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ABSTRACT

The aims of this study are to identify personality types based on the constructs of the revised reinforcement sensitivity theory, and to examine the relations between personality types, violent behavior and attitudes toward violence in prison and non-prison samples. The study was conducted on a sample of 716 males (including 107 prison inmates). The clusters named *approaching*, *avoidant* and *controlled* were extracted. Cluster solutions obtained in prison and non-prison samples showed great similarity. Differences between clusters with regard to violent behaviors and attitudes toward violence were examined in each of the sub-samples separately. In the non-prison sample, the clusters differ with regard to all indicators of violence, except for violence toward parents, while in the prison sample the clusters do not differ with regard to violence toward partner and unknown people. In prison sample, participants with multiple prison sentences are most frequent in the approaching cluster.

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1. Introduction

1.1. Personality and criminal behavior: Variable-centered vs. person-centered approach

Relations between personality and delinquent behavior have been investigated both in variable-centered and person-centered approaches. While variable-centered studies are focused on partial contributions of personality traits to antisocial behavior, the person-centered studies examine the contributions of distinctive personality prototypes. It appears that, within person-centered approach, the interest in delinquent behavior is twofold. The first important issue is whether personality types (extracted in general population) differ with regard to indicators of anti-social and delinquent conduct. Thus, in this context the indicators of criminal behavior may be regarded as important criteria for cluster validation (Dubas, Gerris, Janssens, & Vermulst, 2002; Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996). The second crucial issue is whether distinctive clusters of criminal offenders can be identified by using models of personality as framework (Herzberg & Hoyer, 2008; Herzberg & Roth, 2006). Such studies may show whether clusters of criminal offenders resemble the clusters extracted in

the general population, and therefore provide valuable information on replicability of broad personality prototypes.

1.2. Personality prototypes

Most studies have confirmed the existence of three robust personality prototypes: resilient, overcontrolled, and undercontrolled (Asendorpf, Borkenau, Ostendorf, & van Aken, 2001; Chapman & Goldberg, 2011; Hart, Burock, London, Atkins, & Bonilla-Santiago, 2005; Robins et al., 1996). Resilient persons usually show a profile with below average neuroticism and above average scores on the remaining four dimensions. They are socially well-adjusted. The overcontrolled individuals score high on neuroticism and low on extraversion, and show vulnerability to internalizing problems. The undercontrolled individuals score low on conscientiousness and agreeableness. They are impulsive and at greater risk for comorbid internalizing and externalizing problems (Asendorpf et al., 2001; Hart et al., 2005). It has been shown that personality prototypes differ with respect to juvenile delinquency (Robins et al., 1996), vandalism and drug use in adolescence (Dubas et al., 2002), and self-reported aggressiveness (Grumm & von Collani, 2009).

Some studies have shown the usefulness of the five-factor model (FFM)-based typological approach for studying offenders by showing that prisoner prototypes significantly differed with respect to childhood delinquency, sentence length, prevalence of Ecstasy and LSD use, and social support (Herzberg & Hoyer,

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2008; Herzberg & Roth, 2006). However, these studies have showed that optimal number of prototypes based on FFM is five (Herzberg & Hoyer, 2008; Herzberg & Roth, 2006), with two additional prototypes named confident and reserved. FFM has been most frequently used framework for research in this area. However, the results from the variable-centered approach suggest that psychobiological models may also be considered as the framework for person-centered studies, particularly if such studies are focused on relations between personality prototypes and delinquent behavior (Cale, 2006).

1.3. Reinforcement sensitivity theory and personality prototypes

In recent years, the reinforcement sensitivity theory (RST) (Gray, 1982; Gray & McNaughton, 2000), as one of the most important theoretical frameworks in the psychobiological paradigm, has come up as a useful model in explaining different types of behavior, including the antisocial behavior. The original RST (Gray, 1982) implies the existence of three behavioral systems with an important biological basis. The first one is the Behavioral Approach System (BAS), which regulates the approach and sensitivity to conditioned signals of reward, as well as relief of avoided punishment. The second system is the Behavioral Inhibition System (BIS), which regulates passive avoidance and sensitivity to conditioned signals of punishment, as well as frustration due to absence of reward. The third is the fight–freeze System (FFS), which regulates defensive behavior provoked by unconditioned aversive stimuli and corresponds to fear-related behavior or defensive aggression.

Although typologies based on original RST are rare, some authors (Knyazev & Slobodskaya, 2006) have shown that essentially the same personality prototypes as those previously recognized by the use of FFM, could also be identified using RST dimensions. For example, overcontrolled individuals were characterized by high behavioral inhibition, undercontrolled by high behavioral activation, and the resilient scored low on both dimensions (Knyazev & Slobodskaya, 2006). The use of different measures of RST constructs yielded very similar results. Some findings showed that the disinhibitory trait profile in a non-clinical sample is associated to high levels of illicit drug problems and antisocial PD symptoms (Taylor, Reeves, James, & Bobadilla, 2006). The most important conclusion drawn from these results was that such a profile exists in the population and might provide vulnerability toward disinhibitory disorders (Taylor et al., 2006).

The revision of the RST has been influenced by the recent findings in the field of neuropsychology (Gray & McNaughton, 2000). In the revised RST (rRST), the BIS system comprises functions of detection and resolution of conflicts between appetitive and aversive stimuli, as well as between two appetitive and two aversive stimuli (Gray & McNaughton, 2000). Therefore the BIS recognizes conflicts within or between the other two systems (BAS–FFFS, BAS–BAS and FFFS–FFFS conflicts) and aims to resolve these conflicts through the process of risk assessment, as well as memory and environmental scanning. In the rRST, BAS is treated as a system responsible for reacting to all appetitive stimuli-conditioned and unconditioned-bringing the organism into state of anticipating reward. The fight/freeze/freeze System is a reactive system which is responsible for behavior in fear-related situations, where a person experiences threat (McNaughton & Corr, 2004). Depending on the nature of threat, as well as on its distance, a person can react actively (which reflects fight system activation), by escaping (which underlies flight), or without any overt behavior (as a consequence of activation of freeze) (McNaughton & Corr, 2004).

Although the revised Gray's model may serve as a plausible framework for person-centered studies, there are virtually no studies examining personality prototypes based on the constructs of the rRST.

1.4. Current study

The current study has two main objectives, which correspond to the objectives of person-centered studies conducted in general and non-prison populations. The first objective of the current study is to identify the optimal number of clusters based on rRST dimensions. Although previous studies have shown similarities between the prototypes based on the RST and FFM, dimensions of rRST have not yet been used in a person-centered study. The stability of the obtained solutions will be tested by conducting the analyses separately in samples of prisoners and non-prisoners. Besides examining the stability of cluster solutions, these results could provide information on possible structural differences of personality prototypes in prison and general populations. The second objective of the research is external validation of prototypes obtained on the sample of the general population and the sample of prisoners. Criteria for external validation will be age, the tendency toward violent behavior, and attitudes toward violence. In a sample of offenders, additional criterion will be the number of previous prison sentences. The results of several studies (Dubas et al., 2002; Grumm & von Collani, 2009; Robins et al., 1996) justify the use of variables related to antisocial and violent behavior as criteria for external validation of clusters.

2. Method

2.1. Participants and procedure

2.1.1. Sample 1

The sample comprised 107 male prisoners detained in the Detention and rehabilitation centre (high security correctional facility for male offenders) in Sremska Mitrovica, Serbia. The criteria for inclusion in the study (besides the complete sets of questionnaires) were absence of severe mental disorders (i.e. schizophrenia, bipolar I), or mental retardation. Age ranged between 23 and 64 ($M = 37.16$; $SD = 11.21$), the majority were single (75.5%), with high school degree (50.5%). Fifteen percent of respondents were sentenced for homicide, 56% for other violent offences, and 29% for a non-violent offence. Sentence duration ranged from 6 months to 40 years ($M = 8.96$ years; $SD = 8.28$). Informed written consent was obtained from all participants. Confidentiality was guaranteed in the consent form which the participants signed.

2.1.2. Sample 2

The general population sample was composed of 609 males. Their mean age was 37.05 ($SD = 12.85$). Age ranged from 18 to 66 years. Nearly half of the participants were married (47.5%). Part of this sample consisted of university students (16.9%) who collected the data to fulfill a course requirement. The rest of the sample were men from general population, who were recruited by students by means of "snowball" sampling strategy. All participants provided oral informed consent. Confidentiality was guaranteed in the consent form which the participants signed. Participants did not receive financial compensation for participation in the study.

2.2. Instruments

2.2.1. The Reinforcement Sensitivity Questionnaire (RSQ; Smederevac, Mitrović, Čolović, & Nikolašević, 2014)

The RSQ is a measure of rRST constructs. The RSQ contains 29 items, which are rated on a four-point Likert scale, ranging from "strongly disagree" to "strongly agree". The items are grouped in five scales: Behavioral Inhibition System (BIS) (7 items, $\alpha = .78$; example item: "When I have to 'choose between two evils', I get

very upset”), Behavioral Activation System (6 items, $\alpha = .79$; example item: “When I want something, I never think about possible obstacles”), fight (6 items, $\alpha = .82$; example item: “Whenever someone hurts me, I immediately fight back”), freeze (5 items, $\alpha = .65$; example item: “If I happen to be around aggressive people, I try to get away”), and freeze (5 items, $\alpha = .81$; example item: “I actually ‘freeze’ when I am very scared”). Alphas were calculated using polychoric correlations.

2.2.2. The Maudsley Violence Questionnaire (MVQ: Walker, 2005)

This is a 56-item ‘true/false’ self-report questionnaire covering a range of cognitions (beliefs, rules, distortions and attributions) that make up a person’s attitudes toward violence. The MVQ comprises two scales: ‘Machismo’ and ‘Acceptance of Violence’. The Machismo scale consists of 42 items describing attitudes that violence is a crucial part of stereotypical masculine behavior, and views on non-violent behavior as a display of weakness. The Acceptance of Violence scale consists of 14 items describing justification of violent behavior, particularly as a response to threat or attack. Cronbach alphas were .92 and .76 respectively.

2.2.3. The Violence Questionnaire (VQ: Kodžopeljčić, Dinić, & Čolović, in press)

The VQ was developed as a measure of the tendency toward physical, verbal and psychological violent behavior, aimed at various targets (persons). VQ consists of 30 items which describe violent behavior toward family members, partner, friends or strangers. For the purpose of this study, only items describing physical violence were used. Participants rated frequency of violent behavior on a 5-point Likert scale (1 – never, 2 – once or twice, 3 – several times per year, 4 – several times per month, 5 – several times per week). In this study, dichotomized measures of physical violence toward parents, friends, partner, and unknown persons were used (0 – did not occur; 1 – occurred).

3. Results

Correlations between the RSQ scales, as well as between the RSQ and MVQ scales, are moderate, while the correlations between the RSQ and VQ scales are generally low (see Table 1).

A double cross-validation procedure (Asendorpf et al., 2001; Barbaranelli, 2002; Chapman & Goldberg, 2011) was performed in both prison and non-prison samples separately. Scores were standardized prior to the analysis. Each sub-sample was split in random halves. On each random half, a two-step clustering procedure was performed: the hierarchical Ward’s analysis was followed by the *k*-means procedure, which was performed using cluster

centers from the Ward analysis. The analysis was repeated in both random halves, using cluster centers calculated in other random half. The clusterings were compared using Cohen’s kappa coefficient. The coefficients calculated in random halves were averaged, and the resulting Cappa coefficient was used as a measure of cluster stability. Cohen’s κ coefficients larger than .60 were considered acceptable. In order to obtain more stable estimates, the procedure was repeated ten times, using different random halves each time (Barbaranelli, 2002). According to suggestions made by Barbaranelli (2002), and in analogy with approaches of Chapman and Goldberg (2011) and Alessandri et al. (in press), the procedure was bootstrapped in both sub-samples, using 200 samples with replication.

Solutions including 3, 4, and 5 clusters were compared using the cross-validation procedure and the bootstrap (see Table 2).

The results from both the cross-validation procedure and bootstrap show that 3-cluster solutions are optimal in both prison and non-prison populations (see Table 2).

3.1. Approaching type

The cluster which was named the *Approaching* type, comprises 177 members in the non-prison sample (29.1%), and 39 members (36.4%) in the prison sample. Members of this cluster score high on the BAS and fight, and low on the BIS, freeze, and freeze (see Figs. 1 and 2).

3.2. Avoidant type

The cluster named the *Avoidant* type comprises 237 members (38.9%) in the non-prison sample, and 47 members (43.9%) in the prison sample. Members of this cluster have high scores on the BIS, freeze and freeze, and average scores on the BAS and fight (see Figs. 1 and 2).

3.3. Controlled type

The third cluster was named the *Controlled* type. These participants score low on all RSQ scales. This cluster comprises 195 (32%) members in the non-prison sample, and 21 members in the prison sample (19.6%) (see Table 3).

Results of ANOVAs show that the clusters differ significantly on all RSQ dimensions. In both sub-populations, patterns of differences between clusters are similar. Differences are largest on freeze, and smallest on freeze in both prison and non-prison populations (see Table 4).

Differences in attitudes and beliefs about violence are significant between all three clusters in non-prison population, while

Table 1
Correlations between RSQ, MVQ and VQ scales.

	BIS	BAS	Fight	Flight	Freeze	VTP	VTF	VTPA	VTU	Machismo
BAS	-.04									
Fight	.14***	.53***								
Flight	.43***	-.09*	-.06							
Freeze	.59***	-.07	.00	.42***						
VTP	.08*	.05	.08*	.01	.09*					
VTF	.07	.19***	.20***	-.09*	.08*	.22***				
VTPA	.11***	.03	.12***	.05	.10*	.22***	.27***			
VTU	-.01	.16***	.27***	-.16***	-.03	.14***	.34***	.23***		
Machismo	.06	.31***	.44***	-.16***	.05	.09*	.20***	.17***	.31***	
AOV	-.02	.31***	.40***	-.20***	.00	.10*	.32***	.11***	.31***	.59***

Note. VTP – physical violence toward parents; VTF – physical violence toward friends; VTPA – physical violence toward partner; VTU – physical violence toward unknown people; AOV – acceptance of violence.

* $p < .05$.

*** $p < .001$.

Table 2
Descriptive statistics for Cohen's κ coefficients (cross-validation approach and bootstrap).

	Double cross-validation procedure						Bootstrap					
	Non-prison sample			Prison sample			Non-prison sample			Prison sample		
	3 clusters	4 clusters	5 clusters	3 clusters	4 clusters	5 clusters	3 clusters	4 clusters	5 clusters	3 clusters	4 clusters	5 clusters
Mean	.95	.63	.57	.80	.71	.71	.94	.65	.52	.83	.74	.74
Std. Dev.	.03	.21	.12	.13	.15	.12	.08	.23	.13	.13	.17	.15
Minimum	.91	.36	.42	.59	.50	.60	.48	.24	.28	.37	.33	.39
Maximum	.99	.93	.82	.94	.94	.92	1	1	.96	1	1	1

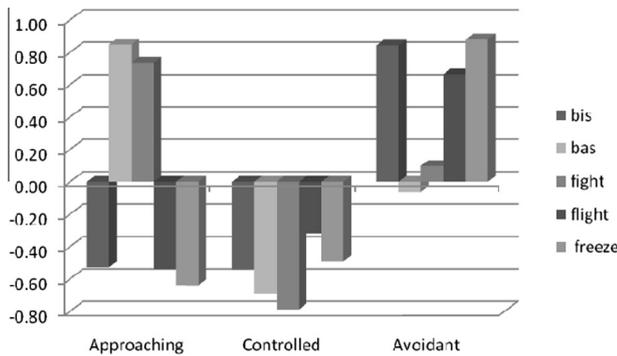


Fig. 1. Cluster profiles in non-prison sample ($N = 609$).

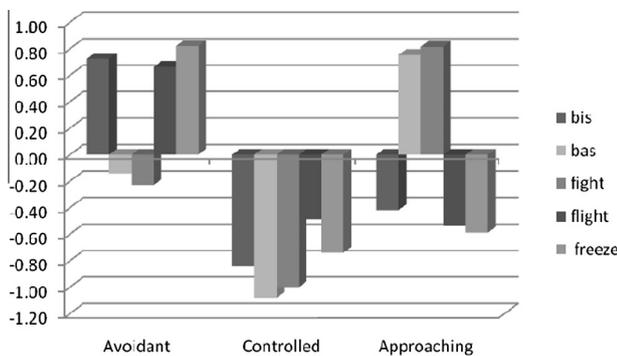


Fig. 2. Cluster profiles in prison sample ($N = 107$).

the Avoidant and Controlled clusters do not differ significantly in prison population (see Table 5).

Results of chi square tests show that clusters differ significantly on all variables except physical violence toward parents in non-prisoners. In the prison sample, differences are significant on age, violence toward parents, and violence toward friends. In both

samples, percentage of younger participants tends to be higher in the Approaching cluster. In non-prisoners, percentage of participants who committed acts of violence tends to be lowest in the Controlled group, while the percentage of men who were violent toward unknown people is highest in the Approaching cluster. In the prison population, percentage of violent acts toward friends is highest in the Approaching cluster, while the percentage of violent acts toward parents is highest in the Avoidant cluster. In prisoners, the percentage of participants with multiple prison sentences is largest in the Approaching cluster.

4. Discussion

The main objective of this study was to identify personality types, based on the dimensions of the revised Gray's reinforcement sensitivity theory, in male participants from prison and non-prison population. These analyses, performed in subsamples of prisoners and of non-prisoners separately, can be viewed as a form of validation of the obtained three-cluster solution. The clusters are stable across sub-samples, and at the same time similar to three prototypes identified in previous studies (Asendorpf & van Aken, 1999; Asendorpf et al., 2001). Thus, the resilient prototype, resembles the controlled type in our study, the overcontrolled type is similar to the avoidant type, while the undercontrolled type resembles the approaching type. The findings of previous studies (Herzberg & Roth, 2006) suggest that the resilient prototype may be less frequent in offenders than in general population, since the features of this type proved to be less pronounced in prisoners' samples. Our results confirm these findings. Members of the controlled cluster are more frequent in general population than in prisoners' sample. Also, members of the approaching cluster, which corresponds to undercontrolled type, are more frequent in prisoners' sample. The approaching cluster scores high on the BAS and fight dimensions, and low on the BIS, freeze and freeze. This cluster is characterized by active approach to situations which provide signals of reward, and by relative insensitivity to situations in which either potential or actual threat can be recognized. This implies a

Table 3
Cluster scores on RSQ scales and ANOVAs.

Sample		Approaching (1)		Controlled (2)		Avoidant (3)		F	η^2	Scheffe
		M	SD	M	SD	M	SD			
Nonprison	BIS	12.53	3.14	12.47	2.94	18.06	2.92	250.31***	.45	3 > 1, 3 > 2
	BAS	18.84	2.39	13.30	2.92	15.55	3.15	173.56***	.36	1 > 2, 1 > 3, 3 > 2
	Fight	16.77	3.00	10.91	2.60	14.32	3.48	171.21***	.36	1 > 2, 1 > 3, 3 > 2
	Flight	10.55	2.33	11.18	2.66	13.99	2.24	123.66***	.29	3 > 1, 3 > 2, 2 > 1
	Freeze	6.80	1.78	7.23	1.84	11.21	2.4	299.93***	.50	3 > 1
Prison	BIS	12.79	3.35	10.95	3.54	17.74	3.10	40.52***	.44	3 > 1, 3 > 2
	BAS	19.10	2.62	10.95	3.12	15.13	3.89	42.36***	.45	1 > 2, 1 > 3, 3 > 2
	Fight	17.62	2.98	9.81	2.56	13.13	3.56	45.14***	.47	1 > 2, 1 > 3, 3 > 2
	Flight	9.64	2.63	9.81	3.04	13.72	2.76	27.84***	.35	3 > 1, 3 > 2
	Freeze	6.64	1.84	6.14	1.88	11.30	2.72	59.63***	.53	3 > 1, 3 > 2

*** $p < .001$.

Table 4
Differences between clusters on attitudes and beliefs toward violence.

Sample		Approaching (1)		Controlled (2)		Avoidant (3)		F	η^2	Scheffe
		M	SD	M	SD	M	SD			
Non-prison	Machismo	7.34	7.14	2.96	4.84	5.35	6.02	24.64***	.08	1 > 2, 1 > 3, 2 > 3
	AOV	5.99	3.08	3.96	2.43	4.71	2.73	25.99***	.08	1 > 2, 1 > 3, 2 > 3
Prison	Machismo	10.72	7.57	3.76	3.62	6.15	6.56	9.18***	.15	1 > 2, 1 > 3
	AOV	7.79	3.19	3.52	1.83	4.57	2.68	21.75***	.30	1 > 2, 1 > 3

Note. AOV – acceptance of violence.

*** $p < .001$.

Table 5
Differences between clusters on modalities of violent behavior, age and number of prison sentences.

Sample			Approaching		Controlled		Avoidant		χ^2	V
			N	%	N	%	N	%		
Non-prison	Age	≤35	117	66.1	85	43.6	96	40.5	29.84***	.22
		>35	60	33.9	110	56.4	141	59.5		
	VTP		63	35.6	60	30.8	83	35	1.21	.05
	VTF		80	45.2	40	20.5	95	40.1	28.64***	.21
	VTPA		41	23.2	32	16.4	67	28.3	8.50*	.12
	VTU		79	44.6	44	22.6	60	25.3	25.63***	.20
Prison	Age	≤35	32	82.1	7	33.3	26	55.3	14.62**	.35
		>35	7	17.9	14	66.7	21	44.7		
	VTP		16	41	4	19	28	59.6	10.00**	.29
	VTF		25	64.1	5	23.8	24	51.1	8.88*	.28
	VTPA		11	28.2	5	23.8	19	40.4	2.39	.15
	VTU		25	64.1	8	38.1	25	53.2	3.75	.15
	No. sentences	1	19	48.7	18	85.7	34	72.3	9.71**	.30
		>1	29	51.3	3	14.3	13	27.7		

Note. Only the results regarding the violent behaviors that occurred (response "1") are presented in the table; VTP – physical violence toward parents; VTF – physical violence toward friends; VTPA – physical violence toward partner; VTU – physical violence toward unknown people; No. sentences – number of prison sentences; $df = 2$ for all analyses; V – Cramer's V.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

combination of high impulsivity (high BAS) and a pronounced aggressive behavior in contact with other people (high fight). Low scores on other rRST dimensions point to disinhibition, the tendency to ignore the signals of potential danger, and the absence of fear reactions in threatening situations. Approaching cluster generally shows the most pronounced tendency to manifest physical violence regardless of the "targets". The members of the approaching clusters in both prison and non-prison samples are most ready to accept violence as a way to solve problems and present oneself as powerful and strong. These results are concordant with the findings which suggest that the undercontrolled type, which corresponds to the approaching cluster (scoring low on agreeableness and conscientiousness from the Big Five), is inclined to externalized problems and violent behavior (Asendorpf et al., 2001; Hart et al., 2005). Participants with multiple prison sentences are most frequent in the approaching cluster. Low BIS and high BAS in members of this cluster may point to certain features of antisocial disorder or psychopathy, which may influence the lack of response to penal treatment in these participants. It is notable that members of this prototype are mostly persons under the age of 35 years.

The avoidant cluster scores high on the BIS, freeze, and freeze, and low on BAS and fight. Such structure is similar to the profile of the overcontrolled type, scoring high on neuroticism and low on extraversion from the Big Five (Asendorpf et al., 2001; Chapman & Goldberg, 2011). This implies a strong tendency to scan the environment for potential danger, as well as the tendency to

withdraw, and/or inability to react in situations that are recognized as threatening. However, the average BAS and fight scores suggest that Avoidants, although not inclined to risky and aggressive behaviors, can pursue attractive targets. Also, they may show antagonistic behavior in situations which contain strong signals of threat. Although the members of avoidant cluster are rarely violent toward strangers, they may exhibit intense aggressive behavior toward familiar people, such as family members or partners. These results may point to the role of neuroticism in aggressive behavior, which is in accordance with findings indicating that neuroticism is one of predictors of stability, variety and onset of conduct problems, aggression and symptoms of antisocial personality (Miller, Lynam, & Leukefeld, 2003). Although the tendency to experience fear may suppress expression of violence toward strangers, this may not apply to close relationships, where the emotional tension can be released more easily through violent acts. The avoidants (particularly prisoners), probably act violently due to sensitivity to threat (which could lead to defensive violent reactions), rather than due to the belief that violence is acceptable and justified. Given the differences in strength of the BAS (direction toward reward) and the FFFS (defensive aggression), as well as differences between the approaching and the avoidant cluster in cognitions related to violence, one may speculate that members of the two clusters, in spite of similar degree of expressed violence, display different types of aggression. Also, they can be of all ages, implying a possible stability of avoidant strategies throughout the life span.

The controlled cluster scores low on all rRST dimensions. People of this type do not show any increase of tension in the presence of appetitive or aversive stimuli. They do not show a distinct tendency to be impulsive, aggressive, or anxious. This finding is in favor of Corr's joint subsystems hypothesis (Corr, 2002), since the balance between the BIS and BAS can be established only in the case of weak expression of both systems, which is typical for resilient (Knyazev, Wilson, & Slobodskaya, 2008). The controlled cluster, similar to the Resilient type (scoring low on neuroticism and above average on other Big Five dimensions) (Asendorpf et al., 2001; Chapman & Goldberg, 2011), shows little tendency to exhibit physical violence, possibly due to emotional stability and good impulse control. Prisoners who are members of this cluster have the lowest frequency of multiple prison sentences. Generally, members of the controlled clusters rarely tend to appear as strong and powerful, though they tolerate violent interaction more often than the members of avoidant cluster. It is important to note that the members of controlled clusters are often people over 35 years of age, which supports the hypothesis that the control instances become stronger over time.

The results have several important implications, which are related to some of the crucial research issues in person-centered studies, particularly the ones concerning antisocial behavior. The results support the existence of three personality prototypes beyond the FFM. Although prisoners and non-prisoners do not differ with regard to basic personality structure, there are differences in patterns of relations between personality types and violent behavior. Our results suggest that behavioral control deficit is probably the most important risk factor for the manifestation of violent behavior. Also, they suggest that markers of violent behavior are among important features of personality types, justifying both their use in person-centered studies and their prospective use in personality profiling of criminal offenders. Plausibility and stability of cluster solution obtained in this study, as well as its congruence with the results of previous typological studies, supports the use of person-centered approach.

Possible limitations to this study include the small sample of prison inmates, as well as the absence of direct comparison between types based on rRST and Big Five dimensions. Also, the inclusion of female participants is recommended in future studies. Despite these limitations, this study provides informative results for the person-centered paradigm.

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