

# PERSONALITY CHARACTERISTICS AND PERFORMANCE MOTIVATION OF COMPETITORS – JUNIORS IN WHITE WATER SLALOM

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## Abstract

The paper deals with personality characteristics and performance motivation profile in junior competitors in white water slalom. Performance in this discipline puts high demands on psyche of young competitor. The knowledge of personality and performance motivation of a sportsman, respecting their exceptionality, their impact on performance, motor learning and relationships should be an obvious condition of a training process.

It is a case study of an explorative character. The observed sample was a specific group of 16 junior top competitors in white water slalom.

We have used two standardized questionnaires: Eysenck Personality Inventory (EPI) and performance motivation questionnaire (DMV) by Pardel, Maršalová, Hrabovská (1984). On the basis of the EPI we have found that today the most suitable type in the junior category (up to 23 years) for performing the top performance is the sanguine type with the low neurotic score, with the average performance motivation values and braking anxiety and high values on the positive anxiety scale.

*Keywords: white water slalom, performance motivation, personality.*

## Introduction

The white water slalom was first included in the Olympic Games programme in 1972. It can be characterized as a discipline realized in white water. It is done in the natural environment and it is changing not only as an outer framework of the movement activity but mainly from conditions viewpoints, which decide about the choice of adequate motor responses (Kratochvíl & Bílý, 1997). The performance in white water slalom depends on optimal balancing of functional state of the organism, movement structure and it puts high demands mainly on competitor's psyche.

Sensory abilities are very important from psychological demands. Performance is mainly influenced by the fast motor reactions and prompt situation solving. The specific courage is obviously important with the higher willing to risk and high resistance against emotional stress (Bílý, 2002).

According to Cattell (1965), performance in the widest meaning of the word depends on central (mental) abilities, local abilities (sense organs and motor behaviour), instrumental structures (gained skills) and non-intellectual factors (motivation, emotions and fatigue). Hošek (2002) states that these factors are not homogenous, some can be developed, some are relatively stable. Some can be characterized by a huge dynamics, there are relationships with cortical brain areas and sub-cortical centres.

In the narrower psychological point of view, Hošek (2002) considers performance to be dependent on abilities (sensory, motor and intellectual) and motivation. In sport the importance of abilities is generally approved, however, motivation is often considered as almost automatic, mainly in a strong individual, which does not have to correspond with the reality.

Sensory abilities are considered as very important out of the mental factors in white water slalom, e.g. fast motor reactions, motor situation solving, specific courage with the higher willing to risk, high resistance to emotional stress and maximal concentration ability for a short time period with a significant feeling to judge distances.

White water slalom is a discipline which requires with its character a continual honing when integrating the outer and inner imagination. The typical autodidactic strategy is used during the sport training (MacIntyre, 1999). Valoušek (1974) found out that the better competitors reached in all tests a higher level of abilities in fast decision making, directing the movement activity and adapting to new stimuli. They were also better in judging short time intervals. The positive relationship between maturity and kinetics sensitivity was proved in a way that higher physical age in white water slalom and downhill has positive relationship to sport championships.

As this research was realized many years ago, we have to re-evaluate the structure of identified competences, which are decisive for top performance. This need came out following the change in material and technical equipment, which is used today in white water slalom, and the change of rules.

#### *Mental and personal parameters of top competitors in white water slalom*

Personality in white water slalom studied many authors. Hlavsa & Hošek (1968) researched 31 top competitors by the following methods: Cattell 16PF, Eysenck Personality Inventory (EPI) and Mittenecker – Toman Personality Inventory. The comprehensive results of this research, extended by other questions by Taylor (MAS) and IQ brings the study by Vaňek, Hošek & Svoboda (1974). Results conclude that white water canoeists are above average intelligent, self-conscious, anxious, and neuropsychically stable. According to Havlík (1993) the better performers are older sportsmen (above 23 years). They are more introvert, earnest, aggressive, unconventional and with better stamina.

For her research, Křížková (1994) used the performance motivation questionnaire by Pardel, Maršálová & Hrabovská (1984) and the questionnaire measuring psychotism (DOPEN). The results conclude that more predictors can be found in the area of personality dynamics, mainly in the characteristics which corresponds with the actual man behaviour in changing situations. Those are mainly motivationally volitional predictors and then the area of psychic persistence. Furthermore, she tried to determine the most important personality parameters of top competitors, which would enable the prediction of sport success. She found that top white water canoeists have significantly smaller braking anxiety, bigger motivation to performance and higher neurotic tendencies than less successful canoeists.

Bílý and Süß (2007) measured personality characteristics and performance motivation in white water male and female canoeists on the top level (12 men and 3 women). They used two standardized questionnaires: Eysenck Personality Inventory (EPI) and the performance motivation questionnaire (DMV) by Pardel, Maršálová & Hrabovská (1984). The results showed that in white water slalom there are mainly competitors with the low score of neurotism. Regarding the successfulness of our competitors in the world competitions and the realized study, the most suitable personality type seems to be “phlegmatic”. Furthermore, it was found that the top competitors reach lower values on the scale of performance motivation,

which corresponds to the previous researches, and also significantly lower values of braking anxiety.

## **1 Aim**

The aim of the paper is to research personality characteristics and performance motivation in junior competitors in white water slalom.

## **2 Sample and method**

It is a case study of an explorative character. The results describe the specific group of top junior white water canoeists.

### **2.1 Observed sample**

The observed sample consisted of members of junior national team in white water slalom in 2008, 4 women and 12 men (average age =  $16,81 \pm 1,07$ ). In 2010 we observed 8 men and 1 woman, (average age =  $20,22 \pm 0,78$ ) those were competitors from sample 1, which reached the medal positions in category to 23 years, or reached the senior national team.

### **2.2 Used methods**

We have used two standardized questionnaires:

Eysenck Personality Inventory (EPI)

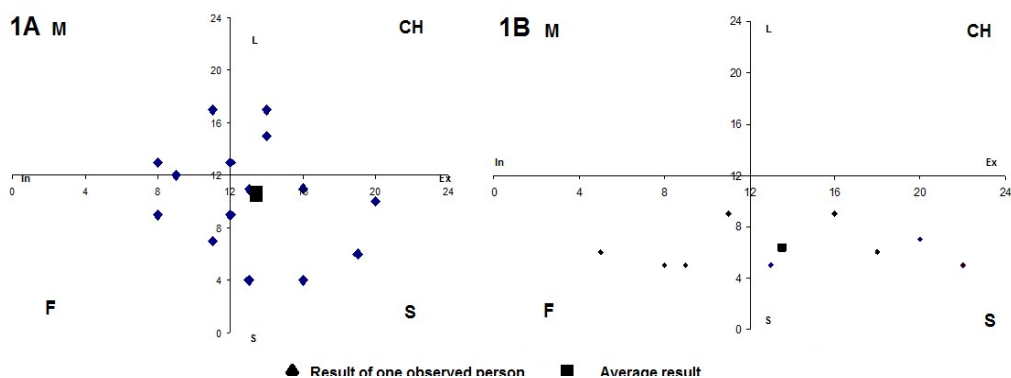
The questionnaire consists of 57 questions asking on behaviour, acting and own feelings in different situations. Each question can be only answered YES or NO. By counting marked answers in three out of five dimensions we have gained the final score – N (neurotism), E (extroversion), and L (so called “false-score”, which has only insignificant influence on the final result). Values E and N were put into the graph on axes x and y and intersection of both vales was marked in the corresponding quadrant.

Performance motivation questionnaire (DMV) by Pardel, Maršálová and Hrabovská (1984), which was used in the study by Křížková (1994), is a modification of the Hermens performance motivation test, which observes the personality development with regard to learning and working efficiency. The questionnaire consists of 52 questions creating three scales: performance motivation scale (MV) consisting of 24 items, anxiety braking performance scale (AB) with 17 items and anxiety supporting performance scale (AP) with 10 items.

## **3 Results**

### **3.1 Dimensions of Eysenck Personality Inventory**

Figure 1A shows results of all members of the junior national team in 2007. Two competitors placed among the phlegmatic type, five competitors among the sanguineous type, two were the choleric type and two the melancholic type, one was on the border between the phlegmatic and sanguineous type, one on the border between the phlegmatic and melancholic type and one on the border between the choleric and melancholic type. Figure 1B shows results of all members of the team in 2010



Key: M – melancholic, Ch – choleric, S – sanguineous, F – phlegmatic, In – introvert, Ex – extrovert, L –unstable, S – stable SD –standard deviation

Fig. 1 Results of the EPI measurement in 2007 and 2010

### 3.2 Performance motivation

Tab. 1 Results of performance motivation measurement in junior competitors of the national team in white water slalom

DMV									
Category	MV			AB			AP		
	r.s.	T	S	r.s.	T	S	r.s.	T	S
Mean 1	90,06	46,81	5,06	50,75	44,56	4,69	24,63	46,94	4,81
SD 1	14,36	10,52	2,02	8,99	7,59	1,54	7,04	9,07	2,01
Mean 2	90,11	46,56	5,11	51,89	45,44	4,89	23,22	46,78	4,89
SD 2	15,15	11,17	2,13	9,15	7,88	1,59	6,18	9,09	2,02

Key: r.s. – rough score, T – T points, S – Moans, DMV – Performance motivation questionnaire, MV – performance motive scale, AB – anxiety braking performance scale, AP – anxiety supporting performance scale, Mean 1 (SD1) is the average (standard deviation) of all competitors measured in 2007, Mean 2 (SD2) is the average (standard deviation) of selected competitors measured in 2007

Tab. 2 Results of selected competitors (sample 2) in white water slalom 2010

DMV									
Category	MV			AB			AP		
	r.s.	T	S	r.s.	T	S	r.s.	T	S
Mean	103	56	7	61	53	6	36	60	8
SD	14,89	9,72	1,83	13,20	10,97	2,21	9,14	9,95	2,08

## 4 Discussion

We have used the same two questionnaire methods for our research as when measuring the senior national team in white water slalom (Bílý and Süß, 2007). On contrary to the older measurements (Valoušek, 1974; Křížková, 1994) we have not used the Raven intelligence test. It was proved in the previous years that the Raven intelligence test measured reliably

only under average and average IQ values. We are convinced that national team competitors in white water slalom belong among the high intelligent part of the population.

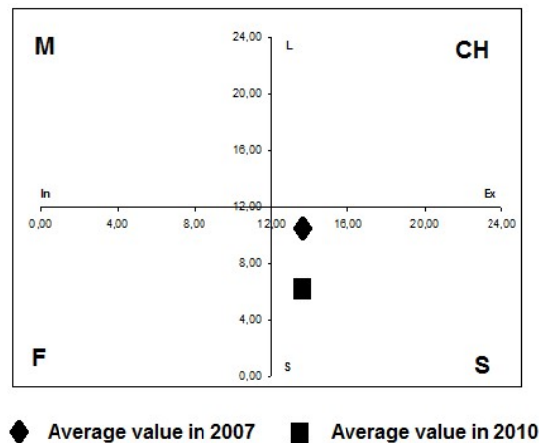


Fig. 2 Comparison of the average values of the selected competitors (sample 2) in 2007-2010

#### Personality characteristics

We can state that there are significantly more competitors with the low score of neurosis (64%). Figure 2 shows the transfer in the repeated measurements.

On contrary to senior national team (Bílý and Süß, 2007) is the average value of extroversion shifted more to the right on the scale ( $x=13,1$ ). That was proved even by repeated measuring in the selected group of competitors in 2010.

#### Performance motivation

It showed that junior competitors in white water slalom reach relatively low values (in the weighted score) on the performance motivation score, excluding exceptions, which corresponds to the results from the research done on senior national team (Bílý and Süß, 2007) and to the findings by Hošek (2002), who states that in the rough score the best sportsmen reach rather average values. Furthermore, in the weighted score they reach the average values in the braking anxiety and relatively low values of positive anxiety.

Tab. 3 Results of performance motivation in juniors

		DMV								
		MV			AB			AP		
Category		r.s.	T	S	r.s.	T	S	r.s.	T	S
women	mean	86	45,25	4,25	49,25	43,5	4,5	26,5	45,75	4,25
	SD	12,57	10,34	1,708	10,87	8,888	1,915	10,34	11,7	2,5
men	mean	91,42	47,33	5,333	51,25	44,92	4,75	24	47,33	5
	SD	15,17	10,98	2,103	8,761	7,513	1,485	6,06	8,616	1,907
together	mean	90,06	46,81	5,06	50,75	44,56	4,69	24,63	46,94	4,81
	SD	14,36	10,52	2,02	8,99	7,59	1,54	7,04	9,07	2,01

Table 4 shows for comparison values gained by measuring 50 active sportsmen of the Faculty of Physical Education and Sport (Pešek, 2005).

Tab. 4 Results in the performance motivation questionnaire (adjusted by Pešek, 2005)

	MV			AB			AP		
	Rough score	T	S	Rough score	T	S	Rough score	T	S
men	91,61	50	6	78,74	43	4,5	34,05	57	7
women	89,54	47	5	57,76	50	6	29,63	54	6

To compare there is adjusted Table 5 from the study of the senior national team of white water canoeists (Bílý and Süss, 2007).

Tab. 5 Results of the senior national team in white water slalom (adjusted by Bílý and Süss, 2007)

Category		DMV								
		MV			AB			AP		
		r.s.	T	S	r.s.	T	S	r.s.	T	S
Women	mean	87,3	45,0	4,7	52,0	45,7	5,0	32,7	55,7	7,0
	SD	16,9	10,1	2,1	5,6	4,5	1,0	5,1	5,1	1,0
Men	mean	85,8	44,0	4,5	41,3	36,9	3,1	36,4	59,9	7,5
	SD	10,4	7,2	1,4	5,7	5,1	1,2	8,5	8,9	1,8
Together	mean	86	44,2	4,5	43,4	38,7	3,5	35,7	59,1	7,4
	SD	11	7,5	1,5	7,1	6	1,4	8	8,3	1,7

In 2008 10 competitors out of 16 observed junior competitors reached in the future medal positions in the European Championship and World Championship of juniors, 9 competitors belong today to the best Czech senior canoeists.

Table 6 shows comparison of DMV results from the years 2007 and 2010 of selected competitors, in which it is possible to observe significant increase in positive anxiety values (in the weighted score).

Tab. 6 Comparison of results of successful competitors from the measurements in 2007 and 2010

Category		DMV								
		MV			AB			AP		
		r.s.	T	S	r.s.	T	S	r.s.	T	S
2007	Mean 1	90,11	46,56	5,11	51,89	45,44	4,89	23,22	46,78	4,89
	SD 1	15,15	11,17	2,13	9,15	7,88	1,59	6,18	9,09	2,02
2010	Mean 2	94,33	49,22	5,56	48,89	43,56	4,33	33,78	56,78	7,11
	SD 2	14,89	9,72	1,83	13,20	10,97	2,21	9,14	9,95	2,08

## Conclusion

Knowledge of personality and performance motivation of a sportsman, respecting their features, influence on motor learning and performance, should be an obvious condition in the training process.

It has appeared that the most suitable personality type for reaching the top performance in junior categories (up to 23) is the sanguineous type with the low score of neurosis, with the average values of performance motivation and braking anxiety and a high value on the positive anxiety scale.

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## **TEMPERAMENTOVÉ VLASTNOSTI A VÝKONOVÁ MOTIVACE ZÁVODNÍKŮ – JUNIORŮ VE VODNÍM SLALOMU**

V příspěvku se zabýváme temperamentovými vlastnostmi a profilem výkonové motivace u juniorských závodníků ve vodním slalomu. Výkon v této disciplíně klade vysoké nároky na psychiku mladého závodníka. Znalost temperamentu a výkonové motivace sportovce, respektování jejich zvláštností, vlivu na výkonnost, motorické učení a vztahy by měla být samozřejmou podmínkou tréninkového procesu. Jedná se o případovou studii explorativního charakteru. Sledovaným souborem byla specifická skupina 16 juniorských závodníků vrcholové úrovně ve vodním slalomu. K vyšetření byly použity dva standardizované dotazníky: Eysenckův dotazník temperamentu EPI a dotazník motivace výkonu (DMV) autorů Pardela, Maršálové Hrabovské (1984). Na základě Eysenckova dotazníku temperamentu bylo zjištěno, že v současné době pro podání vrcholného výkonu v juniorských, resp. kategoriích závodníků do 23 let, je nejvhodnějším typem sangvinik s nízkým skóre neurotizismu, s průměrnými hodnotami motivace výkonu i brzdící anxiозity a vysokou hodnotou ve škále anxiозity pozitivní.

## **TEMPERAMENTEIGENSCHAFTEN UND LEISTUNGSMOTIVIERUNG DER JUNIORENWETTKÄMPFER IM WILDWASSERSLALOM**

In diesem Beitrag befassen wir uns mit den Temperamenteigenschaften und dem Profil der Leistungsmotivation bei Nachwuchswettkämpfern im Kanuslalom. Die Leistung in dieser Disziplin stellt hohe Ansprüche an die Psyche eines jungen Sportlers. Kenntnisse des Temperaments und der Leistungsmotivation des Sportlers, die Berücksichtigung von dessen Besonderheiten und der Einflüsse auf seine Leistungsfähigkeit, auf sein motorisches Lernen und seine Beziehungen sollten selbstverständliche Bedingungen des Trainingsprozesses sein. Es handelt sich um eine Fallstudie mit explorativem Charakter. Es wurde eine Versuchsgruppe von 16 Top-Nachwuchswettkämpfern im Kanuslalom untersucht. Für die Untersuchung wurden zwei standardisierte Fragebogen verwendet: der Eysenck – Temperament – Fragebogen EPI und der Leistungsmotivations – Fragebogen (DMV) (Verfasser: Pardel, Maršálová, Hrabovská, 1984). Der Eysenck – Fragebogen ergab, dass der geeignetste Typ für Spitzenleistungen in den Juniorenkategorien bzw. in den Kategorien von Sportlern unter 23 Jahren der Sanguiniker, mit einem niedrigen Neurotizismus-Score, mit Leistungsmotivations-Durchschnittswerten, bremsender Anxiозität und mit hohem Wert auf der Skala der positiven Anxiозität, ist.

## **CECHY OSOBOWOŚCIOWE ORAZ MOTYWACJA DO OSIĄGNIĘCIA WYNIKÓW ZAWODNIKÓW – JUNIORÓW W SLALOMIE WODNYM**

Artykuł poświęcony jest cechom osobowościowym i profilowi motywacji do osiągnięcia wyników zawodników - juniorów uprawiających slalom wodny. Ta dyscyplina sportu stanowi duże obciążenie dla psychiki młodego zawodnika. Znajomość osobowości i motywacji do osiągania wyników przez sportowców, poszanowanie ich cech szczególnych, wpływ na wyniki, naukę motoryki i inne zależności powinny być oczywistym warunkiem procesu treningowego. W artykule przedstawiamy studium przypadku o charakterze eksploratywnym. Badania dotyczyły specyficznej grupy 16 młodych zawodników uprawiających wyczynowo slalom wodny. Do badań wykorzystano dwa zestandaryzowane kwestionariusze: kwestionariusz osobowości Eysencka EPI oraz kwestionariusz motywacji do wykonania (DMV) Pardela, Maršálovej Hrabovskiej (1984). Na podstawie kwestionariusza osobowości Eysencka stwierdzono, że obecnie dla osiągnięcia najlepszego wyniku w kategoriach juniorskich, wzgl. zawodników do lat 23, najkorzystniejszym typem jest sangwinik o niskim poziomie neurotyzmu, z przeciętnymi wartościami motywacji do osiągania wyników i pohamowanymi stanami lękowymi oraz o wysokim poziomie w skali stanów pozytywnych.