that the different groups show different self-determination behaviour. To test this performed a MANOVA-analysis, with intrinsic motivation, extrinsic motivation and amotivation as dependent variable, and subject (elite, wheelchair-elite and recreational) as independent variable. The results showed that there is no significant difference between the three groups ($F(6,222) = 1,595, p > 0,05$). The three groups have no significant difference in their self-determination behaviour, as can be seen below in Figure 4.

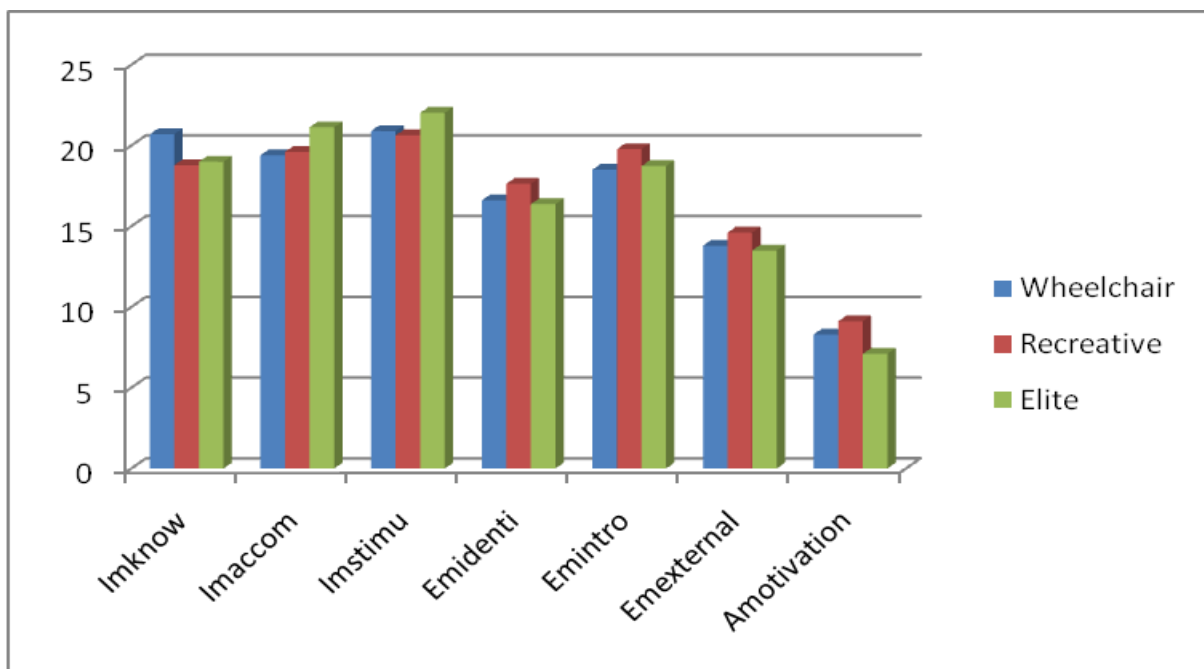


Figure 4: Self-determination behaviour of Wheelchair, Recreative and Elite.

Further, I compared each group on extrinsic and intrinsic motivation. For every group I did a T-test analysis, and the results showed that for each group the mean of intrinsic motivation was significant higher than the mean of extrinsic motivation. The mean intrinsic

motivation (M=61, SD=11,68) for the wheelchair-elite level was significantly higher ($df=9$, $p < 0,05$) than the mean of extrinsic motivation (M=49,9, SD=7,48). The mean intrinsic motivation (M=59,01, SD=8,93) for the recreational level was significantly higher ($df=75$, $p < 0,05$) than the mean of extrinsic motivation (M=51,02, SD=9,27). The mean intrinsic motivation (M=62,26, SD=11,23) for the elite level was significantly higher ($df=29$, $p < 0,05$) than the mean extrinsic motivation (M=48,93, SD=8,05). In sum, every group showed significantly more intrinsic motivation than extrinsic motivation.

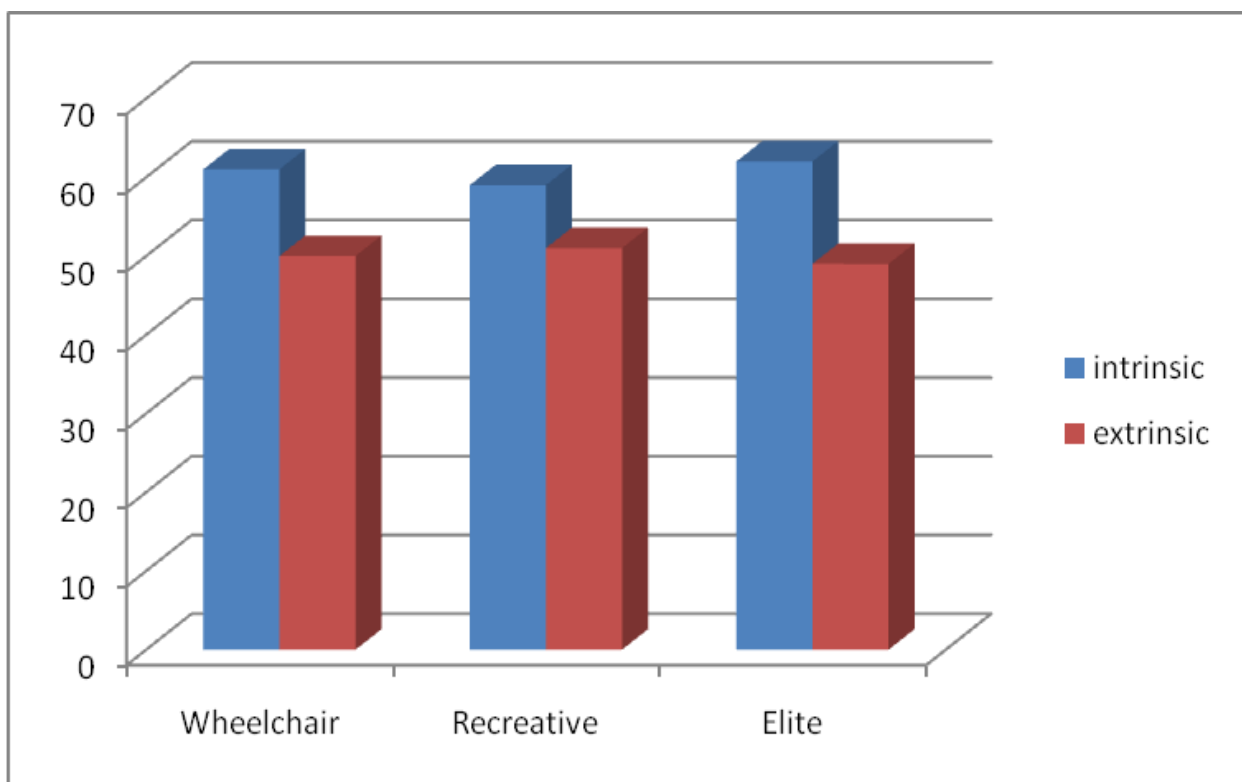


Figure 5: Intrinsic/Extrinsic motivation for Wheelchair, Recreative and Elite tennis players.

My hypothesis stated that there would be different self-determination behaviour between the three groups. As can be seen in Figure 4, this is not what the results show. From Figure 5, it is clear to see that every group shows more intrinsic than extrinsic motivation.

My final hypothesis stated that recreational tennis players perceive their tennis as more enjoyable than the elite and the wheelchair-elite. To test this I performed an ANOVA analysis with enjoyment as dependent variable and subject (recreational/elite/wheelchair-elite) as independent variable. The results showed that there was a significant difference between the

groups ($F(2,115) = 7,123, p < 0,05$). The wheelchair elite displayed significantly ($F(1,85)=11,412, p < 0,05$) less enjoyment ($M=19,70, SD=2,263$) than the recreational tennis players ($M=22,00, SD=1,993$). The wheelchair elite displayed also significantly ($F(1,39)=13,352, p < 0,01$) less enjoyment ($M=19,70, SD=2,263$) than the elite tennis players ($M=22,433, SD=1,977$). There was no significant difference found between the recreational and the elite tennis players.

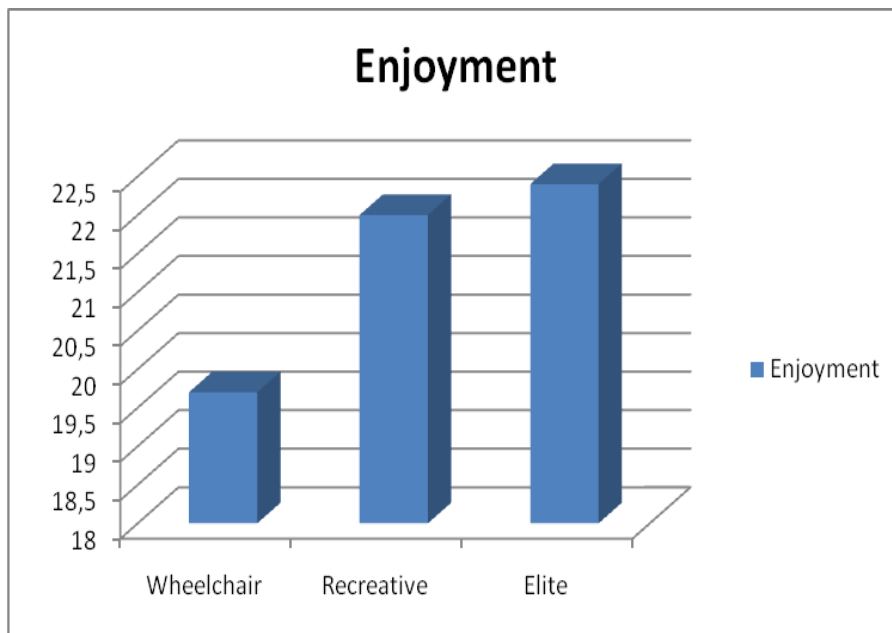


Figure 6: Enjoyment for Wheelchair, Recreative and Elite tennis players

My hypothesis stated that recreational tennis players would perceive more enjoyment than elite and wheelchair-elite players, but this difference was only found between the recreational and elite players compared with wheelchair-elite players. The wheelchair-elite players perceived less enjoyment than the other two groups.

6. Discussion

The main question in this study was if there is a relationship between intrinsic and/or extrinsic motivation and enjoyment in tennis. The results showed that the tennis players who perceived high intrinsic motivation displayed more enjoyment than the tennis players with low intrinsic motivation. This relation was not found between extrinsic motivation and

enjoyment. The tennis players who had a high extrinsic motivation did not perceive more enjoyment than those who had a low extrinsic motivation. Previous experimental studies and observational studies showed the same results (Alderman, Beigle and Pangrazi (2006); Frederick, Lepes, Rubio and Sheldon (1997); Martens & Weber (2002); Reeve (1989); Wankel and Kreise (1985); Zahariadis, Tsorbatzoudis & Alexandris (2006). Playing tennis for inner reasons shows a clear relation with positive affective responses that reflect general feelings such as pleasure, liking and fun. This was to be expected because doing an activity for the sake of it is independent on the outcome, and the self-determination theory states that the locus of causality lies within, which results in more enjoyment. Whether you win or lose, whether you receive a reward or not, it is not important, because you are motivated for the activity in itself rather than the question of what you can get out of it, and this results in more enjoyment.

Secondly, the purpose in this study was to examine if the different groups show different self-determination behaviour. The results showed that there is no difference between the three groups. Furthermore, I compared each group on extrinsic and intrinsic motivation. Every group showed more intrinsic motivation than extrinsic motivation. These results do not support the results found by a meta-analysis (Deci, Ryan & Koestner, 1999) that approved that rewards decrease intrinsic motivation. Deci et al. stated that receiving tangible rewards will tend to be experienced as controlling and as a result they will tend to decrease intrinsic motivation. On the other hand, the results in this study do support the results in the meta-analysis found by Cameron and Pierce (1994), who approve that rewards do not decrease or increase intrinsic motivation. Again, both meta-analyses examined only school situations. It also supports the results of Perreault and Vallerand (2007) where wheelchair basketball players with a disability did not show a different self-determination behaviour than the basketball players without a disability.

The cognitive evaluation theory (Vallerand, Deci & Ryan, 1987) argues that when rewards are perceived as increased competence, and the locus of causality lies internal, it increases intrinsic motivation. This could be the reason that no difference was found between the three groups. The elite and wheelchair-elite tennis players could perceive the rewards as an increased competence, so their intrinsic motivation increases or maintains. That could explain why the recreational tennis players do not display more intrinsic motivation than the elite and wheelchair-elite. Another explanation for these results could be that the elite and

wheelchair-elite tennis players have a high achievement orientation. Harackiewicz (1989) and Tauer and Harackiewicz (1999) showed in their studies that individuals who have a high achievement orientation enjoy a word game more in competition than those low in achievement orientation and that those with high achievement orientation do not lose their intrinsic motivation when rewarded for their activity. For instance, to become an elite player, a high achievement orientation is definitely required, otherwise you will not achieve the elite status. This explains why all the three groups have more intrinsic motivation than extrinsic motivation. The elite and wheelchair-elite know that they have to maintain their intrinsic motivation to keep on going, to keep achieving new goals, so the rewards they get are translated into an increase in competence.

Finally, I predicted that there would be a difference between the three groups in enjoyment. Because the first hypothesis was that having more intrinsic motivation leads to more enjoyment, the second hypothesis was that the recreational tennis players would have more intrinsic motivation than the other two groups. My last hypothesis was that the recreational tennis players should report more enjoyment than the elite and the wheelchair-elite tennis players. According to the self-determination theory and cognitive evaluation theory, being rewarded for an activity leads to less intrinsic motivation and more extrinsic motivation. Because intrinsic motivation has a strong relation with enjoyment and extrinsic has not, the recreational tennis players should perceive more enjoyment than the elite and wheelchair-elite. Sport enjoyment is an important factor in determining sport commitment (Scanlan, Carpenter, Schmidt, Simons & Keeler, 1993), so this could be the reason why there is no clear difference between the elite and the recreational players. The elite players have been committed to tennis for such a long time that they must enjoy it, otherwise they would have given up their careers.

The results in this study support in some way the cognitive evaluation theory (Vallerand, Deci & Ryan, 1987), because the elite and wheelchair-elite tennis players get rewards because they have reached a certain level of competence in tennis. Some participants in this study played Wimbledon and Roland Garros, so they know that they receive money and all sorts of extrinsic rewards and perceive themselves as competent in playing tennis. The question of what happens if the tangible rewards do not increase when they become more competent still remains. This is quite obvious in the soccer world, where salaries are going through the roof. Every time a player changes of club, he has to earn a bigger salary to keep

his motivation the same. In tennis this is somewhat different, because the tangible rewards are much more outcome related.

I started this thesis with a story about kids who were playing at a grass yard (Kimiecik, 2002). They were really enjoying it, until the character gave them less money every week they were coming. At the end their intrinsic motivation for playing on that grass yard was gone. They just did not want to play at that grass yard. In tennis, it appears, not to work this way. When tennis players reach a certain level and become rewarded for that, their intrinsic motivation does not disappear that easily. Maybe because the rewards mostly keep increasing if you become better and so the rewards are perceived as an increase of their competence. The cognitive evaluation theory predicts that if rewards are perceived as an increase of competence, there will be no decline in intrinsic motivation, because the locus of causality lies within.

7. Further investigations and limitations

One of the problems I mentioned during answering the questionnaires was that the use of English questionnaires led to misunderstandings, especially for the recreational tennis players, who were just regular people with not a very high educational level. Occasionally, I asked myself if it had not been better to use a Dutch version, and take the extra effort for the methodological test on my account.

Another problem was the high response-bias of the elite group. I contacted the ABN-AMRO tournament, the KNLTB, and as many players as possible through personal connections, but no more than 6 professional participants answered the questionnaire. That is why I decided to place every participant who receives any money and points for the national or international ranking as an elite competitor, and not divide the group into a second-rank competitor (who receive some money and points) and elite (who earn a living by playing tennis). Because there was no difference between the three levels on intrinsic motivation, it is questionable whether this could be a reason. It is quite clear that they were not really motivated to fill in the questionnaires. I think the main reason for this is that most elite players were contacted via email, and this is easy to ignore. Other participants were contacted via personal contact, so it was much more difficult to decline the request.

Among other things, I compared elite with recreational tennis players. The best way to find out if the increasing external rewards of professional athletes influence the intrinsic motivation of professional athletes is to compare young players who will become elite players, and follow them by means of a longitudinal study to see if their enjoyment induces. This requires a lot of effort and luck, because very few will make it to the top and external rewards start at a very young age. But this is the only way to determine if their motivation declines after receiving more and more external rewards. The ones, who will carry on practising every day and keep having faith in their own abilities and inner enjoyment, should have different reactions to those external rewards, than the athletes who lose their motivation. The self-determination profiles of those two groups (the one who make it vs. the one who do not make it) should be different according to the cognitive evaluation theory.

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Appendix

Gender:

Age:

Nationality:

Why Do You Practice Your Sport?

Using the scale below, please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practicing your sport.

	Does not correspond at all		corresponds moderately			corresponds exactly	
	1	2	3	4	5	6	7
1. For the pleasure I feel in living exciting experiences	1	2	3	4	5	6	7
2. For the pleasure it gives me to know more about the sport that I practice	1	2	3	4	5	6	7
3. I used to have good reasons for doing sports, but now I am asking myself if I should continue doing it	1	2	3	4	5	6	7
4. For the pleasure of discovering new training techniques.	1	2	3	4	5	6	7
5. I don't know anymore; I have the impression that I am incapable of succeeding in this sport.	1	2	3	4	5	6	7
6. Because it allows me to be well regarded by people that I know.	1	2	3	4	5	6	7
7. Because, in my opinion, it is one of the best ways to meet people.	1	2	3	4	5	6	7
8. Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.	1	2	3	4	5	6	7
9. Because it is absolutely necessary to do sports if one wants to be in shape.	1	2	3	4	5	6	7
10. For the prestige of being an athlete.	1	2	3	4	5	6	7
11. Because it is one of the best ways I have chosen to develop other aspects of myself.	1	2	3	4	5	6	7
12. For the pleasure I feel while improving some of my weak points.	1	2	3	4	5	6	7
13. For the excitement I feel when I am really involved in the activity.	1	2	3	4	5	6	7
14. Because I must do sports to feel good about myself.	1	2	3	4	5	6	7

15. For the satisfaction I experience while I am perfecting my abilities.	1	2	3	4	5	6	7
16. Because people around me think it is important to be in shape.	1	2	3	4	5	6	7
17. Because it is a good way to learn lots of things which could be useful to me in other areas of my life.	1	2	3	4	5	6	7
18. For the intense emotions that I feel while I am doing a sport that I like.	1	2	3	4	5	6	7
19. It is not clear to me anymore; I don't really think my place is in sport.	1	2	3	4	5	6	7
20. For the pleasure that I feel while executing certain difficult movements.	1	2	3	4	5	6	7
21. Because I would feel bad if I was not taking time to do it.	1	2	3	4	5	6	7
22. To show others how good I am at my sport.	1	2	3	4	5	6	7
23. For the pleasure that I feel while learning training techniques that I have never tried before.	1	2	3	4	5	6	7
24. Because it is one of the best ways to maintain good relationships with my friends.	1	2	3	4	5	6	7
25. Because I like the feeling of being totally immersed in the activity.	1	2	3	4	5	6	7
26. Because I must do sports regularly.	1	2	3	4	5	6	7
27. For the pleasure of discovering new performance strategies.	1	2	3	4	5	6	7
28. I often ask myself; I can't seem to achieve the goals that I set for myself.	1	2	3	4	5	6	7

Enjoyment Questionnaire

Using the scale below, please indicate to what extent each of the following items corresponds to your interest.

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1. I usually find playing tennis interesting.	1	2	3	4	5
2. I usually have fun playing tennis.	1	2	3	4	5
3. I usually get involved when I am playing tennis with my team.	1	2	3	4	5
4. I usually find time flies when I am playing tennis.	1	2	3	4	5
5. I usually enjoy playing tennis on my team.	1	2	3	4	5