

THE LOCATION OF THE SENSE OF CONTROL AND THE PRECISION OF TENNIS SERVICE

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Abstract:

In the literature on the subject, the sense of control is treated as a sphere of personality, which reveals the susceptibility to external control and internal controllability of man. The external location of the sense of control is characterized by the conviction that the behaviour of the individual is determined by environmental factors. The inner sense of control is shaped by the belief that a person's behaviour is guided by his decisions and actions.

The research objective of this exploration was an attempt to establish a relationship between the location of the sense of control and the precision of tennis service.

The study covered 40 players training tennis in two clubs in Podkarpackie, including 27 boys (67.5% of respondents) and 13 girls (32.5% of respondents). Respondents were diversified in terms of age, with 42.5% of respondents (17 persons) being tennis players aged 12-14 and 57.5% (23 persons) aged 15-18. The research material was collected using the Control Sense Research Questionnaire (KBPK) by Grażyna Krasowicz and Anna Kurzyp [Drwal 1979] and an original technical skill test based on the determination of precision of one of the technical elements - service.

INTRODUCTION

In the literature on the subject, the sense of control is treated as a sphere of personality, which reveals the externality and internality of man. The external location of the sense of control is characterized by the conviction that the behavior of the individual is determined by environmental factors. And the inner sense of control is shaped by the belief that a person's behaviour is guided by his or her decisions and actions. [Jarosz, Cwynar 1988].

The control mechanism is developing gradually. In the course of mental development, a person acquires the ability to control and direct their own behaviour. This is complemented by, among other things as a result of the creation and consolidation of his image of the world and himself, and as a result of following the effective actions of other people. Acquiring the ability to wait and give up on certain needs also plays an important role here. The most important of these are intentions, if they distract people from their fundamental goals. Temperamental factors, the level of intellectual efficiency and previous experience play an important role in the development of control mechanisms [Jarosz, Cwynar 1988].

The sense of control develops in three stages: stage I - an external sense of control in relation to situations which have both been successful and unsuccessful; „stage II - an external sense of control in relation to failed situations and an internal sense of control in successful

situations; stage III - a relative balance of sense of control in relation to successes and failures and the development of a generalized sense of control, typical for a given individual (with a predominance of one location)". [Szmigielska 1995: 19; 2008].

In specialist theories, the sense of control is treated as a dimension of personality (see the concept of social learning by J. B. Rotter [1966]). According to them, people can satisfy their needs thanks to different instrumental behaviours, and the reinforcements obtained thanks to them increase the expectation that the same behaviour will be followed in the future by identical reinforcements. When alternative behaviours are possible in a given situation, the probability of a behavioural potential (BP) is a function of expectancy (E) that it will provide the desired amplification and the reinforcement value (RV), i.e. $BF = f(E \& RV)$. There are situations in which amplification depends on human behaviour and those in which there is no human control. The author J.B. Rotter called the first situations skill and the second chance. [Zieliński 1983: 77].

People with an inner sense of control are aware that what has happened or will happen depends directly on their decisions and behaviour. A person with an external sense of control thinks that what happens to him/her depends solely on the case and cannot influence it. External LOC is associated with the conviction that it makes no sense to take action, because with our decisions we cannot influence any events. What is more, a person does not believe in the possibility of controlling the situation in which he finds himself [Drwal 1978: 307-345].

Many researchers argue that the belief in external control is a defensive mechanism against the expected failure. It is a way to explain to oneself from the defeat and to increase one's own value [Drwal 1978: 317].

There are many studies that confirm the relationship between LOC and other dimensions of personalities, and the relationship with motivation of achievements has become important for this study. The location of the sense of control is correlated, among other things, with a worse state of human health, less pro-health activity or a lower sense of responsibility for one's health [Kościelak 2010]. It becomes a creator of dissatisfaction with one's own body and appearance [Adame, Johnson, 1989]. Dependencies of this variable are also searched for in social activity, independence or interdependence [Drwal, 1995], in describing disorders of autonomy and identity [Wolska 1999; Wiatrowska 2015; Weaver, Wuest, Ciliska 2005].

The motivation for success is triggered by the desire to maintain and continuously strengthen one's self-esteem. This aspiration can be generated by various factors, most often by the willingness to achieve it, but also by an external state of affairs, e.g. an award. It turns out that the sense of the location of control is an important variable, influencing to a significant degree on the functioning of humans in various laboratory situations and life sciences: in decision making, task solving, learning, social and political activity, setting life aspirations, school achievements, etc. [Zieliński 1983].

Finding a link between LOC and the level of motivation for success is not an easy task. It is certainly not a straight line relationship. Changes are caused by many factors, for example: gender, age, education. Generally speaking, it can be said that external LOC aims to avoid failures and internal LOC focuses on meeting the goals set for itself. In the literature on the subject, there is information that people of internal LOCs choose the safest possible strategies to deal with them with a problem. At the same time, the same people, having a choice, prefer solutions that maximize their impact on the results obtained [Tomaszewski 1982, p.566].

Therefore, the research objective of this exploration has been an attempt to answer the question: what kind of control location in tennis players determines their service precision?

METHODOLOGY OF RESEARCH

The survey covered 40 players training tennis in two clubs in Podkarpackie, including 27 boys (67.5% of respondents) and 13 girls (32.5% of respondents). Respondents are diversified in terms of age, with 42.5% of respondents (17 persons) being tennis players aged 12-14 and 57.5% (23 persons) aged 15-18.

It was important in the research procedure to determine the level of technical training of the persons examined using the NTRP scale. The National Tennis Rating Program (NTRP), created by the American tennis association, makes it possible to compare technical skills between competitors. The scale does not take into account the tennis player's strength or speed, but only the technique of playing. The NTRP scale determines the characteristics of a player at a certain level of training.

NTRP 1.0 - this player is just starting to learn how to play tennis.

NTRP 1.5 - you can't talk about a player's experience here. The tennis player at this level focuses mainly on keeping the ball in the game.

NTRP 2.0 - a tennis player at this level knows the rules of both singles and doubles, has many weak points and needs a lot of experience.

NTRP 2.5 - tennis players at this level are already able to assess the ball's flight path, however, they have significant deficiencies in covering the court. At this level of training they are able to keep the exchange with a player at a similar level of training.

NTRP 3.0 - a player at this level is characterized by the ability to keep the ball at a medium pace, however, there is no certainty with all types of strokes. He is not yet able to match the strength and depth of strokes. A player at this level can see a visible improvement in the coverage of the court and an aggression associated with playing with the net.

NTRP 3.5 - this player is able to send players better in terms of strength and their direction on a moderately fast ball. However, he does not yet have the ability to make a variety of strokes. At this level you can see a visible improvement in the game of the net and the ability to cooperate in the double game.

NTRP 4.0 - the tennis player in this level of advancement is able to select the strokes in terms of their strength and depth, hitting both forehand and backhand. When playing situational games he is able to play a lob smecz, or prepare himself an attack to the grid. He develops the ability to force the opponent to make mistakes with his own service.

NTRP 4.5 - the tennis player is able to use force and rotation during strikes. In addition, he or she is able to cope with the pace of the game. He is characterized by good work of legs and choosing the right technique of play adequate to the opponent. The first service sends with great strength, placing the second service in the field does not cause him any problems. He is able to receive difficult games, plays actively with the net in the double game.

NTRP 5.0 - a player at this level of training has a good anticipation of strokes and is able to play spectacular balls. Regularity during the game is its characteristic feature. He is able to play the finishing balls and force the opponent to make mistakes. He is able to finish exchanges at the net with the use of a roller. He knows how to play lobbies, shortcuts, matches and half volleys. At the second service he places the balls deep enough and with appropriate rotation.

NTRP 5.5 - these players are able to use very strong balls interchangeably with regular play which is their strong weapon. During the match he analyzes the situation on the court and adjusts his playing style to the prevailing conditions on the court. Can play under pressure.

NTRP 6.0 to 7.0 - tennis players with NTRP 6.0 have undergone intensive training, which has prepared them to compete in competitions at national level. However, tennis players with NTRP 6.5 and 7.0 are world class professional tennis players. [<http://lechjaszowski.pl/ntrp.pdf>/ 02.07.2018]

Using the information collected from the coaches leading the persons surveyed and from the observation of players during the game, it turned out that the most numerous group of the surveyed are players at a low level of training (28 persons - 3.0-4.5), while the high level is represented by 12 persons (4.5-6.0).

In order to collect research material, a Questionnaire on Control Sense Research (KBPK) by Grażyna Krasowicz and Anna Kurzyp was used [Drwal, 1979]. The questionnaire contains four categories of events: contacts with peers (sympathies, spending time together, competition in sport, possibility of influencing the views of peers), contacts with parents (privileges, bans, reprimands, praise, possibility of influencing the change of parents' opinions), school achievements (good and bad grades, praise, etc.). The most important factors are: the destruction of a favourite subject, "lucky" and "unlucky" days, the realization of dreams, etc. The most important ones are: the destruction of a favourite subject, "lucky" and "unlucky" days, solving intellectual problems, etc. Each of the four categories contains five questions related to the successes and failures of the respondent. The whole questionnaire is equipped with 50 closed questions and two answers for each question. The choice of answers to the questions, similarly to R. L. Drwal's [1979], allowed to distinguish individuals from the internal ones and the external Control Location (LOC).

The second important way of measurement was the author's technical skill test based on determining the precision of the tennis service. The persons surveyed had 10 websites to perform. During the test, the effectiveness of each service was recorded, the number of accurate matches in the area of 1 meter x 1 meter separated from the "penalty" at the end line of the pitch and the method of its execution (service in the upper way, ball speed not less than 50% of the player's capabilities).

RESULTS OF RESEARCH

Following the proposed interpretation procedure, determining the averages (\bar{x}) as well as standard deviations (Sx) for the three LOC categories (S, P and S+P scales), it was possible to create numerical ranges, thanks to which the respondents were grouped according to with the type of control location. For this purpose, raw results and standard deviations of each study group were used and typical ranges were defined [Claus, Ebner, 1972; Brzeziński, 1999].

Table 1: Typical compartments for the study subjects.

Tennis players N = 40				
Ranges	Scale S	Scale P	Scale S+P	Verbal assessment
	\bar{x}	\bar{x}	\bar{x}	
Low	0,0÷6,9	0,0÷9,9	0,0÷16,9	LOC internal
Medium	7,0÷8,9	10,0÷11,9	17,0÷21,9	LOC not determined
High	9,0÷18,0	12,0÷18,0	22,0÷36,0	LOC external

Due to the differences in response between respondents, the following ranges have been established: low (internal LOC), medium (LOC not determined) and high (external LOC), are numerically different from each other. This state of affairs, subject to an established explanatory procedure, has allowed respondents to be classified as a group with a diversified sense of control in terms of location.

Table 2. Differentiation between girls (G) and boys (B) in terms of the location of the sense of control.

Persons surveyed	Tennis players N = 40							
	LOC internal		LOC not determined		LOC external		Overall	
	N	%	N	%	N	%	N	%
G	8	61,5	2	15,4	3	23,1	13	100,0
B	11	40,7	5	18,6	11	40,7	27	100,0
Overall	19	47,5	7	17,5	14	35,0	40	100,0

The differentiation of respondents in terms of the location of the sense of control, presented in Table 2, indicates the lack of similarity of intra-group distributions. Girls accounted for 61.5% and boys for 40.7% with an internal control location. There is a small variation in the number of boys and girls surveyed with an undetermined LOC, while a large one is visible between groups formed by including external LOC. Here 23.1% of respondents are girls and 40.7% boys.

It was important for this study to determine the relationship between the location of the sense of control and the effectiveness of performing a fixed part of the game - service, among the respondents. The measurement of the effectiveness of the service was made on the basis of the ratio of the correct play to the number of established attempts.

Table 3. Diversification of service effectiveness in the context of the sense of control localization among the studied girls (G) and boys (B).

Persons surveyed	Tennis players N = 40							
	LOC internal		LOC not determined		LOC external		Overall	
	N	%	N	%	N	%	N	%
G	68	48,9	25	18,0	46	33,1	139	100,0
B	72	45,0	35	21,9	53	33,1	160	100,0
Overall	140	46,8	60	20,1	99	33,1	299	100,0

The data in Table 3 shows that the highest precision of tennis service was achieved by people with an internal sense of control (46.8% of respondents). Less effective, i.e. 33.1%, are characteristic of people with external control localization.

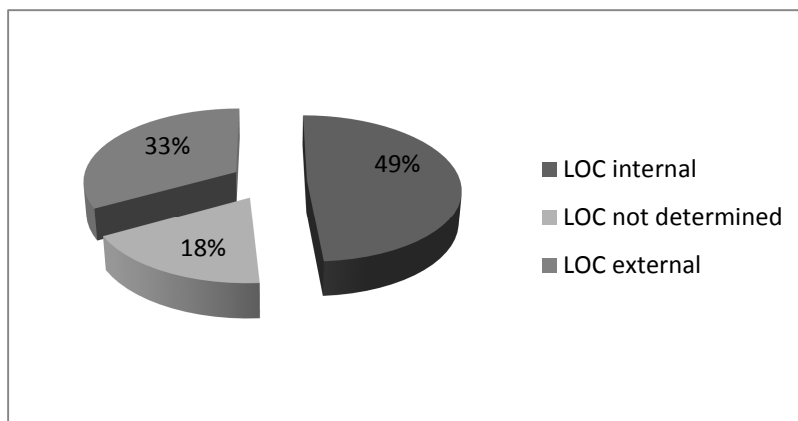


Diagram 1. Diversification of service effectiveness in the context of control location among the studied girls (G).

An analysis of the effectiveness of tennis services among girls (Figure 1) showed that there is a dependence on the location of their sense of control. Players with internal LOC made mistakes during the fixed part of the game less often (49% effectiveness) than external LOC (33% effectiveness). Girls with an undefined sense of control showed 18% effectiveness of the service.

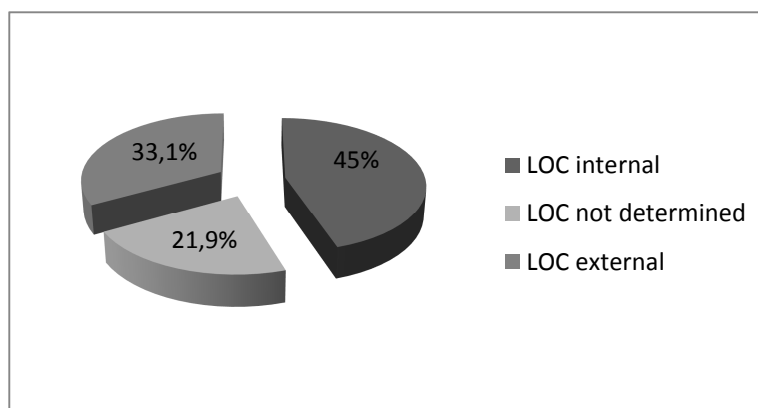


Diagram 2. Diversification of service effectiveness in the context of control location among the examined boys (B).

Also during the analysis of the results of the study in the group of boys (Diagram 2), the effectiveness of the service provided by persons with internal control localization was much better (45% effectiveness), while in the case of players with external LOC it reached only 33.1%.

An additional variable of service precision, which has already been revealed during the survey, is the surface of the court on which the respondents train. It turned out that people training on earth surfaces more often (63.4%) than on artificial surfaces (61%), are characterized by better precision of service.

CONCLUSIONS

Looking for an answer to the main research question: what kind of control localization in players training tennis determines their effectiveness of the game? The diagnosis of control

localization and a test of effectiveness of one fixed part of the game - service, among 40 players of tennis clubs in Podkarpackie Voivodeship was carried out.

It turned out that in individual sports, such as tennis, an important dimension of a player's personality may be the location of his sense of control regardless of sex. On the basis of the research material it can be stated that the effectiveness of the tennis service increases with the internal controllability of the personality of the player. A player representing this type of LOC, more often than with external control, is characterized by optimal concentration of attention, accuracy in action and work at a rational pace for a given discipline. Lowly susceptible to changing environmental conditions, it is able to use the "on/off" type of attention, which may contribute to making fewer mistakes in this sport.

To a large extent in sports activities it is based on its developed skills rather than on a combination of random situations or luck, as is the case with players with external LOC. People with an internal LOC, believing in their ability to influence the course of events, set a higher level of aspirations and rate the probability of success higher. They do so more when they are convinced that the results of the tasks will depend on their performance rather than on external factors.

Competitors with external and undefined control locations have different characteristics. Due to the high susceptibility of their personality to environmental influences, they are more likely than people with internal LOCs to use the "potentiometer" type of concentration during the game. As a result, this contributes to making more technical mistakes. Taking care of correct technical skills and the accuracy of such players' play may not be a priority on the road to sporting success. They often use excuses for their own failure, attributing them to external factors. The conviction of external control therefore plays a protective role in this case and helps to avoid responsibility and the need to actively overcome the threat.

An additional conclusion, which can be formulated after the analysis of research results, is the fact that the type of court surface on which competitors train more often determined their effectiveness of service. Athletes practicing on the traditional so called "sportsmen and sportswomen". More often than those who practice on an artificial surface, the effectiveness of the service was better than those who practice on an artificial surface. This may result from the fact that the service on this type of surfaces does not have such a significant impact on building a point advantage over the opponent. The examined element of the game is a component of sports competition, which can reach very different values depending on the disposition of the examined unit. Even highly qualified tennis players have a hesitation of service form.

Due to the small scope of research, this exploration may be a prelude to a comprehensive investigation into the determinants of the effectiveness of sports activities of players in various sports disciplines.

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