

THE RELATION OF THE BEHAVIORAL DISORDERS AND SOME CONATIVE FEATURES OF THE ADOLESCENTS

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SUMMARY

The relation of perceived behavioral disorders and conative dimension presupposed by cybernetic model by Momirović et al., were examined in the sample of 397 pupils from five primary schools in Zagreb. The relation of the Questionnaire of behavioral modalities and the six scales for the estimation of conative dimensions (epsilon, hi, alpha, sigma, eta and delta) was examined under canonic and quasicanonic model. The canonic model extracted two significant pairs of factors, and the quasicanonic model extracted one pair. More detailed analysis showed that the pair of quasicanonic factors corresponds to the first pair of the canonic factors while the second pair was insufficiently defined. Moreover, quasicanonic pair of factors was more interpretable. The quasicanonic factor of behavioral disorders was defined mostly by the items that measure the active form of the disorders, while the factor in conative area was defined by 5 regulators; the SIGMA regulator of the assault reactions had the highest projections. The EPSILON activity regulator (responds to Eysenck's extroversion) at least participates in defining of this relation.

keywords: behavioral disorders, conative dimensions, adolescents

1. INTRODUCTION

The conative function regulators suggested model by Momirović et al. (1982) are hypothetically physiology based and in the interaction with the surrounding conditions that determine human behavior. So, they are the personality dimensions which physiology structures are situated in the central and vegetative nerve system, regulating the excitation-inhibition process, the organic functions, the behavior linked to organism defending and assaulting (aggressiveness). These mechanisms of coordination and integration work at higher level and their functioning quality influences the person's activity in his environment and his "mental health".

If we presume that the constructs of this model are based on reality, the obligatory conclusion is that the conative regulators functioning should be in significant relationship with the human behavior modalities. This relationship should imply that such behavioral disorders are the results of the disorder of conative regulators, and that this behavior presented as the problem for the individual and/or for his environment. We shall consider some of the findings by the researchers of this matter. It should be pointed out that this problem was mostly examined in the frame of Eysenck's theory of crime (1977) - (the hypothesis of the relationship among asocial and antisocial behavior with increased neuroticism,

extroversion and psychoticism, As Momirović et al. subsumes, among other things, it is clear that our hypothesis about the connection of the behavioral disorders and malfunctioning cybernetic regulators corresponds basically to Eysenck's theory. Foggit (1974, according to Furnham and Thompson, 1991) found out the existence of the positive correlation between delinquent behavior and extroversion (E), neuroticism (N) and psychoticism (P) in the sample of delinquent and non-delinquent adolescents. Comparing 330 children with the behavioral disorders with 354 children as control sample, Gabrys et al., (1991) found out that the experimental group achieved higher E, N and P results. Putnins (1982) got similar results at the sample of 179 adolescent boys, finding out that the delinquent group achieved higher level results at the scale of psychoticism than non-delinquent group. Cote and Leblanc (1982) And Silva et al. (1987) at sample 825 and 403 adolescents found out significant delinquent correlation for all three personality scales.

But, there are a lot of other researches without confirming this hypothesis. So, for example, Lane (1987) compares the known Eysenck's hypothesis with the Pierson's (1969, according to Lane 1987) where the delinquent adolescent persons are resistant to normal attempts of environment to change them because of their lack of anxiety. He found out, among other things, that the results by examining the pupils with different

problem's gradation support Eysenck's model for psychoticism factors and extroversion, but for neuroticism confirmed Pierson's alternative explanation of low neuroticism. Mitchell (1987 - according to Furnham and Thompson, 1991) found out at the sample of 5676 adolescents that the delinquents were much less anxious. Furnham and Thompson (1991) found the non-existence of statistically relevant correlation between the scale of self-reported delinquent behavior, extroversion and neuroticism.

This short overview of some important findings should point out the existence of unknown courses at this field of research. The aim of this paper, as it is the part of the project concerned in characteristics of socialization process during adolescence, is the analysis of the relation of the conative dimension functioning presupposed by conative functioning cybernetic model and the different modalities of the behavioral disorders used as sample of children in the last form of comprehensive school. So, in this paper we checked the hypothesis about significant correlation between the disorders of the functioning of conative regulators and the manifested behavioral disorders.

2. METHOD

The research has been done at the sample of 397 last form pupils from five Zagreb's comprehensive school. The estimation of the conative regulators functioning has been done applying 6 tests

created by K. Momirović, K. Bosnar and F. Prot according to cybernetic conative functioning model (Momirović, Horga and Bosnar, 1982). Each test has 20 items. The tests were adjusted to the age 11 to 14.

The EPSILON test examines the effectiveness of regulating activity system, the test HI the effectiveness of the system for regulating and controlling the organic functions, the ALPHA test the effectiveness of the system for regulating and controlling the defense reactions, the SIGMA test the effectiveness of the system for regulating and controlling the assault reactions, the DELTA test the effectiveness of the system for coordinating regulative functions and the ETA test the effectiveness of the system for the integration of the regulative functions. The Questionnaire of the behavioral modalities are made at Department of Behavioral Disorders at Faculty of Defectology.

The Questionnaire has 53 items which cover rate of behavioral disorders modalities, the behavior in performing school duties, and school's success.

The questionnaires were filled up by the class-masters because they knew pupils better than the other class-teachers. The items were defined by ordinal three grades scale (1 - worse than other pupils in the class - often shown the very behavioral form; 2 - average - sometimes shown the very behavioral form; 3 - better than the other pupils - not shown the very behavioral form).

3. RESULTS AND DISCUSSION

Table 1. Significant canonic factors

	DETERMINATION	CORRELATION	PROBABILITY
1	.40582	0.63704	.00000
2	.24605	.49603	.00051 LAST COUNTED EIGENVALUE

Table 2. Canonic coefficients (C) and factors (F) in the first set

VARIABLE	C1	F1	C2	F2
OPUSP8	-.03	.38	.25	-.04
SKODI8	.30	.69	.03	.00
DOMZA8	.08	.58	-.03	-.06
NEOPR8	-.02	.51	-.12	-.19
NAPNA8	.18	.48	-.18	-.22
IZONA8	-.11	.39	-.19	-.30
RASTR8	-.17	.27	-.12	-.06
GRICK8	-.06	.10	-.36	-.23
TIKOV8	.03	.20	.17	-.02
MOKRE8	-.08	-.10	-.06	-.13
SISAN8	-.05	.11	-.09	-.10
BRZOP8	.07	.17	.24	.23
HIPOH8	-.19	.15	-.20	-.13
NAMET8	-.05	.30	.01	.10
PRKOS8	.03	.52	.18	.08
VERBA8	.23	.67	-.05	.03
FIZIA8	.28	.56	-.15	-.15
LAGAN8	-.03	.44	-.09	-.12
MASTU8	.14	.33	-.22	-.01
PUSEN8	.22	.59	.13	.12
ALKOH8	.12	.42	.06	.12
SNIFA8	-.16	.06	-.03	-.00
TABLE8	.08	.24	.11	.03
BJEJK8	-.03	.09	-.27	-.21
VLAIM8	-.01	.11	.14	.10
PORIM8	.03	.14	-.00	.03
KRADJ8	.05	.24	.25	.19
ASOCO8	-.09	.36	-.11	-.12
PROSJA8	-.00	.16	-.13	-.09

VARIJABLE	C1	F1	C2	F2
TAPKA8	-.04	.22	.02	-.06
SKITN8	.03	.21	-.17	-.11
CINKA8	-.28	-.22	-.05	.08
ULIZI8	.01	-.01	.31	.26
OPONI8	.15	.35	-.05	-.04
VARAS8	-.06	.31	.20	.14
ZLOVA8	.00	.31	.10	-.12
NEUTI8	-.10	.13	.22	.17
NEUPR8	.01	.39	.09	-.02
POSPA8	-.05	.25	.15	.14
PUSOR8	.24	.16	.02	-.00
DROIN8	-.13	.01	.04	.03
PREPR8	.14	.18	.17	.01
PLASL8	.08	-.01	-.13	-.19
POVUC8	-.02	-.14	-.00	-.17
POTIS8	-.06	-.05	-.18	-.19
PLACL8	-.02	.09	.17	.05
NEMAR8	.11	.48	-.02	.02
NEZAI8	-.05	.43	-.19	-.07
RAZMA8	.20	.32	-.01	.02
MUCAN8	-.15	.00	.03	-.04
VANNS8	-.01	-.07	.00	.05
VANNI8	.07	-.06	-.05	.07
PONRA8	-.04	.14	.10	-.06
PREKI8	-.06	.14	-.03	-.06
EMOHL8	-.09	.28	-.19	-.22
SUPSP8	-.09	.02	.10	.13
EKSCE8	-.14	.23	.26	.35
SANKC8	-.00	.12	.42	.04
DRUGK8	-.10	.10	-.26	-.10

Table 3. Canonic coefficients (C) and factors (F) in the second set

	C1	F1	C2	F2
EPS92	-.35	.11	.27	.32
HI92	-.18	-.01	-1.29	-.64
ALP92	-.38	-.10	.80	-.01
SIG92	1.06	.88	-.03	.05
DEL92	-.17	.23	.56	.09
ETA92	.30	.31	-.18	-.17

Table 4. : Significant quasicanonic factor

	EIGENVALUE	PART OF COMMON	ACCUMULATED
1	0.3	.85729	.85729 LAST COUNTED EIGENVALUE

Table 5. Quasicanonic correlations and covariance

	CORRELATION	COVARIANCE
F11	.4022	1.8898

Table 6. : Pattern (P) and structure (S) of quasicanonic factor in the first set

TAPKA8	.23	.23
SKITN8	.38	.38
CINKA8	.12	.12
ULIZI8	.17	.17
OPONI8	.47	.47
VARAS8	.63	.63
ZLOVA8	.50	.50
NEUTI8	.41	.41
NEUPR8	.64	.64
POSPA8	.51	.51
PUSOR8	.10	.10
DROIN8	.04	.04
PREPR8	.03	.03
PLASL8	.08	.08
POVUC8	.00	.00
POTIS8	.14	.14
PLACL8	.24	.24
NEMAR8	.64	.64
NEZAI8	.65	.65
RAZMA8	.28	.38
MUCAN8	.16	.16
VANNS8	-.21	-.21
VANNI8	-.20	-.20
PONRA8	.29	.29
PREKI8	.09	.09
EMOHL8	.30	.30
SUPSP8	.20	.20
EKSCE8	.35	.35
SANKC8	.26	.26
DRUGK8	.25	.25

VARIABLE	P1	S1
OPUSP8	.61	.61
SKODI8	.72	.72
DOMZA8	.74	.74
NEOPR8	.78	.78
NAPNA8	.77	.77
IZONA8	.68	.68
RASTR8	.64	.64
GRICK8	.33	.33
TIKOV8	.23	.23
MOKRE8	-.00	-.00
SISAN8	.02	.02
BRZOP8	.36	.36
HIPOH8	.42	.42
NAMET8	.45	.45
PRKOS8	.64	.64
VERBA8	.74	.74
FIZIA8	.64	.64
LAGAN8	.69	.69
MASTU8	.39	.39
PUSEN8	.63	.63
ALKOH8	.56	.56
SNIFA8	.16	.16
TABLE8	.22	.22
BJEJK8	.28	.27
VLAIM8	.17	.17
PORIM8	.20	.20
KRADJ8	.44	.44
ASOCO8	.56	.56
PROSJA8	.18	.18

Table 7. : Pattern (P) and structure (S) of quasicanonic factors in the second set

	P1	S1
EPS92	.26	.26
HI92	.56	.56
ALP92	.51	.51
SIG92	.87	.87
DEL92	.70	.70
ETA92	.76	.76

Table 8. Correlations of canonic (CAN) and quasicanonic (F) factors of first and second set

FIRST SET	F1
CAN1	.70
CAN2	-.04
SECOND SET	F1
CAN1	.64
CAN2	-.02

Table 9. Congruencies of ponders (W) and structures (S) of canonic (CAN) and quasicanonic (F) factors of first and second set

FIRST SET	F1	
	W	S
CAN1	.33	.94
CAN2	-.00	-.15
SECOND SET	F1	
	W	S
CAN1	.62	.74
CAN2	-.02	-.24

Canonic correlation analysis extracted two pairs of factors; the correlation between them was medium, but statistically significant (table 1). Canonic covariance analysis extracted one pair of factors; correlation between them was also average (table 4 and 5).

The first canonic factor in the set of the behavioral disorders is defined by following items: school discipline, regularity of doing homework, unjustified absents from certain courses, voluntarily "cutting" from classes, defying, verbal aggression, physical aggression, smoking, carelessness. Its pair in the set of personality variables is defined mostly by the SIGMA regulator of assault reactions, responsible for aggressive behavior forms (tables 2 and 3). We could conclude accordingly that the SIGMA regulator disorders are responsible for the appearance of mentioned behavior disorders. The aggressive children are undisciplined, absent from classes, show verbal and physical aggression, etc.

The second canonic factor in the set of the behavioral disorders is defined by very low variable projections (the highest coefficient is .4202 - sentence delivered by the judge for minors, which is extremely rare in our sample, so it cannot be seriously considered). The canonic factor in the set of personality dimensions is poorly defined, too (for example, the coefficient of ALPHA test is .8031, and its factor's correlation only -.0107). So, we hold that this factor is not interpretative.

The canonic covariance analysis extracted one pair of the quasicanonic factors. The factor in the set of behavioral disorders is defined by general school success, school discipline, regularity of doing homework, voluntarily teaching desertion, unjustified absences from certain courses, whole-day absence from teaching, absentmindedness, defiance, verbal and physical aggression, lying, smoking and alcohol consuming, association with asocial persons, cheating in examination situations, untidiness school equipment, sleepiness, negligence and indifference.

The factor in the set of personality dimensions is defined firstly by the SIGMA regulator, then ETA, DELTA, HI and ALPHA respectively, while EPSILON has lower projections (table 6 and 7).

The canonic covariance analysis (quasicanonic analysis) in this case gives more interpretable results than canonic analysis. Tables 8 and 9 show that the first pair of canonic factors corresponds

approximately to the second factor's pair extracted by the quasicanonic analysis. The congruence coefficient of the canonic and the quasicanonic factors in the first set is very high (.94), nearly be said the same factors, while the congruence coefficient of the canonic and quasicanonic factor in the second set is slightly lower (.74). The difference between these factors is that the canonic factor is defined mostly by the scale SIGMA, and with lower coefficients of the other scales, while in the quasicanonic factors structure participate mostly and the other scales (except EPSILON).

The second pair of canonic factors is very difficult to identify because the variables' coefficients are mostly very low. So, the interpretation relies on the results of the canonic covariance analysis.

The direction of the connection between the behavioral disorders and the conative dimensions responds to what was expected. In the space of behavioral disorders, the quasicanonical factors define mostly the variables of active forms of behavioral disorder. The factor in the space of the conative dimension defines 5 regulators.

Taking into consideration the fact that the activity regulator responds mostly to Eysenck's extroversion, first of all, this result confirms those findings that argue against Eysenck's presumption about the importance of E-I dimension for the behavioral disorders. According to cybernetic model, this regulator is situated at the lowest place in the hierarchy, and it is determined mostly by the genetic code and the least liable to the conditions in the environment. It is responsible for the organism activity level but it seems that less than it is other regulators connected to formation of some specific behavioral forms. Furthermore, we perceive the connection between the functioning of the SIGMA assault reaction regulator and the ETA mechanisms for the integration of regulative functions with the active behavioral disorder modalities (but also the ALPHA, HI and DELTA regulators). This connection is logical, according the model presupposition that the SIGMA, HI and ALPHA regulators are subordinate directly to the ETA and DELTA regulators.

We will put forward some opinions about the cause-effect relationship between the researched variables. Among other things, the existence of correlation means the following: the disorder of one regulator presupposed the disorders of others. That could lead us to the supposition that the same genetic structure stands in the base of all five

conative functioning regulators - if they are "bad", all the regulators will function badly. Still, yet, such conclusion would be a premature one. It is possible that connection of the functioning of the emerges in the following way: if because of unfavorable genetic base, the functioning of, for example, SIGMA regulator is disordered, the child would show the behavioral disorders, mostly active ones. These disorders make his socialization (interaction with the environment) more difficult and this influences the ETA system, responsible for the socialization level, that is influenced mostly by the environment; i.e. the programs that ordered his functioning are being formed during the educational process. So, the child has the socialization difficulties and does not fit in the surrounding.

This fact has a feedback effect to his conative system - because of the surrounding unfavorable feedback, the child's anxiety grows (ALPHA regulator) and organic disorders phenomena emerge as

consequences of the whole situation (HI regulator). All these have unavoidable implication to the coordination system functioning DELTA, so there is a possibility of appearance of heavy behavioral disorders, that this system is responsible for. According to this model, consequently, inheritable "malfunction" of only one regulator creates unfavorable environmental conditions and a conflict with the environment, so influences the disorders of functioning of other regulators as well. Of course, until now we haven't the data that confirmed any of these presumptions.

What is interesting and should be pointed out is this: from our results it is visible that the children who express the active form of the behavioral disorders and are not socialized, represent the problem for their environment and they experience problems (anxiety and disorders of organic function). So, they should be treated, not as the source of problems and troubles but as victims of their own behavior, who undoubtedly need professional help.

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