

«PSYCHOLOGICAL NICHE» IN SPORT: SPATIAL MEASUREMENTS

«ПСИХОЛОГИЧЕСКИЕ НИШИ» В СПОРТЕ: ПРОСТРАНСТВЕННЫЕ ИЗМЕРЕНИЯ



Tolochek Vladimir – Doctor of Psychological Sciences, Professor, Leading Researcher at the Institute of Psychology of the Russian Academy of Sciences, Moscow, Russia, tolochek@mail.ru

Толочек Владимир Алексеевич – д-р. психол. наук, профессор, ведущий научный сотрудник Института психологии РАН

Keywords: *psychological niches, phenomenon, sport, single combat, activity space, success.*

Abstract. *The effects of interaction between subjects of joint activity are discussed. Based on the analysis of literature and the study of styles of activity, it is stated that in various sports there is a stable proportion of subjects with certain complexes of individual characteristics (anatomical, morphological, psychophysiological, personal), associated with different «ranges» of their success. Formed among athletes different types of activity styles are focused on the actualization of different stable segments of «activity spaces». It is possible to distinguish social, psychological and biological determinants of the phenomenon «psychological niches».*

Ключевые слова: *психологические ниши, феномен, спорт, единоборства, пространство деятельности, успешность.*

Аннотация. *Обсуждаются эффекты взаимодействия субъектов совместной деятельности. На основании анализа литературы и изучения стилей деятельности констатируется, что в разных видах спорта имеет место устойчивая пропорция субъектов с определенными комплексами индивидуальных особенностей (анатомо-морфологических, психофизиологических, личностных), сопряженная с разными «диапазонами» их успешности. Формируемые у спортсменов разные типовые стили деятельности ориентированы на актуализацию разных устойчивых сегментов «пространств деятельности». Можно различать социальные, психологические и биологические детерминанты феномена «психологические ниши».*

The study was carried out within the framework of the State task of FASO, theme № 0159-2017-0005 «Resource functions of abilities of different levels: the effects of integration and differentiation in the structure of individuality».

Introduction. The problem of generalizing and presenting the picture the «whole» is acute enough in relation to socio-psychological phenomena. It will not be erroneous to claim that the overall picture, the integral vision by scientists of the interactions of a variety of socio-psychological phenomena, still remains in the sphere of assumptions, scientific forecasts, concepts and wishes; more often such questions are not even raised.

In psychology the theme of interaction between different social groups representatives is studied and covered one-sidedly. It is definitely not the central

theme. The most adequate material for discussing the problem, conventionally called «psychological niches» (PN), we find in the sphere of sports. According to the model of sport, to be more precise – the high performance sport (HPS), – in 1970-2000. a rather extensive empirical material was accumulated, that allows us to reasonably discuss the problem mentioned above, which on a broader scale can be defined as the distribution of interacting subjects (individuals, individuals) in social space.

Materials and Methods. Research aim is to study and to describe the phenomenon of «psychological niches» on the model of sport; analysis of its social, psychological and biological determinants.

Organization of research included: 1) Analysis of scientific literature. 2) Included observations (working as a practical psychologist in teams and sports



collectives) 3) Psychodiagnostics: express methods of studying the typological properties of the nervous system of E.P. Ilyin, test questions of G. Eysenck and R.B. Cattell were used; the author's technique «Styles of activity» was used to study the features of the styles of wrestlers' activity [18] (more than 150 people of the sportsmen of the higher category, freestyle wrestlers, classical and judo were surveyed). 4) Interrogation of experts (where quality trainers of the highest category (12 people) were involved.)

Research tasks: 1) To describe the manifestations and main effects accompanying the formation, functioning, fixing, preservation of the phenomenon of «psychological niches» in sport; 2) To reveal the biological, psychological and social mechanisms of the formation and functioning of the phenomenon «psychological niches».

Results. Interaction of subjects in social field. In biology from the middle of XIX century. the concept of «biological niches» appeared. In works of C. Darwin, D. McFarland, R. Hind, and others, it was understood as the role of the animal in the biological community, determined by its relationship with other organisms and with the physical environment; the boundaries of the population and the characteristics of the behavior of individuals, determined by their symbiosis and competitive relations with other animals, providing the best conditions for survival. The phenomenon of «biological niche» reflects mechanisms of environment adaptation of a species as a whole, rather than a single individual; species as a biological «unit», in turn, is part of the system of interaction with other species – the biocenosis. On the one hand, the selection and description of the «biological niche» was the result of observations by naturalists, on the other – the search for «units» of the living, allowing to explain the laws of its evolution and to find the basis for the formation of a new methodology of discipline. If we recognize the relevance of distinguishing the «units» of the psychic, the «units» of social(groups of interacting people – participants in joint activities, communication, perception, etc.), if we recognize the importance of studying the role of group effects, then the issues of studying the interaction of individuals as individuals, and their interaction with «us» and «them» in space and time, should also be recognized as relevant.

The high performance sport as a model for the phenomenon studying. In the the high performance sport (HPS) the interaction of people in their «us» and in «them» groups is most striking, due to its features: 1) The rivalry of people in sports is extremely expressed; it is not hushed up, not tabulated, not camouflaged

by plausible motivations; 2) There is one result of rivals meeting, clearly and differentially fixed (a mutually exclusive measure of their success, often without compromise solutions, often without secondary benefits for the loser); 3) The ultimate tension of physical and mental abilities in the process of rivals interaction; 4) High personal significance of the outcome of their struggle; 5) Short period of rivals meeting (therefore, giving the opportunity for a correct study of different phases of the phenomenon); 6) Relatively short period of a person's life in sports; all stages of subjectogenesis are extremely expressed (from the beginning of mastering it by this activity to its completion); 7) Clear and differentiated assessments of the success of the athlete at all stages of his career (measure progress at different ages, results in tournaments, measures to change activities in different situations, connection with the state of the external environment and internal)

Social, psychological and biological determinants of the phenomenon. Analyzing the materials of literary sources, it is possible to single out a number of interesting facts. So, in independent differential-psychological reseaches, the unequal success of individuals with different individual psychological characteristics was systematically noted [1, 5, 6, 7, 8, 10, etc.]. There are significant differences in the proportion of body parts of individuals (body length, legs and arms, hips and shins), preferring these or those kinds of sports, and within the species boundaries – different distances, specializations, roles, styles of activities, different technical actions and tactical and technical combinations. Representatives of different body types differ most often and according to their sporting results. Some of them often achieve high results, others less often [2, 3, 4, etc.]. Let us also highlight the distribution of individuals both within the boundaries of the sport and specializations in it, depending on their psychophysiological organization. Thus, in foil and epee fencing there are more individuals with a weak nervous system, mobility of excitement, balance in external and internal balance, while in saber fencing there are more individuals with a strong nervous system, inertia of excitation predominate; in gymnastics there are more individuals with a strong nervous system, inertia of excitation and inhibition, balance in external and internal balance prevail; in rhythmic gymnastics – with a weak nervous system, inertia of excitation and inhibition [1]. Among the classical wrestlers, there are more individuals with a weak nervous system, inertness or weak mobility of excitation, balance or predominance of inhibition by external balance and internal balance; among of free-style wrestlers there are more

individuals with a strong nervous system, medium and high mobility of excitation, medium mobility or inertia and inhibition, even-tempered in the internal balance; among judo wrestlers there are more with a weak nervous system, inertia of excitation, moderate mobility of inhibition, equilibrium or predominance of external stimulation and internal inhibition [10]. In sports games – at the beginning, representatives of one type are more active and efficient, in the middle – the second ones, at the end of the meeting – the third ones; in a situation of success, ones are more reliable and effective, others are unsuccessful [1, 6, 11]. In each sport there is a specific shift in the profiles of personal traits, more or less accentuation of personality traits of outstanding athletes [1, 6, 7, 10, 11], persons with different functional asymmetry [3, 4, 5], individuals who perform more successfully in personal or team competitions [6, 7, etc.].

A manifestation of a peculiar positioning in the activity area can be considered transitions of athletes in another weight category (this lets escape from the inconvenient main rival, use another typical tactic). The «legitimate analogues» of the phenomenon under discussion must be recognized as the choice and fixed role for the athlete in sports games; many outstanding athletes declared themselves in this role and could hardly become such in the performance of other roles; this is the formation of a peculiar style of activity [1, 6, 7, 11].

Distribution in the activity area of different styles representatives. Interesting facts have been repeatedly noted in our previous researches [8, 9]. In each sport, several styles are distinguished, styles are understood as stable psychological systems of human adaptation in the environment. But in a competitive environment, people (including sportsmen) do not just exist, function, but they are actively fighting (including among themselves) for more efficient performance of activities. As a rule, success accompanies those who make full use of the necessary resources, who keeps and protects their «range» of resources from destruction better (for example, spends the entire fight at an average pace, at medium distances, encouraging the enemy to often attack), who better blocks the use rivals resources of their «range» (for example, does not allow the «tempo» to fight at a high pace, using its advantage in the functional preparedness). Thus, in the general activity space, a kind of stable subspaces typical for representatives of different styles are regularly created (built, crystallized, structured). Sportsmen as it were «distributed», «dispersed», «divided», steadily «positioned»

in this common space. (This complex phenomenon must first be well described and understood before an adequate scientific concept is found, while for the time being we use a number of equivalent concepts, including those cited.)

Let's supplement the empirical material at our disposal with the analysis of the literary material – according the survey data of members of junior teams, youth picked teams and picked national teams (classic wrestling, free, judo). We add the following to the above facts. In our researches, 3-4-6 typical styles of activity are distinguished, the main features of which are reproduced by other specialists on models of different sports [1, 6, 7, 8, 9, 10, etc.]. The first two main styles reflect two polar types of adaptation of subjects to the requirements of activity and environment – the types of «reactive» and «preventive» adaptation (According to E.A. Klimov): the styles of some formed according to the «logic» of the activity and vary variably when the conditions of it change; secondly – through various «adjustments», additional contours of regulation and management of operating conditions, leading them to the optimal option.

In different sports, researchers note a stable proportion of representatives of different types of styles (or rather, disproportion), more often in the proportions: 40% – 30% – 20% – 10%. Proportion (disproportion) of representatives of different styles, as a rule, is supported by their different successes: some of them often achieve high results, others more rarely, third and fourth ones remain outsiders (see reviews [1, 2, 3, 4, 10]. At the same time, representatives of different styles take into account different characteristics of an opponent, reflecting its different qualities, different sides of physical, tactical and technical and psychological preparedness. Metaphorically speaking, some athletes are attuned and oriented to one kinds of segments of the activity space, others – to the second ones, third group to the third ones. The whole space of activity appears to exist in the aggregate of its relatively independent segments [10].

Factography, phenomenon and scientific concepts. A key condition for each developed activity is its essence as a joint activity of the subjects, differently organized and differently functioning at its different levels, in its different segments. Distinguishing the interactions of the subjects, we distinguish several levels of this interaction. The closest connections (at the psychophysiological, personal and social level) are formed between the trainer and his pupil – the first level of interactions between subjects. As a second level of organization of activities, let's highlight systematic active



interactions with partners (athletes – young and veterans, members of the sports team, doctors, masseurs, a psychologist). The third level of organization of activity is called active interaction with rivals. Everything is decided in a personal meeting of two rivals – original partners in their joint activities. The fourth level recognizes the activity of judges, administrators, fans. Their role is often underestimated (if the athlete succeeds) or hypertrophied (in case of failure).

Psychological niches in sports. The most studied aspects of the discussed problem will be considered the analysis of the role of biological determinants (natural human aptitude, in particular, anatomo-morphological features as a factor of success in different types of activities, including sports, the preference for different technical and tactical-technical actions, different tactics in dependence of anatomical-morphological, psychophysiological and personal characteristics of a person). It is clear that the advantages of an athlete in physical strength (or strength preparedness) will induce the use of an attacking power style, the advantages in endurance (functional preparedness) – tempo, in dexterity and coordination – of the game and counterattack style. But what else can influence the similar distribution of people in the social space, in particular, in the space of one kind of sport? Why in similar, at first sight types (fencing on epees (rapiers) / on sabers, running at 100-200 m. / 400-800 m., Gymnastics / rhythmic gymnastics, throwing a spear / hammer (core), diving / trampoline, etc.) there is a domination of persons with opposite typological complexes?

What can influence the formation of PN, in addition to stable features of a person (his psychophysiological and personal organization)? These are typical psychophysiological conditions, structures of emotional experiences typical for different activities, typical strategies for achieving social success; ie. procedural aspects of activity (determined by the biomechanics of movements, the dominant mechanisms of oxidation, postural-tonic reactions, etc.). Even a slight shift in the duration of intensive activity over time – 10-20 seconds, 40-60, 120-180 seconds or more, leads to minor changes in the biomechanics of movements, but to the transition of the body to different physiological regimes that provide this activity (creatine-phosphate, glycolytic, alactic / lactic or aerobic oxidation), generating various psychophysiological conditions and, accordingly, emotional experiences.

Indeed, there are close activities, or specializations: a short / long sprint; fencing on a epee (rapier) / on sabers; freestyle / classic wrestling; in wrestling and in

boxing – a semi-heavy weight category / heavy, etc. The principal difference between them is as follows: the leading, «key» abilities required for the success of the subject (in this case, motor, locomotive – coordination, power, speed, functional) in the neighboring specialization are complemented or, on the contrary, compete with the abilities of other groups (in this case, depending on the inclinations, including – the psychophysiological organization of the individual), with typical psychophysiological conditions (arising in the process of training, competitions, in interactions with the partners), with structures of strong-willed personality qualities, etc.

So, the important difference between fencing on epees (rapiers) and on sabers, is that in the second case there are not only injections but also blows with a blade (at each training session, at each tournament!). So, the pain thresholds of the individual (in persons with a strong and inert nervous system they are higher, therefore, they are easier to tolerate, are more patient in pain) become the factor of choosing a sport and specialization. Weakness and mobility of nervous processes contribute to the development of coordination abilities, these fencers have better «technique» and tactics, which give them noticeable advantages. Nevertheless, it is understandable why they will often leave the «saber» and focus on fencing with epees and rapiers. Freestyle wrestling is more «tough» and the probability of injury is higher in it than in classical wrestling and judo. Gymnastic exercises involve a constant risk of serious trauma (which is less likely in rhythmic gymnastics). Therefore, not only the coordination abilities, that promise the young athlete rapid progress, are important, but also the person's attitude to risk (they also dependent on his psychophysiology, including) play an important role. Consequently, people with a weak nervous system, with mobility of nervous processes prefer judo and classical wrestling, rather than free, rhythmic gymnastics, rather than sports one.

In the short sprint (100-200 m), speedy qualities of the runner are decisive (the development of speed abilities is facilitated by the weakness and mobility of the nervous processes, as the makings of these abilities). In the long sprint (400 m) and at medium distances (800-1500 m), a large oxygen debt arises during running, causing extremely unfavorable human conditions. People with a strong and inert nervous system are easier to tolerate, they are more patient. It is understandable that in the experience of testing themselves at different distances, in the balance of performance and procedural factors, people are more often moved to one or another specialization within the boundaries

of the sport. In different sports rivalry also has a different emotional colour. Rigid contact confrontation – single combat – on the carpet, in the ring is not identical to the competition on the track, in the sector; it is not identical to the competition in the teams in contact sports games, the more so – the competition in the games «through the grid.»

Conclusion. If the biological and psychological determinants of the phenomenon «psychological niches» can be considered sufficiently studied, then social ones should be the subject of systematic research. It should be noted that social determinants, such as the social status of activities, are the prestige of a particular sport, the social significance of the success of athletes' performance in the international arena, the uniqueness and cost of the infrastructure of individual species, the amount of material investments required for occupations of one kind or another, – can also become objects of purposeful management.

Literature

1. Ilyin, E.P. Psychology of sports / E.P. Ilyin. – St. Petersburg : Peter, 2002. – 122 p.
2. Martirosov, E.G. Technologies and methods for determining the composition of the human body / E.G. Martirosov, D.V. Nikolaev, S.G. Rudnev. – M. : Science, 2006.
3. Moskvina, V.A. Interhemispheric asymmetry and individual development of a person / V.A. Moskvina, N.V. Moskvina. – M. : Sense, 2011.
4. Nikityuk, B.A. Integrative approaches in age and sports anthropology / B.A. Nikityuk. – Moscow: Izd-vo Institute of Psychology, Russian Academy of Sciences, 1999.
5. Ogurenkov, V.I. Motor asymmetry in the box according to the indicators of psychomotorics / V.I. Ogurenkov, A.V. Rodionov // Theory and practice of physical culture. – 1975. – №6. – P. 15-17.
6. Rodionov, A.V. Influence of psychological factors on athletic performance / A.V. Rodionov. – M.: Physical Culture and Sports, 1983.
7. Sopov, V.F. Theory and methods of psychological training in modern sports / V.F. Sopov. – M. : Physical Culture and Sports, 2010.
8. Tolochev, V.A. Similar structures of activity styles as a factor of the subject's success / V.A. Tolochev // Questions of psychology. – 2015. – №6. – P. 112-122.
9. Tolochev, V.A. Typical styles of sports activity as a psychological phenomenon: resources of efficiency / V.A. Tolochev // Psychological journal. – 2016. – T. 37. – № 6. – P. 70-82.
10. Tolochev, V.A. Styles of activity: resource approach / V.A. Tolochev. – M.: Изд-во ИСПАН, 2015.
11. Shigaev, A.S. Hockey / A.S. Shigaev. – M.: Physical Culture and Sports, 2012.

