

## BLOCK PERIODIZATION – A BREAKTHROUGH OR A MISCONCEPTION

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### SUMMARY

Block periodization emerged as a new idea in the preparation of athletes. Based on the analysis of the traditional theory of sports training and its segments and training periodization during the competitive season, the supporters of block periodization made a number of objections. The main conclusion was that classical periodization no longer meets the requirements of modern sports because of the extended competition calendar. Classical periodization is based on the simultaneous development of multiple abilities over a longer preparation period and large volumes of work. It prevents the athletes from participating successfully in several competitions during the season. However, according to the supporters of block periodization, this applies only to top athletes.

On the other hand, there are many objections to the justification and logic of block periodization. The term "block periodization" is not adequate, and the criticism of the classical theory is methodologically incorrect because it refers to old bibliographic sources, (and) the opponents are not mentioned. It is not realistic in practice to work successively on more abilities because of short periods of preparation, there is not enough time to recover after such an effort while the risk of injury is significantly higher. Most importantly, according to the block periodization it is difficult to be fit at the right time, which is the main purpose of periodization. Therefore, one could rather say that block periodization is a misconception, rather than a breakthrough in training.

**Key Words:** youth, training process, fundamental skills, fundamentals of shooting, shooting percentage.

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The theory of sports training gradually evolved on the basis of practical experience which has rapidly accumulated since the revival of the Olympic Games. Over the years sport increasingly gained social significance, particularly after the Second World War. The achieved results were not only the measure of human capabilities, but also a means of promoting socio-economic systems, including the system of preparing athletes for the most important competitions. Initially, the preparation system was largely dependent on seasonal and climatic conditions, the season of the year and calendar events. Thereby, during the 60s people began to talk about the problem of periodization of athletic training as an important segment of the theory and practice of athletic training.

The division into periods is not new, because people have always done it in every activity, but the

periodization of athletic training during the year, in order to achieve the best results at the time of a competition, was a relatively new idea. Firstly, it was thought that periodization depends on seasonal and climatic conditions, and the events calendar. However, the wider and more comprehensive analysis of the competitive reality led to serious theoretical assumptions, even to the level of the theory of periodization which Matveev (1964, 1977) established and scientifically explained, relying on numerous predecessors. He proved that regularities of the development of sports fitness are the basis of periodization, and that periodization in fact represents the management of the process.

Matveyev became such an authority in that area that his name became synonymous with the periodization theory of athletic training. That is why in many

works that deal with the problem of periodization, this theory is often referred to as the "Matveyev's theory". Since it has lasted for almost half a century as current theory, it is now referred to as the "traditional periodization theory" or "traditional Matveyev's periodization theory".

First serious criticism of this theory appeared around 1990 and exploded in the last years of the last century. The highest authorities in this field were involved in a major controversy in the most important magazine in Russia (*Теория и практика физической культуры* - Journal of Theory and Practice of Physical Culture). Some authors sharply attacked the basic assumptions of current theory, while the others vigorously defended them. Certainly the biggest critic and the biggest name among the opponents was J. V. Verhoshansky. He and several of his supporters expressed a number of critical views to the account of the Matveyev's theory. The question of periodization during the year was raised within the criticism of the entire theoretical basis of the current theory of sports training. In contrast to classical periodization, the so-called "block periodization" was suggested, which originated as an idea between 1970 and 1980 and was later increasingly promoted in the works of Verhoshansky and his followers. "Block system - it's a non-traditional form of organization of the training process in the annual cycle, designed exclusively for top athletes, in amateur as well as in professional sports." (Верхошанский, 2005). This idea was most fully developed in the book of V. Issurin (2008) written in English under the title "BLOCK PERIODIZATION: A BREAKTHROUGH IN SPORTS TRAINING". The book has been translated into several languages, and also appeared in Serbian translation (Issurin, 2009).

What do supporters of the new block periodization object to the traditional theory of sports training and where do they see the advantage of the new approach that they propose regarding the preparation of athletes?

First, it should be noted that block periodization does not deny a traditional periodization values. Issurin (2009) points out: "The traditional approach is still suitable for standard athletes, but not for top ones", so all complaints to Matveyev's theory apply only to this segment of sport.

The opponents reduced main reasons why the traditional periodization of athletic training is unsustainable in the training of top athletes, to the following:

- the number of competitions and sports results dramatically increased during the previous decade;

- total volume of training has been significantly reduced;
- new concepts appeared that influence the planning and design of alternative periodization of training.

Classical periodization has many flaws which include (Issurin, 2009):

- limitations caused by simultaneous development of many motor and technical abilities;
- inability to provide preparation for the main competitions, and successful participation in numerous competitions;
- too long periods of basic preparation and preparation for a particular sport.

In the extensive work which explains the need to apply block periodization in practice, Верхошанский (2005) points out that the earlier analysis of the preparations of Soviet athletes revealed a number of shortcomings and negative tendencies. Everything is conditioned by "[...] low scientific, theoretical and methodological level of the used concept of training periodization." During the work with top athletes mistakes were made in the following:

- in the annual cycle the loads of different directions were used chaotically and distributed relatively evenly;
- exercises with a load were mainly used in an unspecialized way and unsystematically for the development of force and as an additional tool for solving the main tasks of training;
- in the microcycle the means with very high volume were unjustifiably used, which unsettled the synthesis of proteins that is an essential component of adaptation;
- a general tendency to increase the summary volume of loads has become a goal in itself.

"All of these tendencies had the same cause - a complex parallel form of organization of training loads [...]" and in practice coaches were led by the slogan: "If you want to beat the opponent - you should train more than him" (Верхошанский, 2005).

Issurin (2009) states that "In contrast to the traditional model, the concept of block periodization is characterized by the following advantages:

- total volume of training can be significantly reduced, thereby also reducing the risk of athletes overtraining;
- training plan that provides more maximal competition performances provides and also facilitates successful participation in numerous competitions throughout the season;

- monitoring and control of the preparedness can be effective because every drastic decrease in the ability of an athlete can be evaluated in every mesocycle;
- nutrition and recovery program of athletes can be adequately changed depending on the prevailing type of training, and
- annual plan that includes multiple phases of training provides more favourable conditions for achieving maximum results during the main competition in a season.«

If we acknowledged the great writer Borges' thought that a book that does not have a counter-book is considered to be incomplete, perhaps it could be said for every theory as well. Therefore the authors who invented block periodization and critically reviewed the classical theory of periodization should be honoured. It is primarily Verhoshansky whose criticism sparked numerous authors to discuss the problem of periodization in a significant journal, *Теория и практика физической культуры* (Journal of Theory and Practice of Physical Culture - Moscow). However, everyone who criticized the classical theory of periodization may be objected for several omissions that did not escape the authors who stood in defence of the classical theory:

1. The term "block" is very problematic when you put it in line with other terms that have long been in use: cycle, period, stage or phase. A cycle makes one designed, constructed and complete working unit with all the interrelated processes in it. A period of time is limited unit in a season in which the emphasis is on improving some process, while a stage and a phase are parts of the process. These terms reflect the essence of the competition process and of the preparation of athletes throughout the season. The term "block" is not a term related to time and it cannot mark the period in which a competition or training process takes place. Rather, it can be used to mark some small unit, a structural element of the whole. Without looking deeper into the essence of the idea, it can be concluded that in this case there is a fundamental inconsistency between the terms "block periodization" and its scientific definition – the term (Koprivica & Ćosic, 2011).
2. By criticizing classical theory of periodization, Verhoshansky and Issurin rarely quote Matveyev and analyze his theories, but they rather freely interpret them. This is evident in the book by Issurin (2009) when he gives the postulates of classical periodization in the table entitled "Ge-

neral characteristics of training periodization according to the traditional approach" (Матвеев, 1981), but the reference list does not contain this work. In addition, Issurin presents graphs of annual cycle, with one, two and three macrocycles which Matveyev published in distant 1977 based on the study of the sports practice of the time of a large number of athletes. In his most significant and most comprehensive article on the problem of classical and block periodization Верхошанский (2005) uses 107 bibliographic units (out of which 71 are self-citations), and neither of them is by Matveyev. A list of references for the third chapter of the book by Issurin (2009) best illustrates to what extent a subjective approach is expressed in considering the issue of periodization. While presenting problems of microcycle, mesocycle and individual trainings he does not mention Matveyev at any point, not even in the list of references. This is not only a major methodological error, because a polemics and drawing parallels between the two concepts are in question, but it is also an injustice to the author who was the first to scientifically explain the structure of training and who is quoted without exception by all authors in the field.

3. Verhoshansky and Issurin exclusively refer to the works of their like-minded authors and are silent about the works of many authors who are on opposite positions. It is unacceptable to completely ignore the important works of the leading world authority in the field of sports training theories, Платонов (1998, 2008, 2009), who vigorously confronted block periodization.
4. Major omission of the proponents of block periodization is that their critique is based on older works of Matveyev, and they did not talk about everything that he later added and changed (Матвеев, 1998, 1999, 2001) in accordance with the significant changes in the world of sports.
5. The difference between Matveyev and his opponents may best be seen in the criticism of one of the few quotations which Верхошанский (1998) states. Verhoshansky accuses Matveyev that he does not hide the negative attitude towards biological knowledge "because he claims that the macrostructure of training is not determined by biological laws, but it is determined on the whole (emphasised V. K.) by the laws which rule the sports fitness". Basically Matveyev does not deny the role of biological laws, but these laws are not the only ones, and are not

independent from others, which affect the management of sport shape. Unlike Verhoshansky, Matveyev has a holistic approach in every work that is necessary every time a complex bio-psycho-social nature of man is in question.

6. It is interesting that in practice failures are attributed to the classical theory of periodization without analysis to show the way the classical theory was actually used (Верхошанский, 2005). Great width, which, in basic principles, the Matveyev's theory has for various and not always predictable situations in practice, shows that its practical implementation has to be creative (Платонов, 2009).
7. Matvejev was objected about mechanical sorting and linking individual training in the greater whole – microcycles which further build mesocycles and macrocycles. This objection is not justified because it is the exact opposite of the basic idea of periodization. Matvejev himself believes that training structure cannot be determined in advance. The right structure can be seen and analyzed only after the training and competition period is completed. Various structural parts must exist, because there are various influential factors. Strain and rest are regulated in microcycle, a cumulative effect of physical training is controlled in mesocycle, and sport shape is managed in macrocycle. Top sport shape, the greatest cumulative effect and rested athlete in the phase of the supercompensation of the most important skills, should all exist in the time of the most important competition. The main purpose of periodization is to achieve the best result in the most important competition of the season. Therefore, the classical theory of periodization seeks long-term, gradual and non forcing preparation for the important competition, which includes a series of preliminary competitions. Probability to succeed in the most important competition, if the classic periodization method is applied, is about 60-75%, while the practice has shown that the application of a block periodization lowers the probability to just 5-15% (Платонов, 2009). The commercialization of sports has a significant impact on the competition calendar and spread it to the extent that it is no longer rational (Koprivica, 2009). Selecting the most important competitions and preparing for them according to the classic periodization is more and more becoming a factor of sports longevity. Thus, block periodization does not correspond to the top sports with more sporting competitions in the season in which several of them are primary. If an athlete, according to block periodization, participates in all competitions in order to achieve maximum results, then his career cannot last long.
8. There is an obvious contradiction in some basic settings of block periodization. If it applies only to the top athletes and to the need to apply more training blocks in which only selected skills are developed and if it is necessary to participate successfully in a greater number of competitions throughout the year, how is that possible in a situation where competition period lasts for 10 months and the preparatory period is significantly shortened (Koprivica, 2009a, 2009b; Koprivica & Jankovic, 2010). Not only is there no time to implement block periodization, but it is impossible to develop and maintain a high level of all abilities and skills, harmonize them and bring them to such a level that it allows athletes to be successful over the long season of competition. Thus, block periodization does not create conditions for individual maximums and disturbs harmonization of more abilities and skills.
9. Block periodization mainly deals with large mesocyclic blocks that are "true embodiment of a block periodization concept" (Issurin, 2009). They have three different effects: accumulation, transformation and realization (Ibid). Compared to traditional periodization, to classical medium size structural parts (mesocycles), it is nothing new, because it is based on what is already known and scientifically explained in the training theory: working with the increased load in comparison to those on which the athlete is adapted - relativestabilization of the changes - cumulative effect of previous work.
10. A remark that classical theory recommends exercise which includes "a little bit of all" and simultaneous development of multiple skills is not substantiated. Although this remark is constantly emphasized, not a single author, supporter of a block periodization, specifies an appropriate quote neither from any of Matvejev's works nor from the works of other significant authors which relies on classical theory. It is true that classical theory recommends that all abilities must be treated in training, but with an emphasis on the particular ability in compliance with the specificities of the sport discipline, athlete's individual characteristics, climate and



material and technical factors (Платонов, 2009). Especially, it should be adjusted to the position of training in the season and to major competitions. While some skills are developed, the others must be maintained at the required level. In a long competition period, a big problem is to maintain the level of competence, which means even less time for real development programs. Therefore, the preparation for the Olympic Games in the year when the Games are held is very specific (Koprivica, 2009b). Development of all abilities is practically not possible, because development means greater loads than those on which the athlete is adapted. Recovery

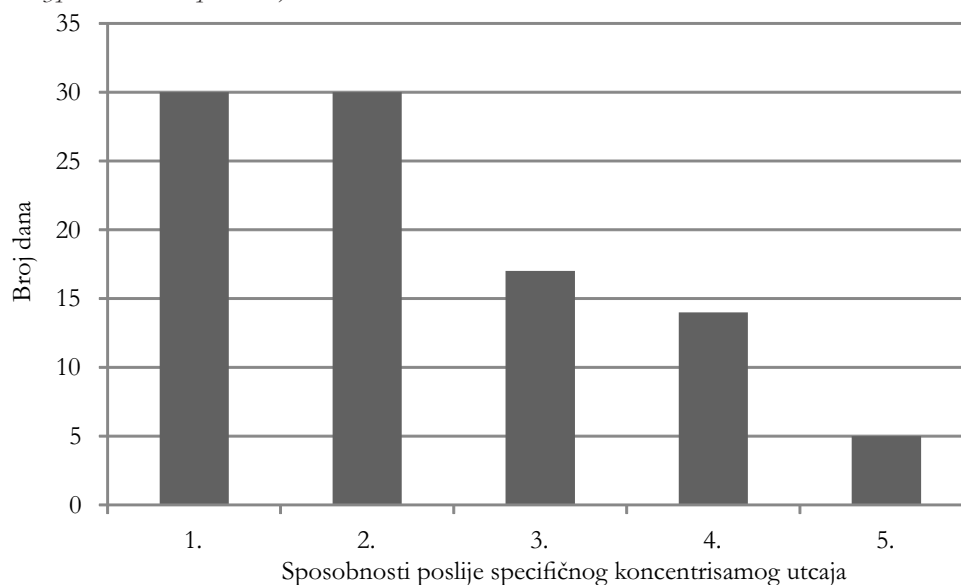
from a great load training where athlete works on one ability lasts for at least 48 hours (Платонов, 1987, 2004). If they developed more skills (not even all of them!) simultaneously, it would mean an implementation of more consecutive trainings with maximum and heavy loads. This contradicts to one of the basic principles of training, which Matveyev himself defined and explained - undulating load dynamics. Moreover it is not possible to realize such trainings because of the accumulated loads and insufficient time for athlete's recovery.

11. If, according to block periodization, a single ability development is implemented in a relati-

**FIGURE 1**

*Residual training effects of different abilities after specific concentrated impact*

(Source: Иссурин & Шкляр, 2002)



Legend: **1.** - Aerobic endurance; **2.** - Maximum force; **3.** - Anaerobic endurance; **4.** - Strength endurance; **5.** - Alacate ability.

vely long period of time, then the total volume of training must be reduced because the same orientation of training must leave more time for athlete's recovery. In addition, the accumulated fatigue increases the likelihood of injury, and the depletion of the same biological systems can be problematic from the standpoint of athlete's health. The solution is either to work in a complex microcycle, which the block periodization excludes, or to reduce the loads for recovery and reconcile with the fact that some tasks of training will not be done.

12. Block periodization is also based on the so-called residual effect of training (Иссурин & Шкляр, 2002). By some authors stated by Issu-

rin (2009) abilities are maintained for a certain period of time (from 5 to 35 days) after the termination of exercise and that time is not the same for all motor abilities (Figure 1). This setting is very problematic, as some other studies (Hargreaves, 1995; Wilmore & Costill, 2004; and others, cited in Платонов, 2009) showed that after the termination of work, after 1-2 weeks, the activity of oxidative and glycolytic enzymes reduces; local muscular endurance reduces, and quickly gained abilities are quickly lost. Biological systems, previously highly adapted due to inactivity, are now subject to the process of deadaptation. Surely those abilities are not reduced at once (for example, on the

twentieth day), but it is a gradual and differentiated process (Bovk, 2007, 2009). Disruption on a level of one ability (increase or decrease) changes compliance and relationships of various motor abilities, especially those that are highly correlated. This can affect, not only positively, but negatively as well, other abilities and the level of technical and tactical skills.

13. Although block periodization predicts different approaches for relatively simpler and more complex sport disciplines according to the structure of competitive activities, extensive calendar of competitions during nearly a whole year makes the practical application more difficult. While the use of some type of "blocks" is to some extent possible in cyclic sport disciplines with longer preparation period, in more complex sport disciplines (e.g. sports games, martial arts disciplines) it is not possible.

## CONCLUSION

Every theory, including the theory of sports training, must be constantly reviewed in accordance with the dynamic changes in competition and the preparation of athletes. The emergence of the so-called block periodization temporarily shook the traditional theory of training in the segment of periodization. Criticism of classical periodization is not well founded methodologically and does not match the level of scientific debate about the problem (references to old bibliographic sources, the sources in favour of block periodization, concealing everything that contradicts block periodization, deliberate misinterpretations...) and from the standpoint of science may be rejected due to subjectivism. New periodization ideas are not based on scientific facts and their application in practice is not possible if one wants to achieve a great result at the right time in the most important competition, which is the basic idea of periodization according to classical theory. Thus, block periodization is rather a misconception than a breakthrough in sports training.

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