

Resumen: El constructo PNS (Necesidad Personal de Estructurar) está basado en la asunción de que la habilidad para reducir la incertidumbre de una situación está relacionada significativamente con una mayor habilidad para resolver y afrontar situaciones estresantes. En nuestra investigación se valoró existencia de diferencias significativas en las estrategias de afrontamiento y en las dimensiones del estilo cognitivo (heurístico vs. orientación algorítmica) en una muestra formada por 524 adolescentes eslovacos de entre 14-18 años (280 hombres y 244 mujeres). Los resultados confirmaron que los estudiantes con una gran necesidad de estructurar prefirieron estrategias de afrontamiento más eficaces (la familia - la comunicación social, baja evitación). Los sujetos con altos niveles de orientación heurística mostraron una menor necesidad de estructurar.

Palabras Clave: Necesidad Personal de Estructurar, Afrontamiento, Hábitos de sueño, Estilo cognitivo

Abstract: The construct (PNS - Personal Need for Structure) is theoretically based on the assumption that the ability to reduce the uncertainty of a situation is connected significantly to better ability to solve new or cope with stressful situations. In our research, the assumption of possible significant differences in coping strategies and the dimensions of the HxA cognitive style (heuristic vs. algorithmic orientation) was verified on a sample of 524 Slovak adolescents aged 14-18 yrs. (boys n=280, girls n=244). The results confirmed unequivocally that students with a great need for structure preferred significantly more effective coping strategies (family - social communication, low negative avoidance). High heuristic orientation is connected with lower need (wish) for structure, in other words, high need for structure with algorithmic orientation.

Palabras Clave: Personal need for structure, Coping, Sleeping habits, Cognitive style

Title: *Necesidad personal de estructurar y procesos de afrontamiento*

The construct of the personal need for structure is theoretically based on the presumption that the ability to reduce the

uncertainty of a situation is significantly more bound to greater ability to solve new situations or cope with stressful ones. The desire for a simple structure, or, in other words, the reaction to the lack thereof, can, to a considerable extent, influence the way people understand, experience and interact with the world (e.g., stereotype behavior in

uncertain situations). S.L. Neuberg and J.T. Newsom (1993) as well as Y.Bar-Tal (1994) point to some personality characteristics associated with the need for structure. Two basal strategies can be used to lessen the information load which people are constantly under:

1. avoidance strategy, which, to a considerable degree, limits the amount of information (creating psychological, physical or social barriers; reducing or even ignoring them);

2. information reduction can lie in the effort to structure the world so that it has a simpler or easier controlled form by using simpler generalizations, usually based on

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past experiences (schemes, prototypes, attitudes and stereotypes). An example of a scale item: I found that a well arranged life with a regular schedule is boring.

The PNS construct is based on a two-factor model of personal need for structure, where subfactor I (DFS) has to do with desire for structure and subfactor II (RFS) with the reaction to the lack of structure. The overall score for PNS is the sum of the score for both factors. Cognitive structuring in this concept creates a certain form of reduction of the complexity of a situation, in other words, reduction in the amount of information. The PNS concept is a part of other personality concepts such as authoritarianism, rigidity, dogmatism, intolerance toward uncertainty, etc. The closest correlations are with rigidity. The "Need for Structure" scale (PNS - Personal Need for Structure, M.Thompson, M.E.Naccarato & K.E.Parker, 1989, In: S.L.Neuberg and J.T.Newsom, 1993) represents a self-report scale where, on a six point scale, the subject is to agree or disagree with statements which are focused on the extent to which an environment is structured.

Research results to date, as they can be found in literature (Neuberg and Newsom, 1993, Schaller et al., 1995), have shown that individuals with high level of PNS significantly prefer the following:

- simple, non complicated organization of information
- application of already obtained social categories into new uncertain situations
- relatively simple reasoning and thinking processes
- little willingness to change attitudes, beliefs and faith (when encountering new information)
- generalizing lack of success into learned helplessness
- tendency toward depression

- less complex memory structures
- prevailing use of simplified inference heuristics
- arrangement of social interactions in such a way as to avoid complexity and maintain a simple structure
- pronounced emotional responses to events which disturb adapted schemes, activities, goals, etc.
- in general, there is a decrease in PNS with age

The Slovak translation of the scale (I. Sarmány Schuller, 1993) underwent a factor analysis (996 protocols); the results are in Table 1:

Table 1 Factor structure of the Slovak version of the PNS scale item no.

Item No.	F1	F2
1		.511
2	-.329	
3	.799	
4	.738	
5		-.186
6	-.717	
7		.627
8		.679
9		.643
10	.693	
11		-.384
12		.610

Except for item 5 (I enjoy being spontaneous), which in general is not very loaded (the English version of this scale) and the scale's authors did not count with the score in this item, the Slovak version of the PNS scale has very similar psychometric characteristics as the original version of the scale. The only slightly significant difference is in item 2, which in the original scale loads factor 2 - RFS (reaction to lack of struc-

ture) and in the Slovak version loads factor 1 DFS (desire for structure).

Research

In our research we tried to contribute to solving the problems concerning some social and cognitive barriers in a sample of 14-18 year old adolescents, students from regular as well as specialized high schools. The total number of our subjects was 524 (280 boys and 244 girls). The main goal of our study was to determine coping strategies associated with school load, anxiety and stress (social barriers of adjustment) and to map some cognitive barriers (associated with the need for structure personality construct). Moreover, we asked all students to respond to questions dealing with some sleep habits. Our previous results (Sarmány Schuller et al., 1996) have indicated a significant effect of sleep deficit which can play an important role in the overall ability to concentrate, chiefly in the time between 8 and 10 A.M. This deficit can also lower the cognitive activity and work motivation. The results showed a significant difference between hours of sleep necessary for a well rested night and the actual average hours of sleep given by the subjects - 1.27 hours.

In the research we used the following methods for all subjects:

1. The CIA scale (Coping Inventory for Adolescents) by J.P.Fanshawe and P.Burnett (1991) which is designed to reveal the following four coping strategies:

- positive avoidance (PA)
- family (social) communication (FC)
- anger (A)
- negative avoidance (NA)

2. PNS scale (Personal Need for Structure) which is designed to measure two factors associated with cognitive assessment:

- desire for Structure (DFS)

- response to lack of structure (RFS)

3. A scale to determine sleep habits - average hours of real sleep (HS), duration of needed sleep (DS), time of going to bed (HU), time of actually falling asleep (DZ) and preferred time to study (DU) - morning, throughout the day, evening), regularity irregularity of sleep habits

4. A scale to measure cognitive style in the dimension Heuristic vs. Algorithmic orientation (HxA, Groner & Groner, 1990, Slovak translation I. Sarmány, 1992)

Heuristic problem solving methods are not, unlike algorithmic ones, exactly defined. In other words, they are defined on the basis of negative characteristics. In terms of cognitive style, important role is played by the sensitivity and resistance to uncertainty and insecurity because heuristics is connected to risk taking - a person tries to shorten the way to a solution, tries to focus on the peculiarities of the problem situation and uses common knowledge, even tacit knowledge and intuition, recommendations, however, the definite sign is still the lack of a guarantee in successful solution.

Research results with the Slovak translation of the CIA scale (Sarmány Schuller, 1994) showed significantly higher use of ineffective coping strategies of anger in 13 year old girls as well as effective family communication in a group of 17 year olds, where the differences were significant in all strategies (in boys - higher negative avoidance, lower anger, lower family /social/ communication and lower positive avoidance).

Results

In the first stage we examined intersexual differences; t-tests are given in table 2

Table 2 t-tests for intersexual differences (boys, n=280; girls, n=244) in the studied parameters of the need for structure factors (DFS, RFS, PNS) and coping strategies subfactors of the CIA scale (NA, A, FC, PA) and select sleep habits.

Table 2: t-tests for intersexual differences (boys, n=280; girls, n=244) in the studied parameters of the need for structure factors (DFS, RFS, PNS) and coping strategies subfactors of the CIA scale (NA, A, FC, PA) and select sleep habits

	Boys		Girls		t=	p=
	AM	SD	AM	SD		
DFS	17.667	4.593	17.381	4.927	.684	
RFS	25.319	5.122	25.135	5.425	.397	
PNS	42.986	8.105	42.516	8.832	.631	
NA	13.461	4.878	13.373	5.002	.203	
A	16.707	4.188	17.816	4.270	2.995	.003
FC	16.650	6.168	17.537	6.454	1.607	
PA	22.050	5.164	23.889	4.826	4.193	.000
HS	7.752	.984	7.761	.956	.114	
DS	9.449	1.509	9.287	1.385	1.273	
HU	22.747	.821	22.564	.739	2.665	.008
DZ	23.545	17.602	24.717	18.265	.747	
HEU	27.046	5.713	24.496	5.563	5.160	.000
ALG	21.279	6.689	21.254	6.612	.042	

We found no significant intersexual differences in individual subfactors DFS and RFS nor in the overall PNS score. The results showed clearly that intersexual differences are practically nonexistent (which we consider to be relatively rare case in the research of psychology of personality, in other words in personality constructs themselves). We did find, however, a significant difference in the ineffective coping strategy using anger which is significantly higher in girls. This confirms the results of our previous research (Sarmány Schuller, 1994). On the other hand, in girls there is a significantly higher level of positive avoidance. Finally, the third significant difference between boys and girls is in the time they go to bed. Boys give significantly later time for going to bed but in real expression this represents only 0.183 hours, i.e. around

12 minutes. It should be noticed that we found a significant difference between the real duration of sleep and the hours of sleep needed which in boys comes to 1.7 hours and in girls 1.6 hours.

Similarly as in the first stage, we assessed the significance of the differences based on the given regularity - irregularity of sleep habits. Table 3 gives t-tests and statistical significance for the same studied variables in two groups of students (with regular - group 1 and irregular - group 2 sleep habits).

In applying the regularity-irregularity of sleep habits criterion, it is evident that the desire for structure subfactor (DFS) has statistically significantly higher values in the group with regular sleep habits. This was fully expected. However, the same is not true for the reaction to a lack of structure -

there, the difference between the two groups is not significant. Other significant differences deal with sleep habits again. Subjects with regular sleep habits give significantly longer hours of real sleep and significantly shorter hours for needed sleep. In group 1 (regular sleep habits) the difference between the real hours of sleep and the needed hours of sleep is 1.2 hours

and in group 2 it is 1.9 hours - this difference is statistically significant. One of the most important findings is the highly significant difference in school performance (assessed on the basis of three indicators - GPA, math grades and Slovak grades). In all three cases students with regular sleep habits have significantly better grades.

Table 3. Gives t-tests and statistical significance for the same studied variables in two groups of students (with regular - group 1 and irregular - group 2 sleep habits)

	Group 1		Group 2		t=	p =
	AM	SD	AM	SD		
DFS	18.138	4.408	17.145	4.925	2.335	.020
RFS	25.108	5.076	25.312	5.384	.431	
PNS	43.246	7.923	42.457	8.768	1.039	
NA	12.468	4.595	14.031	5.050	3.580	.000
A	17.385	4.299	17.119	4.236	.698	
FC	17.624	6.176	16.702	6.382	1.635	
PA	22.868	4.999	22.931	5.153	.138	
HS	7.998	.958	7.601	.947	4.657	.000
DS	9.201	1.313	9.484	1.529	2.182	.030
HU	22.476	.808	22.781	.752	4.406	.000
DZ	22.676	6.964	25.000	18.455	1.452	
HEU	25.873	5.833	25.850	5.755	.046	
ALG	20.756	6.257	21.596	6.865	1.412	

Table 4. Gives correlations of individual examined variables of the need for structure construct and coping strategies.

	DFS	RFS	PNS	NA	A	FC	PA
RFS	.423***	X					
PNS	.826***	.860***	X				
NA	-.286***	-.170***	-.257***	X			
A	-.022	.083	.040	.098*	X		
FC	.215***	.161***	.221***	-.286***	.349***	X	
PA	.012	-.086	-.047	.132**	.165**	.203***	X
HEU	-.218***	-.187***	-.239***	.149**	-.015	-.067	.126**
ALG	.318***	.353***	.399***	-.098*	.076	.063	-.041

*p< .05, ** p< .01, ***p< .001

Table 4 gives correlations of individual examined variables of the need for structure construct and coping strategies.

The need for structure personality construct has shown itself to be highly consistent; significant positive intercorrelations testify to this. The correlations of the need for structure and coping strategies are significant, as expected, with mainly negative avoidance and family (social) communica-

tion. Students with high need for structure (in individual subfactors as well as in the overall PNS score) use ineffective forms of coping strategies significantly less. The very low correlation between PNS and anger testifies to this. The low correlation between the need for structure and effective coping strategy of positive avoidance is surprising.

Table 5. Shows correlations of individual examined variables of the need for structure construct and sleep habits

	DFS	RFS	PNS	HS	DS	HU	DZ
RFS	.423***	X					
PNS	.826***	.860***	X				
HS	.141**	.030	.098*	X			
DS	.006	.059	.041	.333***	X		
HU	-.214***	-.081	-.171**	-.531***	-.042	X	
DZ	-.082	.079	-.003	-.008	.029	-.043	
HEU				-.138	-.032	.115*	-.124
ALG				.077	.115*	-.067	-.009

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5 shows correlations of individual examined variables of the need for structure construct and sleep habits

The correlation between some sleep habits and the need for structure personality trait is also interesting. It is, above all, a statistically significant positive correlation of the subfactor desire for structure (DFS) with the real hours of sleep (as well as the overall PNS score) but not with the reaction to the lack of structure. We found similar results in the case of the time of going to bed, where students with high score in the desire for structure go to bed significantly earlier.

Discussion

In our research we concentrated on the study of one of the possible cognitive barriers (need for structure personality trait) while examining mainly the forms of coping with school stress and one cognitive style dimension. As a point of reference we used the assumption that the ability to reduce the uncertainty of a situations is connected with greater ability to solve new or cope with load situations.

For anyone, but especially for a young person without verified life experiences, to solve stressful and new situations in a new way, heuristically, means to constantly come to terms with a high level of uncertainty and insecurity. One of the strategies used in trying to avoid this uncertainty may lie in trying to structure the world into simpler forms. This, on the one hand, will improve the legibility of the situations and thus

the certainty in decision making and situation solving. On the other hand, similarly as in the case of significant narrowing of categories, such items are created which contribute significantly to the solution and application of simple inferences. Thus our previous findings are confirmed. Particularly the ones concerning the fact that men with high level of need for structure prefer, for example, only a slightly instrumental strategy of coping with stress, i.e. strategy of direct solving. The results of our research can be summarized in the following points:

1. Intersexual differences in the "need for structure" personality construct are statistically nonsignificant and, therefore, this construct can be considered to be a universal characteristic which is generally, although to different degrees, reflected in cognitive assessment and problem solving (situation).
2. Coping strategies used by individuals with different levels of need for structure

differ significantly; mainly in the strategies of negative avoidance and family communication - used significantly more by individuals with a high need for structure. In general, we can say that the high need for structure is positively connected with effective coping strategies. However, this is not true for the area of the so-called positive avoidance which probably contains more elements of heuristic orientation.

3. The sleep habits under study proved to be highly correlated with the need for structure. Individuals with high need for structure go to bed earlier and give longer duration of real sleep. Moreover, high need for structure is probably connected with sleep regularity. In this case, we found a statistically significant difference in school performance (GPA, math and Slovak), where students with regular sleep habits do better in all three variables.

References

- Bar-Tal, Y. (1994). The effect of mundane decision-making of the need and ability to achieve cognitive structure, *European Journal of Personality*, 8, 45-58.
- Fanshawe, J.P., Burnett, P.C. (1991). Assessing school-related stressors and coping mechanisms in adolescents, *British Journal of Educational Psychology*, 61, 92-98.
- Groner, R., Groner, M. (1990). Heuristische versus algorithmische Orientierung als Dimension der individuellen kognitiven Stills, In: K.vonGrave, R.Hanni, N.Sommer, F.Tschan, (Hrsg.) *über die richtige Art, Psychologie zu betreiben*, Göttingen, Hogrefe.
- Neuberg, S.L., Newsom, J.T. (1993). Personal need for structure: Individual differences in the desire for simple structure, *Journal of Personality and Social Psychology*, 65(1), 113-131.
- Sarmány, I., 1993, Biorytmy v školskej činnosti - príspevok k školskej ergonómii, *Československá psychologie*, 37(6), 481-490.
- Sarmány Schuller, I. (1994). Load and stress in school - their sources and possibility of coping with them, *Studia Psychologica*, 36(1), 41-54.
- Sarmány Schuller, I., Fandelová, E., Sabolová, G. (1996). Niektoré charakteristiky spánkových návykov, štýlu učenia a akademickej úspešnosti (Sleeping habits characteristics, style of learning and academic achievement), In: M.Košč, I.Sarmány Schuller, E.Brozmanová (Eds.), *Retrospektíva, realita a perspektíva psychológie na Slovensku, Zborník príspevkov VIII. zjazdu SPS*, Stimul, Bratislava, 247-250.
- Schaller, M., Boyd, C., Yohannes, J., O'Brien, M. (1995). The prejudiced personality revisited: Personal Need for Structure and formation of erroneous stereotypes, *Journal of Personality and Social Psychology*, 68(3), 544-555.