

SPORT AS A FORM OF SOCIAL INVOLVEMENT - - THE CASE OF TENNIS

Davorin Trstenjak¹ and Zoran Žugić²

¹Tennis Club "Spin", Zagreb, Croatia

²Faculty of Physical Education University of Zagreb,
Croatia

Preliminary communication

UDC: 796.342:316

Received: March 5, 1999

Accepted: December 22, 1999

Abstract:

Tennis is a game which has become increasingly popular in the last twenty years. It comprises various elements which are present in all other physical activities, from ludic to competitive ones, and it is realized at various levels, from the level of "pure play", over the intermediate concept level which is called a *game*, to the institutional level, that is the level of professional sport. The authors have tried to answer the following questions: What makes tennis a popular and suitable form of social involvement? What characteristics, contents, motives on the one hand, and what game structure on the other, make tennis attractive for a large number of people who remain devoted to it for a long time? To answer these questions in this paper the authors have observed tennis as a mode of social involvement at different analytical levels: 1) a sociocultural-anthropological analysis offers a survey of contents, modalities and characteristics which contribute to the mode of a game as pure play, and those which contribute to the mode of a game with certain skills and rules; 2) a socio-psychological analysis pointing to the relationship between the intrinsic and extrinsic motivation as the prime movers for participation in tennis; 3) a socio-organizational (an institutional) analysis showing how tennis is organized within an actual social community; 4) a kinesiological analysis enables an insight into the requirements needed for and complexity of before the acquisition of motor skills in tennis.

Key words: play, game, tennis, socialization, sociocultural-anthropological analysis, sociopsychological analysis, institutional analysis, kinesiological analysis

SPORT ALS FORM DER GESELLSCHAFTLICHEN BINDUNGEN - BEISPIEL TENNIS

Zusammenfassung:

Das Tennisspiel wurde in letzten zwanzig Jahren sehr populär. Es beinhaltet verschiedene Elemente, vorkommend in anderen körperlichen Tätigkeiten, von verspielten bis kompetitiven, wie auch unterschiedliche Ebenen; von der Ebene des "reinen Spieles" (play) über Zwischenspielenwurf (game) bis zur Institutionalisierung bzw. leistungssportlichen Ebene. Die Textverfasser stellen die Fragen: Was macht aus dem Tennis eine populäre und bevorzugte Form der Herstellung von gesellschaftlichen Bindungen? Welche Eigenschaften, Inhalte, Beweggründe und welches Gefüge des Tennisspiels zieht dauernd eine grosse Anzahl der Menschen an und bindet sie an sich? Um das zu beantworten untersuchten die Textverfasser das Tennis als eine Form der Herstellung von gesellschaftlichen Bindungen auf unterschiedlichen analytischen Ebenen:

1. soziokulturell-anthropologische Analyse stellt die Inhalte, Modalitäten und Eigenschaften dar, die dem Modus vom "reinen Spiel" (play), wie auch dem durch Spielgeschicklichkeit und -regel bestimmten Modus (game) beitragen;
2. soziopsychologische Analyse weist auf Wechselbeziehungen zwischen intrinsischen und extrinsischen Beweggründen hin als direkte Anregung zur Teilnahme am Tennis;
3. soziorangierende (institutionelle) Analyse zeigt den Aufbau vom Tennis innerhalb einer konkreten gesellschaftlichen Gemeinschaft;
4. kinesologische Analyse lässt den Einsicht ins Gefüge und Förderungen, die bei der Bewältigung von Bewegungsfertigkeiten im Tennis gestellt werden.

Schlüsselwörter: Spiel, Tennis, Sozialisation, soziokulturell-anthropologische Analyse, kinesologische Analyse, institutionelle Analyse, soziopsychologische Analyse

Introduction and goal

The game of tennis has become increasingly popular over the last twenty years. According to UNICEF, about 135 million people play tennis all over the world, and the fascination with the racket and the ball does not abate. In Germany alone there are 2.2 million registered members of the German Tennis Association (Bornemann et al., 1993:6). The tennis boom is evident. What is it that makes this game so popular? Is it an increasing TV coverage of tennis tournaments (Cox and Applewhaite, 1994:9) and glorification of the sports heroes through the mass media (Baltzell, 1995), the interest of equipment

manufacturers (Džeba and Serdarušić, 1995:424-429), or is tennis really a *game* which can be played by everybody - from 8 to 88 years of age? Since tennis is at the same time a *game*, a competition, a professional *show* and even more (Fontaine, 1997:6), it can be said that it is comprised of various elements which are present in all other physical activities (Žugić, 1996:88), ranging from ludic to competitive activities, and that there are various levels of the *game*, from the level of *play*, over the intermediate concept level which is called a *game*, to the *institutional level*, that is the level of professional sport.

The authors will try to answer the following questions: What makes tennis a popular and

suitable form of social involvement? What characteristics, contents, motives on the one hand, and what game structure on the other, make tennis attractive to a large number of people who remain devoted to it for a long time?

To answer these questions the authors suggest the analysis of tennis through four analytical levels:

1) *Sociocultural-anthropological analysis*. At this level the contents, the modalities and the characteristics which contribute to the mode of the game as *play* and those which contribute to the mode of the game as a *game* will be analysed.

2) *Sociopsychological analysis*. The relationship between the intrinsic and extrinsic motivation as prime movers of this sport activity will be analysed.

3) *Socio-organizational (institutional analysis)* will show how tennis is organized within an actual social community.

4) *Kinesiological analysis*. It will be comprised of: 4.1 A structural analysis of tennis; 4.2. Movement complexity of tennis; 4.3 Motor abilities necessary to acquire the tennis game; 4.4. Injuries in tennis. A kinesiological analysis should offer an insight into the complexity and requirements needed for the acquisition and mastering of motor skills in tennis.

Discussion

1. Sociocultural-anthropological analysis - tennis as *play* and tennis as a *game*

The concept of sport as *play* relates to the ontological and anthropological determination of man as *homo ludens*. Play is, by its own nature, self-contained activity and a man's ludic component. This human playish (ludic) component is equal in status to other anthropological determinations of man - work (man as *homo faber*), mind and intellect (man as *homo sapiens*), need to communicate with other people (man as *zoon politikon* and *homo sociologicus*), etc. (Žugić, 1996:79). The determination of *play* as a self-sufficient, self-fulfilling activity comprises, according to the older classifications (Caillois, 1979), but in the more recent ones as well, between five and six basic characteristics. *Play* is *free* (individuals choose of their own free will which activity they will engage in), *detached* (limited in space and

time), *unpredictable* (the course of play and its outcome cannot be predicted), *unproductive* (its purpose is an end in itself), *it has its own reality* (different from usual life) and *it is of a fictitious character* (its reality is of a different nature).

If we assign the rules, different roles in life, seriousness and the like to *play*, then it is defined, at least in Anglo-Saxon literature, as a *game* (Žugić, 1996:80). Understood in such a way, a *game* does not represent a free or a voluntary activity, because it is determined by rules and motives which make an individual take part in it. In a *game* the participants are confronted with one another with regard to the entities they represent and with regard to their own special goals such as prestige, acknowledgement, influence, etc. All this leads to differentiating between *play* on the one hand, and a *game* on the other.

Consequently, a question can be asked: What is it that differentiates between tennis as *play* and tennis as a *game*? If we start from the concept of *play* to the concept of a *game*, the following transformations occur. If we take into account the location at which an activity is held, then it can be said that tennis requires that it be held in a circumscribed space marked out according to the rules of the tennis game (dimensions of a tennis court). However, if we take a closer look at how tennis is played by, for example, children in suburbs or on lawns, or in multipurpose sports facilities, we shall see that the locations or the space in which they play are of various dimensions, and the net (if there is one) sometimes is hand-made. Although the space in these cases is not in congruence with a real tennis court as for its dimensions and contents, play is still held inside a circumscribed space and its perimeters are arranged arbitrarily. Such play can be described as self-sufficient and an end in itself.

Except on a tennis court, tennis can also be played against a tennis wall. Any wall of a building can be used as a tennis wall, if there is no real tennis wall available. But there are also other variously inclined surfaces (Vidas, 1986:30), which were specially designed for this way of playing tennis. If a wall was specially constructed for playing tennis, serious training sessions could be performed on it, because the number of basic strokes per minute against a wall exceeds the number of strokes executed on the court (Heruc, 1980:25). A tennis wall is therefore used by tennis players of all age

groups who play tennis at different levels of motor skill acquisition. Playing tennis against a tennis wall has all the characteristics of *play* with an expressed possibility of self-regulation of its duration, intensity, rules, contents, physical and mental involvement, etc., which will consequently be reflected in the level of enthusiasm and devotion to play.

Tennis can also be played on different surfaces. Asphalt, colour set and other hard surfaces are easier to maintain and cheaper to rent, whereas some players regard the clay courts as being the fairest. Grass surfaces are rare, but it should not be forgotten that tennis was originally played on grass, so that playing on such a grass surface represents the closest contact with tradition. If tennis is played throughout the whole year, then the players move into sports halls to play in winter. However, some players play tennis only 'seasonally' during summer. There are also differences with regard to the reputation of tennis centres and courts. Thus, the courts on which the greatest tennis tournaments, ranging from a national level to the most traditional world tournaments are held, have the highest reputation and the most elite status.

If the location on which tennis is played is given the characteristics which do not arise from the activity itself, but are the result of a wider context in which play is held (*status, prestige, acknowledgement, influence, etc.*), then the detachment from stresses and challenges of everyday life is decreased, together with a decrease in spontaneity. Consequently, the goals become more complex and more connected with the roles that the players play in everyday life. This leads to the transformation of *play* into the concept called a *game*. It is a common belief that tennis is an elite sport intended for a relatively small number of players, because maximally four players can play on the court at the same time. However, if we try to fill in the football pitch with tennis courts, we shall see that the total number of players on the pitch is not much different. The advantage of tennis courts is that they can be better employed throughout the day than football fields. Likewise, if we compare the costs of construction and maintenance, it can be concluded that there are no major differences between tennis and some other sports. A similar comparison with the same result can be made with regard to equipment. All this leads to the conclusion that tennis has lost some features

of its exclusivity and segregation of a sport which was limited mainly to one social group. The phenomenon that the new social and economic elite in countries in transition, and especially in Croatia, accept tennis as an expressed status symbol illustrates the best this elite, who realize their participation in tennis exclusively within the sphere of a *game*.

With regard to the rules of the game, tennis can be played without an actual score, so that the exchange of balls is prolonged to the ultimate limits (Bornemann et al., 1993:9). Such play can be executed within the boundaries of the court, but also beyond these boundaries and without the rules applied to competitive tennis, all this in order to play as long as possible. Such play can be performed according to some arbitrary agreement, but also without any limitations, so that the prolongation of play is the only goal and the only rule. The longer one plays, the greater the enthusiasm and the delight. After an error, play continues, so that the element of repetition and refrain is the most important characteristic of such play (Huizinga, 1992:16). Other characteristics are prerationality and spontaneity which frequently have toxic effects on the players (Kretchmar, 1994:210-211). This aspect of playing tennis is entirely in congruence with the concept called *play*. The offender who breaks such a rule gives the preference to the agonal or competitive element of play over a ludic one.

Apart from the classical way of playing tennis as an individual sport or a sport played by doubles, there is a large number of variations arranged according to their own internal rules. Such rules vary the number of players playing, they vary the scoring system, or they determine some other special conditions which mostly make play more difficult for one or for all who participate in it. These specially designed forms of play are usually used for the acquisition of motor skills in tennis schools, and even more frequently in the training sessions of competitors (Bucher, 1991:133-153) of all age groups who play at different levels of motor skill acquisition. All such forms of playing tennis in which the rules are specially arranged, contain the agonal type of play in which the superiority over the opponents must be manifested together with the capacity of executing motor skills, and *a priori* accepting the rules and particular limitations, and respecting them as much as possible.

2. Socio-psychological analysis - the relationship between the intrinsic and extrinsic motivation in tennis

At the beginning of the search for the socio-psychological motives there is a question: Why do people choose tennis as the sport in which they want to participate, why do they put their efforts into participation in tennis, and why do they remain devoted to it for a long time? The answer could be simple - tennis gives them pleasure. However, the motives which encourage a person to take part in it are versatile. Hence, two basic motivation aspects will be discussed here: intrinsic and extrinsic motivation.

Intrinsic motivation can be defined as an inner prime mover and the reason for participation in any activity for the purpose of enjoyment arising from participating in that very particular activity without any intent of gaining an external reward. Extrinsic motivation is defined as an external reason (money, recognition, rewards) which encourages a person to participate in an activity - the absence of external reasons would cause the termination of participation, or, at least, a decreased participation intensity. When engaging in an activity individuals are driven both by the internal and the external reasons. It is their ratio that varies from activity to activity (Horga, 1993:173). Some authors (Coakley, according to Žugić, 1996:84) define the basic difference between the internal and the external motives by the division of a participant into amateurs and professionals, the difference between them being the one expressed in the different ratio between play and effort.

If one is engaged in tennis in order to achieve social acknowledgement of other important people - coaches, parents, team-mates, friends - without perceiving it above all as fun, which is usually the case in children who are less than 12 years of age, because they are not able to accurately assess their competence in a sport activity (Roberts, according to Horga, 1993:164), then social acknowledgement becomes a criterion either of success or of failure (Bombač, 1997:53). The presence of parents during a training session or at a competition can produce an additional psychological pressure, especially if the parents distract the child with their uncontrolled reactions. Support from parents is absolutely necessary - starting from the organization of time devoted to training sessions, taking a child to these training sessions, etc. Their support is essential in case of failure. However,

parents who are oriented only towards the imperative victory impose, by doing so, a lot of pressure on their children, and thus very often interfere with the child's performance (Karković, 1998:46-77). The same principle occurs at all competition levels, even in recreational play, if the motive of prizes and acknowledgement prevails, or if the activity is desubjectivized because of external conditions, which results in poor enjoyment of the game itself.

If we perceive tennis in such a way that a friend is also an opponent in that he/she tries to create and put before us the challenges and obstacles, then we have an opportunity to discover our actual capacities (Letica, 1995) for mastering an athletic skill, that is we can realize our potential in a competition and compare our capacities with the capacities of others (Roberts, according to Horga, 1993:164). It is interesting to stress here the opinion expressed by Bred Parks, the founder of wheelchair tennis, that tennis and competition are intended for those who participate in it, and that sport has to be a good therapy on the one hand, and fun on the other.

Fun in playing is another possible aspect of intrinsic motivation, and it relates to the term 'immersion' or 'specific enthusiasm' (*flow*), which accompanies the play, and which was introduced by Csikszentmihaly in 1975 (according to Horga, 1993:176). He describes it as enthusiasm, and "'enthusiasm' means the entire sensation while acting and being totally focused, it is a state in which an action is followed by an action according to an inner logic, which seemingly does not require the presence of consciousness; we perceive this state as a unique flow of one moment towards the other, when we are in total control over our actions, and when there is an insignificant difference between 'me' and the environment, between an impulse and a response, or between the past, the present and the future" (according to Duran, 1995:12). Thus, the state of total immersion, absorption in an activity determines the maximal engagement of an athlete in which he/she is oblivious of everything and everybody else - the audience, the parents, the coach - but the game itself, so that the evaluation process of the outcome is minimized. This means that even in the cases when an athlete is totally preoccupied by a sport activity, the subjective interpretation of the outcome, and not the outcome itself, influences the intrinsic motivation (McAuley and Tammen, 1989:84-93). Regardless of whether we are talking about tennis played at various competition levels, about

tennis which is played at recreational level, or about tennis which is pure fun, it becomes an activity whose purpose is in itself and not in some future profit (reward, acknowledgement, recognition), it becomes happiness in itself (Fink, 1984:297-298). A similar experience is expressed by the parents and their children who participate in the well-known American club and doubles championship, in which one member of a pair is a parent and the other member is his/her child in all combinations (father-son, father-daughter, mother-daughter, mother-son). Fun emerging from playing together is the result of cooperation, getting acquainted with each other's actions in specific situations such as the match, enthusiasm, victory or defeat. Trying to give one's best for the common cause and being satisfied with one's own self is the main goal (Kalyn, 1986:35-36).

In contemporary competitive tennis, and especially in professional tennis, play has been replaced by competition based on the principle of efficiency of result (imperative to win), which consequently has led to the development of sport, not primarily as a game, but as a strenuous productive activity whose goal is to achieve a record (the personal or team's best result) and victory at all costs (Žugić, 1996:84). Such comprehension of the game changes the attitude towards the rules as well. The rules are no longer unconditional and they are not liable to doubt, which is reflected in specially worked out tactical concepts of the players that some rules of the game are implemented in such a way as to obstruct an opponent or to obtain the advantage over him/her (Gilbert, 1993:182-190). Such an attitude towards the rules of the game is the best indicator of the principle of achieving a result at all costs, which represents one of the characteristics of comprehending the mode of play as the mode of a game. Enormous mass-media support through the coverage of particular matches and tournaments, which are sometimes watched by hundreds of millions of viewers, creates and involves another participant in tennis matches - namely, the audience at stadiums, which also represents a social phenomenon in itself. In the audience at a stadium one can see members of political life, economic, sport, mass-media and other elite, so that sometimes the structure of the audience seems to be more important than the players (Dunely, 1996:221-242; Coakley, 1998). Thus, tennis definitely joins to the world of the global spectacle and show-business (Žugić, 1999:508-513).

3. Socio-organizational (institutional) analysis - from "pure play" to the (professional) sport

Socio-organizational (institutional) consideration about tennis should be based on the universal process of globalization, on the one hand, and on the sociocultural and other peculiarities of the social community in question, on the other. The essence of institutionalization lies in the global social process during which particular social activities and units are organized in such a way as to meet the particular needs over a relatively long time span. When such activities and units stabilize themselves as a predominant form of meeting the particular needs, they exceed all those previously present, but not the inveterate needs (Žugić and Pavičić, 1999:85-90). Formal institutionalization is manifested in that sport is being structured at a high level of organization, form protocol procedures and supplementary services, to equipment and sports training. Ludic institutionalization occurs as a process of transforming play as an optional activity into a structured one which, in one of its parts, displays itself as a profession (Žugić and Pavičić, 1999:85-90). Basically, these are the two sides of the same process.

From 1869 in which W. C. Wingfield demonstrated the game played with the racket and ball on the grass to the formation of the first club (*All England Croquet and Lawn Tennis Club*), which organized the first open tennis tournament, only eight years have passed. A year later, in 1888, the first tennis association was formed in London (*The Lawn Tennis Association*). From Great Britain tennis travelled to Europe, where the national championships were held, first in France (1891) and then in Germany in 1896. In 1896 tennis appeared for the first time in the programme of the Olympic Games in Athens (Kramer, 1977:384-386). Today the International Tennis Federation (ITF) is comprised of 201 national associations. This shows that tennis has gone beyond the limits of national space and time and it has become a universal sport played in the same form all over the world. The ITF annually invests approximately 4 million dollars into the development of tennis in the world, it organizes seminars, issues a free-of-charge journal, creates ITF junior teams comprised of young players from all over the world, it organizes tournaments, trains umpires, etc. All this points to the fact that ITF is an institution characterized by a high degree of organization. National associations all

have the same characteristics and structure, and they carry out the same activities as ITF. Unlike the ITF, which is organized on the basis of national associations, the Association of Tennis Professionals (ATP) is an independent organization which organizes tournaments of professional tennis players and allows participation to all according to the ATP rules.

Each national association contains, among other objectives of its development, an objective which is aimed at including a large number of people into an organized form of participation, and consequently the development of national- and international-quality-level players who will represent a country at international tournaments. These two objectives are connected, because the larger the number of people who participate in a particular sport, the greater the possibility of creating high-quality players on the one hand, and on the other, the larger the number of high-quality international players, the greater the popularity of tennis. This again leads to a larger number of people who would wish to participate in this sport. Thus, the programmes of development become even more complex, they employ the knowledge and experience gained from other sports and acquired throughout the formation of development systems, such as, the making of the football team Ajax (Jones, 1997), all this in order to achieve the highest possible effect, which is the top sport result.

In Croatia, the fostering and the promotion of interest in sport is defined in the Law on Sport (Narodne novine, 1997). Sport activities defined in this Law are: 1) participation in school contests, 2) sports recreation, 3) education in sport, and 4) management of sports facilities. Sport activities are executed by associations and professional clubs as non-profit legal entities. If an association in the course of its operation realizes a profit, then this profit must, in congruence with the statute of the association, be used exclusively for the functioning and development of this association, thus fulfilling the goals expressed in the statute (Law on Associations, Narodne novine, 1997). Apart from the formation of associations which represent a form of voluntary affiliation of people and legal entities, people can foster and develop their interest in sport only through membership in clubs (this membership needn't be an active one). This membership then offers them certain privileges over the non-members when hiring a court, when purchasing the

equipment, and it enables them, for example, to associate in an organized way (club tournaments), etc. Tennis is a sport which, at the level of social institutionalization, is characterized by a high degree of structuralization (high degree of organization, from protocol procedures and supplementary services to equipment and sports training). As for social distribution, tennis is a universal sport, socially recognized and legalized, in which a large number of people participate either as registered members or as spectators and supporters.

4. Kinesiological analysis of tennis

An additional requirement will be added to the above mentioned necessity for recognizing and respecting the process of globalization in modern civilization, the peculiarities of each milieu, as well as for considering tennis as the social and sports institution. Tennis, as the whole area of sport, should be investigated multidisciplinary as the distinctive game and social phenomenon of the 20th century. Interdisciplinary research on tennis, as a sport being the subject of interest of the sport sciences (Burwitz et al., 1994:93-109) includes many different analyses: a cultural-anthropological (Skledar, 1996, 1997), a subcultural (Spencer, 1997:363-378), a sociological (Žugić and Paičić, 1997:183-187), a sport economics analysis (Bartoluci, 1997:173-179), kinesiological analysis (Harris, 1993: 389-412; Spirduso, 1993:413-424) and others. The above mentioned analytical levels are not exhaustive, and that fact supports the distinctive and demanding characteristics of the research of that kind.

4.1. Structural analysis

A structural system of sport activity is comprised of rules, conventions, actions, various strategies and tactical varieties. If a sport activity contains several actions, procedures, particular rules or specially designed relations between the players and all other parts of the structure, then this activity becomes more structurally complex (Horga, 1993:39-41). According to the division of motor skills (Mraković et al., 1993:3-17) tennis belongs to acyclic motor activities of a polystructural type. The very root of the word *tennis*, from the Old French *tenez* meaning *Take!* (Kramer, 1977:384), outlines the basic purpose of the tennis game in which one participant tries to propel the ball from his/her own part of the court over the net into the opponent's part of the court in

such a way that the opponent is unable to return it, or that, while trying to return the ball, he/she is forced to make a mistake. However, to achieve the goal of scoring a point, a direct solution is frequently not possible. On the contrary, one must execute a whole series of tasks which precede the final move (Bornemann et al., 1990:10). This very simple presentation of a goal leads to a conclusion that the players create a large number of different situations through playing and in play, in order to achieve the ultimate goal. To achieve the goal, a player may select a solution out of the available choices of possibilities that are limited by the rules of the game, by biomechanical regularities and by the anthropological characteristics of a player.

Tennis rules are rather complex, and they tend to improve all the time by introducing new regulations, or by changing the existing ones (Liszt, 1992:5). These rules are then applied in friendly recreational matches, as well as in the most important professional competitions, so that learning the scoring system is not enough - one should be acquainted with all the rules, even with those rules applied in very rare but probable situations.

The subjects of a tennis match are the two or four players who alternately perform actions. This means that, with regard to the external conditions in which the exercising takes place, there exists the so-called external management in which a player reacts to the conditions produced by his/her opponent (Singer and Gerson, 1981:100-116). In such conditions the players, depending on the tactics, make decisions which are then manifested in their actions. Each action is manifested by executing one element of a tennis game technique, and each technical element has several tactical variations of application (Douglas, 1992:196-232; Hes, 1982:44-184; Bornemann et al., 1990:9-76), depending on the type of the player against whom one is playing (Gullikson, 1994:55-63; Cohen et al., 1985:19-21), the surface (Burcar, 1994:85-88), the tactical tasks to be solved and the player's own capacities. To execute the complex tactical tasks, apart from good technique, it is necessary to have the knowledge of, for example, how to cover the court with regard to one's own position on it and with regard to the position of the opponent (Friščić, 1981:60; Hes, 1982:25-31), to be aware of one's own advantages and disadvantages, and to recognize the opponent's shortcomings and strong points (Applewhaite and Moss, 1992:91),

as well as to recognize one's own psychological processes and emotions, and to know the ways in which one can learn how to overcome them (Applewhaite and Moss, 1992:106-109; Loehr, 1991:29-48). The possibilities of changing the choice of the part of the opponent's court into which the ball is directed, as well as the possibilities of changing the height and the speed of flight, the direction and the spin of the balls hit on the one hand (Burcar, 1994:51-59; Bornemann et al., 1981:22-38), and the change of rhythm and tempo of the game (Burcar, 1994:60) on the other, contribute to the complexity of the game

Tactical behaviour implies perceiving, consideration and decision-making. During the game it is necessary to perceive the tactical variety used by the opponent in order to change one's own plans in the game. It should be stressed that the processes of perceiving, consideration and decision-making must be executed under both high physical and psychological pressure, which requires the speed of reaction and counteraction. If we take into account both of these characteristics, the shortness of the time span that is at one's disposal on the one hand, and the speed of reaction and counteraction on the other, together with the numerous possibilities of combinations and solutions, and the actual choice of actions to be executed (Bornemann et al., 1993:15), it can be concluded that the tennis game is structurally very complex with a large number of technical-tactical elements which the players can combine into an endless number of various complex situations.

All that has been said applies to competitive tennis. However, if being in a non-competitive situation, the players can play the ball without scoring, so that the exchange of balls is maximally prolonged (Bornemann et al., 1993:9), which means that the structural system of a tennis game can be simplified if the participants who do not compete against each other choose and agree to do so. It can also be assumed that the structural system of the tennis game in friendly recreational matches is also less complex, because the participants are not able to combine all the technical-tactical elements in such a vast variety of different complex situations.

4.2. Movement complexity

The movement system of a sport activity implies all the movements and sets of movements executed during a sport activity. The movement system can be described as a set of all

forms of movement, and it is commonly referred to as the technique of a sport activity (Horga, 1993:39-40). If a sport activity contains several different forms of movement and if each of these forms of movement is more complex, then the movement structure of the whole sport activity will also be more complex.

Movement motor structures in tennis are characterized by a high degree of complexity and integration of certain sections of motion. The high degree of complexity is determined by the motion of the whole body through space. To gain possession of the ball or to return to the basic position, the player uses several complex types of movement, such as: side step, side-lunge, cross-step, starting acceleration, low skip, etc. (Bornemann et al., 1993:130). All these running techniques should be used in coordination with the flight of the ball (Friščić, 1990:15). The elements of the technique of performing low strokes make up a closed set, but by means of the functional analysis of motion they can be reduced to the final set of basic strokes with a large number of allowed individual leeways (Bornemann et al., 1990:9-76). Basic strokes are executed either in a fixed stance or while moving or jumping, and are all characterized by the intention to shift the body weight forwards, from the rear onto the lead leg. The transfer of weight ends immediately after the impact of the ball and the racket. At the moment of impact the racket transfers from rotational into translatory motion (15 - 25cm). Some portions of motion, such as the extension of legs and the transfer of body weight forwards till the trunk untwists, and the maximal acceleration of the head of the racket (80km/h), are integrated into a series of synchronized movements which are united to form a complete movement.

The very short duration of the task contributes to the complexity of motion in the technique execution. The impact of the ball with the strings on the racket lasts only 3-5msec and cannot be significantly prolonged (Boxberger et al., 1987:79). Since the contact is so short it is not possible to apply any subsequent corrections, that is the motor programme determines in advance all the details of the movement. Once the movement has begun, no subsequent corrections are possible despite the probable changes in the environment. Any alteration of the situation can be done only in the next attempt, and this applies only to the forward swing in basic strokes, which lasts 100-200msec.

A seemingly insignificant change of the place of the contact point connected with the movement of the wrist to the left by only 20 degrees leads to a significant change of the position of the hitting zone of the racket, and consequently to a change of the point at which the ball will bounce on the opponent's baseline by about 9m (Bornemann et al., 1993:16).

All this leads to the conclusion that the tennis game contains numerous different complex forms of motion, together with a large number of individual leeways, which makes the whole tennis system even more complex. The acquisition of the appropriate movement structures in easier conditions (a more accurate and a slower oncoming ball) will not significantly simplify the complexity of the motor actions.

4.3. Necessary motor abilities

The system of the required motor abilities is comprised of the abilities which make it possible for an athlete to learn and realize the movement structures within the rules of the game of a particular sport. Basically, the more complex the sport according to its structural and movement complexity, the richer the structure of the required motor abilities (Horga, 1993:40).

On a court, a tennis player can sprint for maximally 14 metres. Most sprints are between 2.5 and 6 metres long. Therefore, it can be concluded that explosive power, which participates to a large extent in starting acceleration, is of extreme importance. Besides, a tennis player does not run across the court only in a straight line; zigzag running in which frequent changes of running direction are basically the combinations of changing direction from left to right and vice versa, and shuttle running are also present. Apart from speed, this also requires a high level of coordination, especially of that aspect which is responsible for a quick change of direction, and which is commonly referred to as agility (Bornemann et al., 1993:128).

In top tennis primarily the alactic-anaerobic metabolism comes into operation, and the further development of tennis is directed towards a more frequent employment of the offensive game, which tends to shorten the average duration of scoring a point, that is it makes use of the phosphate anaerobic metabolism at the expense of the lactic one (Šentija, 1991:59-62). Speed of reaction is also important in the execution of motor structures of movement. The

time that is at the disposal of a tennis player for the execution of the swing when attempting to return a ball is only .4 seconds, and in a volley it is only .6 to .9 seconds (Bornemann et al., 1993:21-22). When exchanging the strokes from the baseline the ball approaches at a speed of 80km/h, and a player can follow it up to about 50cm to the point of impact (Scholl, 1991:14). It has already been said that the contact of the ball and the strings on the racket is very short, from 3 to 5 msec, and the translatory movement of the racket in which this contact must occur is about 20cm. The speed of the racket head at the moment of contact is about 80km/h (Bornemann et al., 1993:31). If, at the moment of impact, the hitting surface moves by only 20 degrees, the miss on the baseline will be approximately 9 metres. All this leads to the conclusion that coordination, balance, explosive power, speed of a single movement, and the accuracy of hitting a target with a struck implementation, as well as the accuracy of aiming at the goal (Burcar, 1994:106) are necessary for the acquisition of motor structures of movement in tennis. According to Schneider (1994:7) orientation, differentiation, balance, reaction and rhythm belong to coordination and are the most important components for the successful acquisition of motor structures in tennis.

Even when the tennis players do not compete, the motor structures in tennis remain equally complex. The differences are only in the share of the aerobic capacity employed at the expense of the anaerobic one.

It is important to say (although this does not belong to the motor space) that if coordination, accuracy, rhythm, and balance prevail in the structure of the required motor abilities, then the cognitive requirements for this sport will be higher (Horga, 1993). Since the capacity of anticipation and perception of the relation between a player and a ball in space and time are important in tennis together with the deliberation of their functions and possible future actions, the functioning of a parallel processor is also crucial (Horga, 1993).

4.4. Injuries

A typical injury in tennis players is the enthesitis in the attachment of the extensor muscles of the hand and fingers to the lateral epicondyl, that is "tennis elbow" (Medved, 1987:711). It is the result of frequent microtraumas which on their side are the result

of the vibration of the strings and the racket after the impact with the ball. The unfavorable conditions of the impact as hitting the ball in a sweet spot, stiff strings and a stiffer-framed racket, as well as playing with the racket the stringing of which is too tight, playing with hard balls without vibration dampening, and a poor technique of strokes contribute to the occurrence of tennis elbow.

Injuries of the shoulder usually occur because a player has not warmed up properly (Lloyd, 1991:77). They also occur in players who play tennis recreationally and who are usually self-taught tennis players and execute incorrectly both the service and the smash strokes. Injuries of the Achilles tendon are also frequent, and they are a result of playing on hard surfaces. Injuries to the upper leg muscles, lower leg muscles and foot are also frequent because of sudden speeding up and instantaneous stopping (Engelbrecht, 1979:9), and are induced by playing on hard surfaces, by the poor physical condition of players, and by being overweight. Injuries to the spine occur because of strong rotary movements when arching the back during the execution of particular strokes. Injuries to the back muscles and intervertebral disks, when the protrusion of the latter (discus hernia) occurs, are also possible. Correct technique, good selection of equipment, peak physical condition and playing within the limits of one's own capacities are efficient ways of injury prevention in tennis.

Conclusion

To answer the question 'what makes tennis a suitable form of social involvement and a game which has become extremely popular', we have analysed tennis at four different levels. In conclusion, becoming aware of the well-intended criticism concerning our, maybe, too ambitious effort to analyse all four levels (sociocultural-anthropological, sociopsychological, institutional and kinesiological) in one paper, we deliberately limited the purpose of the text to the "draft" for the future research. With regard to differentiating between the concept of sport as play and game, tennis appears as play when played on arbitrarily marked out courts, when played against a wall, when the goals and rules are combined in different ways as to emphasize the prerationality and spontaneity of the player(s), up to an agonal

form of play in which one should express his/her own capacity by maximally respecting and accepting the rules of the game. If play is attributed the characteristics which do not arise from the activity itself, but are the result of a wider context in which the play takes place, and if play is replaced by the principle of effect whose goal is the record and the victory at all cost, then we are talking about comprehending tennis as a game. If the motives of prize-winning and acknowledgement prevail regardless of the level of engagement in the game, then the social acknowledgement and victory become the criteria of success and failure in the game, which leads to a poor enjoyment of the game. On the other hand, the state of total immersion in the activity, because of the enjoyment of the game itself that it evokes, regardless of whether we are talking about tennis played at various competition levels, about tennis which is played at recreational level, or about tennis which is pure fun, makes it possible for this activity to have its own purpose. One then plays, not because of some future profit (reward, acknowledgement, recognition): playing becomes happiness in itself. At the level of social institutionalization tennis is a sport which is characterized by a high degree of structuralization (a high degree of structuralization ranges from protocol procedures and supplementary services to equipment and sports training). As for the social distribution, tennis is a universal sport, which is socially recognized and legalized, in which a large number of people participate either as registered members or as spectators and supporters. The kinesiological analysis of tennis leads to the conclusion that it is structurally a very complex game with a large number of technical-tactical elements which can be combined by the players into an infinite series of complex situations. The number of situations can be reduced if the game is played

without the actual scoring or if the players cannot vary all the elements. The motor structures of movement in tennis are characterized by a high degree of complexity, which is conditioned by moving the whole body through space in coordination with the flight of the ball. To acquire such motor structures of movement, abilities such as coordination, balance, agility, speed of a single movement, rhythm, reaction speed and explosive power are necessary. Because of an incorrect stroke technique in self-taught players there exists a high probability of injuries, additionally caused by playing on hard surfaces, poor physical condition of players, the player being overweight, and sudden speeding up and instantaneous stopping during play. To improve the motor abilities, out of which coordination is the most desirable one, one should engage in the learning process and in playing over years, which can consequently result in conducting an organized form of learning and playing in clubs under the expert supervision of instructors and coaches. Autodidactic learning leads to incorrect and undesirable acquisition of movement structures which decreases the efficiency, the opportunities, and sometimes even the fun of the game. One result is also a wider risk of injuries.

The game of tennis contains an infinite number of possibilities of combining technical-tactical structures and a large number of possible aspects of 'propelling the ball over the net', which creates a suitable ground for meeting the needs for play as self-sufficient and an end in itself. We can determine from the player's attitude towards the game, and not from the game itself, whether the engagement into a big family of tennis players is developed according to the syntagma 'Tell me what you play and I will tell you who you are' (external prime movers) or 'Tell me how you play and I will tell you who you are' (internal prime movers).

References

1. Applewhaite, C., B. Moss (1992). *Tennis - The Skills of the Game*. Wiltshire: The Lawn Tennis Association.
2. Baltzell, D.E. (1995). *Sporting Gentlemen: Men's tennis from the age of honor to the cult of the superstar*. New York: The Free Press.
3. Bartoluci, M. (1997). *Ekonomika i menadžment sporta*. Zagreb: Hrvatska akademija znanosti i umjetnosti. Zagreb: Fakultet za fizičku kulturu Sveučilišta, Hrvatska akademija znanosti i umjetnosti.

4. Bombač, I. (1997). Tenis je predvsem užitek. *Svet tenisa*, 2:53.
5. Bornemann, R., W. Brinker, K. Dreibholz, M. Skrolz (1981). *Tennis-Lehrplan 5: Konditionstraining / Trainingslehre*. München: BLV.
6. Bornemann, R., H. Gabler, J. Glasbrenner, J. Reetz (1993). *Tennis 1: Methodik*. München: BLV.
7. Bornemann, R., H. Gabler, J. Reetz (1993). *Tenis: od početnika do majstora*. Zagreb: Mladinska knjiga.
8. Bornemann, R., H. Gabler, J. Reetz, R. Schonborn (1990). *Tennis 2: Technik: Grundlagen*, München: BLV.
9. Bornemann, R., H. Gabler, J. Reetz, R. Schonborn (1990). *Tennis 3: Technik: Situationen und Variationen*. München: BLV.
10. Boxberger, J. (1987). *Der Tennistrainer*. München: BLV.
11. Bucher, W. (1993). *1002 Spiel- und Übungsformen im Tennis*. Schondorf: Hofmann.
12. Burcar, Ž. (1994). *Tenis trening*. Zagreb: BUR-CAR.
13. Burwitz, L., P.M. Moor and D.M. Wilkinson (1994). Future directions for performance-related sports science research: An interdisciplinary approach. *Journal of Sport Sciences*, 12,93-109.
14. Caillois, R. (1979). *Igre i ljudi*. Beograd: Nolit.
15. Coakley, J.J. (1998). *Sport in Society*. Boston: Irwing McGraw Hill WCB
16. Cohen, P., J. Kramer, D. Ralston, F. Stolle (1985). The right stuff against lefties. *World tennis*, 32(8): 19-22.
17. Cox, M., C. Applewhaite (1994). *Top coach tennis*. Leicester: Magna Books.
18. Donnelly, P. (1996). Approaches to social inequality in the sociology of sport. *Quest*, 48, 221-242.
19. Douglas, P. (1992). *The Handbook of Tennis*. London: Pelham Books.
20. Duran, M. (1995). *Dijete i igra*. Jastrebarsko: Naklada "Slap".
21. Džeba, K., M. Serdarušić (1995). *Sport i novac*. Zagreb: Reta.
22. Engelbrecht, S. (1979). Medicina za trenere i tenisače. *Tenis*, 2(5):9.
23. Fink, E. (1984). *Osnovni fenomeni ljudskog postojanja*. Beograd: Nolit.
24. Fontaine, E.A. (1997). Competitive tennis for children, an educational perspective. *Coaches review*, 12:6.
25. Friščić, V. (1990). *Tenis-tehnika*. Zagreb: Vjeran Friščić.
26. Friščić, V. (1981). *Teniski trening*. Zagreb: Savez teniskih trenera Hrvatske.
27. Gilbert, B., S. Jamison (1993). *Winning Ugly*. New York: Fireside.
28. Gullikson, T. (1994). Konterspieler Agressive Baseline Allround-Spieler Serve und Volley Spieler. *Tennis Magazin*, 5:55-63.
29. Harris, J.C. (1993). Using kinesiology: a comparison of applied veins in the subdisciplines. *Quest*, 45, 389-412.
30. Heruc, N. (1980). Teniski zid-da ili ne. *Tenis*, 9-10:25.
31. Hes, H. (1985). *Der taktische Ball*. Wiesbaden: Limpert.
32. Horga, S. (1993). *Psihologija sporta*. Zagreb: Fakultet za fizičku kulturu.
33. Huizinga, J. (1992). *Homo ludens*. Zagreb: Naprijed.
34. Jones, N. (1997). How tennis development can learn from the Ajax soccer-dynasty success. *Coaches review*, 11:5.
35. Kalyn, W. (1986). Family ties. *World tennis*, 33(8):35-36.
36. Karković, R. (1998). *Roditelj i dijete u športu*. Zagreb: Oktar.
37. Kramer, F. (1977). Tenis, In: Krleža, M. (Ed.), *Enciklopedija fizičke kulture 2. dio*, (pp. 384-398). Zagreb: Jugoslavenski leksikografski zavod.
38. Kretchmer, S.R. (1994). *Practical Philosophy of Sport*. Champaign IL.: Human Kinetics Books.

39. Leonard, W.M. (1988). *A Sociological Perspective of Sport*. New York, London: Macmillan Publishing Company, Collier Macmillan Publishers.
40. Letica, B. (1995). Više od igre - o suštini tenisa, *Tenis*, 4:30.
41. Liszt, M. (1992). *Pravila tenisa i pravila ponašanja*. Zagreb: Hrvatski teniski savez.
42. Lloyd, D. (1991). *Fit for the game: tennis*. Ipswich: Ward Lock.
43. Loehr, J. E. (1991). *The mental game*. New York: A plume book.
44. McAuley, E., V.V. Tammen (1989). The effects of subjective and objective competitive outcomes on intrinsic motivation. *Journal of Sport and Exercise Psychology*, 11: 84-93.
45. Medved, R. (1987). *Sportska medicina*. Zagreb: JUMENA.
46. Mraković, M., D. Metikoš, V. Findak (1993). Teorijski model klasifikacije motoričkih znanja, In: *Zbornik radova II. ljetne škole pedagoga fizičke kulture Hrvatske*, (pp. 3-17). Zagreb: FFK.
47. Schneider, H. (1994). *Lehren und Lernen im Tennis*. Hamburg: Czwalina.
48. Scholl, P. (1991). *Tennis ist toll*. Munchen: BLV.
49. Šentija, D. (1991). Odnos trajanja efektivne igre i pauze u vrhunskom tenisu. *Kineziologija*, 23(1-2):59-62.
50. Singer, R.N., R.F. Gerson (1981). Task classification and strategy utilization in motor skills. *Research Quarterly*, 52(1):100-116.
51. Skledar, N. (1996). *Čovjekov opstanak - Uvod u antropologiju*. Zagreb: Biblioteka "Filozofska istraživanja".
52. Skledar, N. (1997). *Osnovni oblici čovjekova duha i kulture - Uvod u antropologiju*. Zagreb: Biblioteka "Filozofska istraživanja".
53. Spencer, N.E. (1997). Once upon a Subculture: Professional Women's Tennis and a meaning of Style. *Journal of Sport and Social Issues*, 21, 4, Nov., 363-378.
54. Spirduso, A.C. (1992). Kinesiology in the cultural evolution of academia, *Quest*, 45, 413-424.
55. Vidas, F. (1986). Plohe posebnih nagiba. *Tenis*, 49:30.
56. *Zakon o športu* (1997). Narodne novine, 111.
57. *Zakon o udrugama* (1997). Narodne novine, 70.
58. Žugić, Z. (1996). *Uvod u sociologiju sporta*. Zagreb: Fakultet za fizičku kulturu.
59. Žugić, Z. (1999). Sport kao "Big business"-izvor profita, spektakl, gladijatorstvo? *Kinesiology for the 21st century, Proceedings Book*, Dubrovnik, 22-26.09.1999, 508-513.
60. Žugić, Z., L. Pavičić (1997). The relationship between (sport) sociology and kinesiology: co-existence, subordination, interminglement? *Kinesiology - the present and the future. Proceedings*, Dubrovnik, 25th-28th september, 183-187.
61. Žugić, Z., L. Pavičić (1999). Scenarij institucionalizacije sportskih igara-sociokulturni pristup. *Zbornik radova sa znanstvenog skupa Hrvatskog društva za sustave*. Zagreb: CROSS, 85-90.