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The place of sensorial submodalities in ideomotor representations of neurolinguistic programming

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Abstract

This study is part of a larger work, in which we want to examine the possible increase of athletic performance by applying mental training techniques, particularly by neuro-linguistic programming. In neurolinguistic programming we have studied the relationships between sensory sub modalities by applying the following tests: Bandler and Garner and Jacobson. Methods: We had two testing: Test1 and Test 2. Statistical indicators were calculated, elements of descriptive statistics, the data are presented using indicators of centrality, location and distribution. Statistical analysis: Wilcoxon nonparametric test was used for sample pairs (data uneven distribution / ranking. Significance threshold taken in account was $\alpha = 0.05$ (5%), $\alpha = 0.01$ (1%) or $\alpha = 0.001$. Findings and Results: To detect the correlation between two variables we used the Spearman rank correlation coefficient (ρ). Correlation coefficients analysis was performed using Colton 's rule. We have found no statistically significant differences were observed in Bandler & Garner and Jacobson , the test sample pairs (T1-T2), but there are very many and very good correlations in both studied tests between the values of the items. we want to continue with this study because the time difference between the two testing was short and we want to extend this study to a minimum of 3 months. All sensory sub modalities are particularly important in achieving ideomotor representations underlying the importance of mental training.
Keywords: ideomotor representation, neurolinguistic sensations, training, sensorial submodalities.

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1. Introduction

This study is part of a larger work, in which we want to examine the possible increase of athletic performance by applying mental training techniques, particularly by neuro-linguistic programming. Experimental group consisted of master students from Physical Education and Sport Faculty, Sportive Performance and Training specialty. For the first testing they were asked to think of three motric skills in their special field and to complete the Bandler & Garner (2012) and Jacobson (2011) S. forms. The students had to complete in forms all the sensations they felt during ideomotor representations, relying on proprioception, which is defined as the ability to recognize and feel own body position in space, focusing on the muscles (Mauti, 2012).

In the neuro-linguistic courses, Jacobson Edmund relaxation techniques were thought, with an activation phase, after that the ideomotor representations were realized based on key words, and triggering motric actions. In sport this technique is used to reduce arterial blood tension before competition and favors general physical and psychic relaxation (Brugnoli, 2005). After one month we have done a second testing, in order to emphasize the correlations between sensorial submodalities, ending the study with a profile for each student, self-perception profile – phrase defined by Biddle, Fox and Boutcher (2000).

2. Purpose of study

In neuro-linguistic programming we have studied the relation between sensorial submodalities by applying the following tests: Bandler and Garner (2012) and Jacobson (2011). With this experiment we want to show that neuro-linguistic programming trough sensorial submodalities lead to an increase ideomotor representations. These ideomotor representations the more complete and complex they are the more increases the motric stock. In this way the master students will be more prepared and at their own time could give more information to future athletes, to forme motric skills and to increase sportive performance. The sport is conceived in such a agonistic way that it offers a pattern by which we can understand the multitude of significations and values that characterize it (Isidori, 2012).

Before establishing the objectives of this study we must understand an important element, which derives from neuro-linguistic programming- that is metamodel. This is a linguistic model, which refers to motic skill, specific for one sport. Various models that everyone creates are different and based on our experience and perceptions of reality (Fanelli, 2010). The subjectivity of reality depends on structural cause like: social, neurological, individual.

3. Methods and material

Two testing were done, by applying Bandler & Garner (2012) and Jacobson S. (2011) tests. Statistical indicators were calculated, elements of descriptive statistics, the data are presented using indicators of centrality, location and distribution. Statistical analysis: Wilcoxon nonparametric test was used for sample pairs (data uneven distribution/ranking. The threshold of significance taken in account was $\alpha = 0.05$ (5%), $\alpha = 0.01$ (1%) or $\alpha = 0.001$, following:

- $0.01 < p < 0.05$ - statistically significant difference; • $0.001 < p < 0.01$ - statistically very significant difference;
- $p < 0.001$ - statistically highly significant difference ; • $p < 0.05$ - statistically insignificant difference .

To detect the correlation between two quantitative continue variables we used the Spearman rank correlation coefficient (ρ). Analysis of correlation coefficients was performed using Colton's rule. Polynomial regression was the method used to obtain the mathematical equation for the addiction of one continuous variable to another variable. Statistical interpretation was performed with Excel application (Microsoft Office 2007) and StatsDirect v.2.7.2 program.

Graphical representation of the results was made with the application Excel (Microsoft Office 2007).

4. Findings and Results

To detect the correlation between two variables we used the Spearman rank correlation coefficient (ρ). Correlation coefficients analysis was performed using Colton's rule. No statistically significant differences were observed (p > 0.05) in Bandler & Garner (2012) and Jacobson (2011) test for sample pairs (T1-T2), but there are many and very good correlations in both studied tests between the values of the items, see table no 1.

Table no I. Comparative analysis for the studied values and statistical signification (pair sample)

Test Item	Moment	Media	ES	Median	DS	Min.	Max.	Statistical signification (p)
Test Bandler & Garner	**T1**	**29,50**	**3,7966**	**27,5**	**17,8078**	**0**	**65**	0,7854
	T2	**31,23**	**5,2541**	**40,5**	**24,6440**	**0**	**68**	
Visual sensations	**T1**	12,59	1,5397	12,5	7,2221	0	25	0,7854
	T2	13,14	2,0747	17,5	9,7311	0	25	
Auditory sensations	**T1**	9,55	1,3544	8	6,3526	0	20	0,8987
	T2	9,23	1,6540	10	7,7578	0	20	
Kinesthetic sensations	**T1**	7,36	1,4867	6	6,9730	0	21	0,3535
	T2	8,86	1,7072	9,5	8,0077	0	23	
Test Jacobson	**T1**	**54,91**	**8,0531**	**59,5**	**37,7724**	**0**	**137**	0,187
	T2	**72,18**	**12,5202**	**77,0**	**58,7251**	**0**	**177**	
Visual sensations	**T1**	19,77	2,5507	20	11,9640	0	43	0,4628
	T2	22,95	3,8716	27	18,1593	0	54	
Auditory sensations	**T1**	15,64	2,0895	17	9,8006	0	32	0,2877
	T2	20,95	3,6801	26,5	17,2612	0	51	
Kinesthetic sensations	**T1**	14,55	2,6966	13,5	12,6481	0	42	0,1327
	T2	21,50	4,1125	23	19,2892	0	61	
Olfactory/sensorial sensations	**T1**	4,95	1,2475	2	5,8511	0	20	0,2744
	T2	6,77	1,5831	3,5	7,4254	0	18	

Analysing the items from Bandler & Garner (2012) test (visual, auditory, kinesthetic sensations) for pair samples between the two moments we found no statistical significant differences. (p > 0,05). For Jacobson test (visual, auditory, kinesthetic, olfactory/sensorial sensations) for pair samples between the two moments we found no statistical significant differences, (p > 0,05), see figure no.1

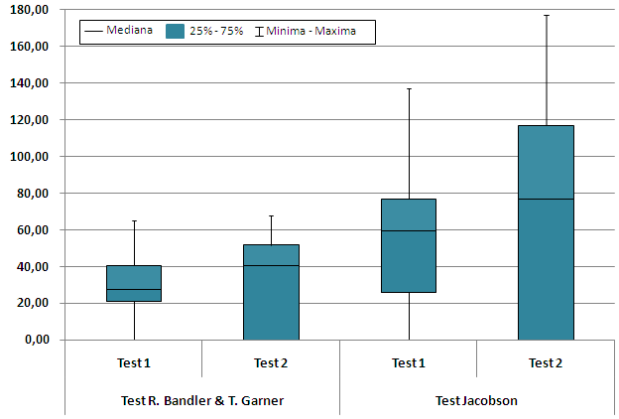


Fig. no.1. The values for T1 and T2 moments, for the studied tests

Ready and Burton (2010) says that to see, hear, feel will make communication more efficient. Each and every one of us has a special communication channel to convince (Garratt, 2011) that he understood when he is describing one movement. In T1 moment for the Bandler & Garner (2012) test, statistical analysis for the studied items showed:

- a very good correlation and in the same sense between SA – SK,
- a good correlation and in the same sense between SV – SA and SV – SK .

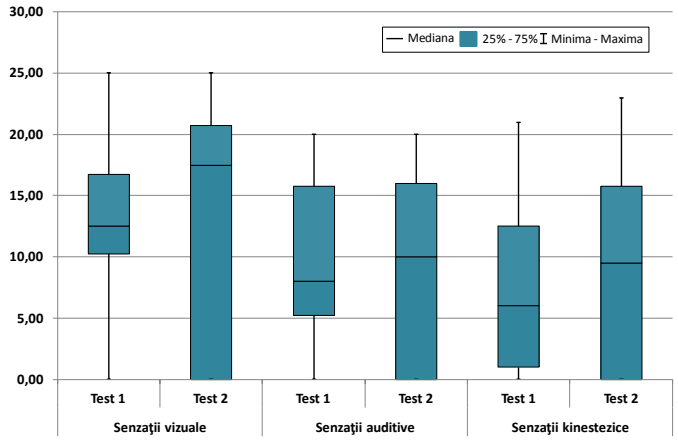


Fig. no 2.The values in T1 and T2 moments, for Bandler & Garner (2012) test

In Jacobson test, statistical analysis for the studied items showed:

- a very good correlation and in the same sense between SV – SA, SV – SK, SV – SOG, SA – SK and SK – SOG,
- a good correlation and in the same sense between SA - SOG.

In T2 moment for Bandler & Garner (2012) test**,** statistical analysis for the studied items showed:

- a very good correlation and in the same sense between SA – SK, SV – SA and SV – SK , (SV – visual sensations, SA – auditory sensations, SK – kinesthetic sensations , SOG – olfactory/sensorial).

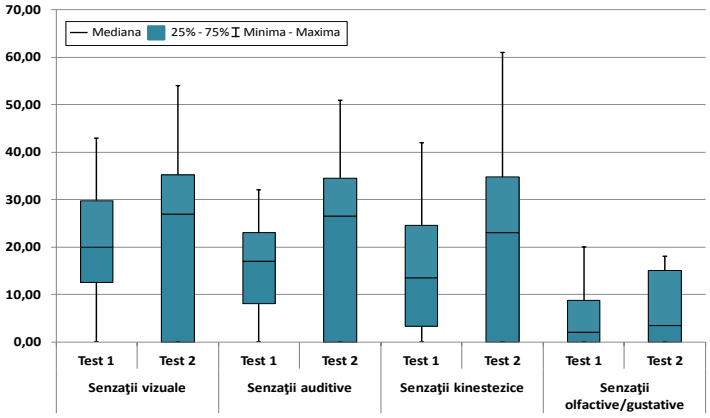


Fig. no3. The testing values in T1 and T2 moments, for Jacobson test

In T 2 moment for Jacobson test, statistical analysis for the studied items showed:

- a very good correlation and in the same sense between SV – SA, SV – SK, SV – SOG, SA – SK and SK – SOG,

- a good correlation and in the same sense between SA - SOG.

Table no 2. Statistical correlation analysis between the studied items in both test, for the studied moments

Test	Correlations between	T_1			T_2		
		ρ	Colton	p	ρ	Colton	p
Bandler & Garner	SV – SA	0,5078	***	0,0168	0,9103	****	< 0,0001
	SV – SK	0,5060	***	0,0174	0,9453	****	< 0,0001
	SA – SK	0,8685	****	< 0,0001	0,9249	****	< 0,0001
Jacobson	SV – SA	0,8568	****	< 0,0001	0,8699	****	< 0,0001
	SV – SK	0,8452	****	< 0,0001	0,8909	****	< 0,0001
	SV – SOG	0,8551	****	< 0,0001	0,7847	****	< 0,0001
	SA – SK	0,8659	****	< 0,0001	0,8592	****	< 0,0001
	SA – SOG	0,7334	***	0,0002	0,6713	***	0,0008
	SK – SOG	0,8346	****	< 0,0001	0,8377	****	< 0,0001

Legend: SV – visual sensations, SA – auditory sensations, SK – kinesthetic sensations, SOG – olfactory/sensory sensations

5. Conclusions and Recommendations

We want to continue with this study because the time difference between the two testing was short and we want to extend this study to a minimum of 3 months. All sensory sub modalities are particularly important in achieving ideomotor representations underlying the importance of mental training.

If the ideomotor representations are accompanied by many sensorial sub modalities, the motric skills are richer and the motric skills specific to various sports are more complex. When we normally ask our students to describe one movement, they use a serial of verbs with no importance to us, and they represent reality by a reduced linguistic structure. We call this a superficial structure and is the representation for complete profound structure (Fanelli, 2010), which in our case is the motric skill. Some theoretical elements and explanations of the neuro-linguistic programming should be abandoned in the near future, as research evidence develops. (Carey, Churches, Htchinson, Jones & Tosey, 2009).

Very good correlations and in the same sense between SV – SA, SV – SK, SV – SOG, SA – SK and SK – SOG show that the motric skill (profound structure) will be the more complete, as it is accompanied by its description and sensations.

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