

## **Interview with Tudor Bompa**

<http://www.pponline.co.uk/encyc/spor...or-bompa-40858>

Tudor Bompa has been called the father of periodization (training planning) and I bet there are very few athletes in the world who don't owe their successes (even if they don't realise it) to the former Romanian's theories in some way or another.

Tudor Bompa

Bompa has had his detractors (maybe because he advised 'drugs cheat sprinter' Ben Johnson and his coach Charlie Francis in the Eighties), but I believe he is the genuine article. He did the research, proved the theory by coaching Olympic and world champions and should be hailed as one of the greatest practical sports scientists of all time. Having training advice provided by coaches such as Bompa on Peak Performance Premium is what makes our online site such an exciting and informative resource.

### **PPP: How did you get involved in sport?**

TB: Like almost every kid in Romania, I started to play football. Track and field also captivated me so much so that during my mid-teens I was very busy training and competing in both sports. I quickly realised that the athleticism I gained from track and field greatly helped my football. I was the fastest and the strongest in our junior football league and by the time I was 17 I was selected for the Romanian national under-18 side. And I was still training for track. I won a silver and two bronze medals in the under 18 national championships. These were in the sprints and the pentathlon, so I was busy! However, an unfortunate ankle injury terminated my football career.

Some of my best friends were rowers and due to my injury I found myself turning to this sport. Since I was genetically equipped for speed and power, I had to struggle to achieve a decent performance level in a sport where endurance is crucial. But somehow I managed and kept going to such an extent that I won a silver medal in the 'four' at the 1958 European Championships.

Professionally, I feel that I owe a great deal to my own sports involvement. I think that without the knowledge I gained from tens of thousand of hours of training and coaching I would never have reached my best as a professor, a sports training specialist and author.

### **Why and how did you get involved in sports science?**

I realised that I lacked a great deal of scientific training knowledge. Therefore, for several years I read everything I could put my hands on. And remember, this was in a Communist society where access to information was available to only a selected few. I was coaching rowing and track and field. I was having success with the javelin in particular. I was also invited to coach the national rowing team level.

From that point on I had access to everything I wanted, including the chance to research many of the training elements that have captivated me: for example, strength training as it applies to different sports and the development of endurance. This was in the 1960s, and those were the years that really shaped my professional training philosophy.

**You are widely acknowledged as one of the fathers (if not the father) of periodization. Do you accept this tag and what made you interested in this field?**

Your statement greatly honours me, but it is slightly exaggerated. Let me share with your readers the evolution of periodization.

From the early years of the ancient Olympics, athletes have followed a very simple but logical method of training. They train to compete; compete in pre-Olympic and Olympic Games and then rest and relax. This is periodization – the athlete follows training phases (now called 'preparatory, competitive and transition' phases).

A Russian professor, Leonid Matveyev, was the first to use the term periodization in terms of planning the phases of an athlete's training. He borrowed the term from history, where periodization describes the phases of human history – for example, antiquity, the Middle Ages, and so on.

Matveyev was the first author to really analyse statistically what the Soviet athletes used in training for the 1952 Olympic Games. His work validated the concept of periodization... that is, that the annual training plan should be divided into phases of training, with each phase having a specific training objective. And that these phases themselves should also be subdivided into even smaller training phases called 'macro-cycles' (of two to six weeks' duration) and 'micro-cycles' (a week of training).

**How did you get on with the Russians?**

It's funny, looking back on my time then, as the Russians wanted to steal everything that had been successful in any of the Eastern European countries. So much so that, in the West, it's often thought that the Russians discovered everything in training!

**What's the difference between the periodization methods that evolved in the Fifties and those of the present day?**

The difference between periodization in the 1950s and nowadays is that 1) we have created several variations of periodization and 2) in our planning and periodized training we apply sports science more effectively. With research and through the efforts of top coaches we constantly discover and produce better information that enriches the science of training.

**How did you and your colleagues determine if periodization worked?**

As I indicated, many elements of periodization have evolved as a result of a better understanding of sports science or through research – for example, at the Romanian Olympic training centre in Bucharest and Timisoara. It started when we tried to work out why our athletes failed to reach peak performances at the most important competitions!

**We are particularly interested in your work on the development of sport-specific strength – where did this interest develop?**

In 1963, Mihaela Penes, a junior javelin thrower from Romania, was left without a coach when she moved to another city. I was approached to help her. I applied what is now known as the 'periodization of strength' to her training. At that time nobody regarded

maximum strength ('MxS') as a key determinant of power.

The logic of the time – and one that is still held by many coaches today – was that, since power is the dominant ability in javelin, for example, it (power) has to be trained all the time. However, my logic was different. Since power is a function of MxS, you have to develop MxS first and then convert it into power, prior to participating in major competitions. Many coaches ridiculed me for training MxS. They said that 'MxS will make you slow'!

However, the knowledge we now have of exercise physiology justifies what I believed back then and still believe in: that is, the scope of MxS to recruit more fast-twitch (speed- and power-producing) muscle fibres. This contrasts with power training, which increases the discharge (firing) rate of the muscle fibres.

During my first winter with Mihaela I tested my theory and realised that levels of power were much higher following the periodization of strength. This was in contrast to other athletes who followed the standard training methodology of year-round power training. This was further vindicated by practice, as Mihaela achieved outstanding testing results and a national senior record.

### **Mihaela won the 1964 javelin Olympic gold...**

Yes... since Mihaela was an athlete unknown outside of Romania, I wanted to surprise all her competitors at the Tokyo Olympics. To achieve this, I added another different ingredient into the training plan. This was, that her first attempt had to be the best of the day when throwing and strength/power training!

We did this in training for almost two years. In Tokyo, none of the other throwers were looking out for Mihaela, and with her first throw she threw an Olympic record. Shock! All the other throwers had long faces. And they still had them by the end of the competition, as she climbed the podium to collect her gold medal.

### **Why the emphasis on weight training for power – if there are still those that need convincing?**

The best way to answer this question is to show the relationship between strength and other motor abilities.

During an athletic action such as sprinting, the athlete recruits a certain number of fast-twitch muscle fibres – the higher the number, the greater the ability to display both strength and power. Let's assume that athlete 'A' can recruit 60% of all their fast-twitch fibres and athlete B only 55%. Who will display the higher level of power?

But it should be remembered that, according to the periodization of strength, maximum levels of power can only be reached after the MxS phase. The training time to achieve this is as follows:

1. Anatomical adaptation: three to six weeks
2. MxS: six weeks
3. Conversion to power: five to six weeks

### **You said there are different periodization models...**

Yes – the double(two peaks), and triple (three peaks) periodization models resulted from detailed studies.

In the 1960s, most athletes used a mono-cycle, or one-peak annual plan – this used to be a typical plan in track and field. At first, I also used the one-peak annual plan in rowing, too. But it soon became apparent that the best performance was achieved in early summer (June) and could not be replicated in the late summer (August) – during the World Rowing Championships, for example – with these methods.

This failure made me critically analyse what I was doing with my athletes. More testing and research followed and I finally realised that for sports where a coach has to plan at least two peaks per season, he/she has to use a plan which I called, at that time, 'double-peak periodization'.

An example: between the first peak in June and the second peak in August, I had to put in a mini- preparatory phase (involving mostly MxS and power training). A very short transition period was also included in June, at the end of the first peak – this lasted for two weeks.

The result, the following year, was two world champions in rowing.

This variation of periodization evolved into what I now call a 'bi-cycle' or 'double-peak' annual plan.

### **You've had your detractors...**

Yes, despite the success of my methods I have my detractors, especially in the USA. Several sports scientists have claimed that I didn't really create all the elements of periodization I have described in my books. They claim that the Russians developed them! And that I 'just' brought them to the West!

My reaction: show me a Russian book or article written anywhere between 1960 and 1980 that discusses periodization of strength/power! The periodization of endurance! The periodization of speed and agility! And so on.

In fact, two books of mine have been translated into... Russian!

### **Has periodization theory changed significantly?**

There have been a number of **articles** recently, touting 'the end of periodization'. These, to me, just supplant linear periodization with undulating periodization (UP).

I read such an article and was very disappointed to realise that the author confused loading patterns with the periodization of training! Anyway, for those who claim the end of periodization, I have two questions/comments to make:

a) do they really understand periodization? I regret to say this, but the more a person questions periodization, the more I question his/her understanding of sports science and training in general. Let me simply say that for as long as you want to be an effective coach, you have to be well-organised and conduct a well-organised and planned periodized training methodology.

And

b) if periodized training is ineffective, what is left to us? We either have periodization or chaos! Choose what you want.

## **And what is undulating periodization?**

So-called undulating periodization is nothing but changes to the patterns and magnitude of training loads during a week of training. Olympic weight-lifting athletes have used variations of loading patterns for generations. Since the Sixties, the variation of loading magnitude per week has also been used in most sports, matching strength- training intensities to the intensities planned for specific training days (days with low-, medium- or high-intensity training, for instance). This is better expressed as alternating training loads as a percentage of 1RM.

## **Is there truly a 'key' weight lift for a power athlete, such as a sprinter? Recently I read an article where the dead-lift was identified by one coach...**

For sprinting and any sports that desire quickness, maximum speed and agility, the triple extensor muscles – gastrocnemius and soleus, quadriceps, and gluteus maximus – are determinant for ultimate performance. When sprinting, the propulsion phase (the push-off against the ground) is crucial. Weak propulsion potential will increase the duration of the contact phase, making the athlete slower. The stronger the triple extensor muscles, the shorter the duration of the contact phase. A short duration contact phase means improved speed.

Now, the dead-lift does not strengthen the calf muscles! Period! It strengthens the hamstrings – which are essential in terms of power and strength in terms of shortening the recovery phase of the running step (bringing the heels up toward the buttocks).

I recommend the following exercises for sprinters (and any athletes) who want to become faster and more agile (in this order):

- a) calf (heel) raise
- b) squats
- c) a suitable hamstring exercise.

## **What makes a successful coach?**

A few simple comments... have an inquisitive mind! Experience as many methods as possible to realise what works best. Beware of salesmen! Always challenge instructors promoting 'novelties'! Read, read! and read again! You'll find out what is good and what is...trash!

Tudor Bompa has written 15 books and these have been translated into 18 languages. To date, these have sold 650,000 copies worldwide. As a coach in Romania he coached numerous top athletes, including the 1964 Olympic javelin champion Mihaela Penes.

He is the only coach who has produced Olympic and world champions in two different sports – track and field, and rowing.

To find out more, go to [www.tudorbompa.com](http://www.tudorbompa.com)