Personality-related determinants of criminal recidivism

Janko Međedović[1], Daliborka Kujačić[2], and Goran Knežević[3]

[1] *Institute of Criminological and Sociological Research, Belgrade, Serbia*
[2] *Correctional Institution of Belgrade – Penitentiary of Padinska Skela, Serbia*
[3] *Department of Psychology, Faculty of Philosophy, University of Belgrade, Serbia*

The goal of this study was to explore personality-related determinants of recidivism, with recidivism being defined as a) the number of lawful sentences a person had (criminal-legal recidivism), and b) the number of prison sentences pronounced (penal recidivism). The study was carried out in two independent samples: a) convicts from the Correctional Institution of Belgrade – Penitentiary of Padinska Skela (N=113), and b) convicts from the Special Prison Hospital in Belgrade (N =112). The variables of the Five-Factor Model of Personality (*Neuroticism*, *Extraversion*, *Openness*, *Agreeableness* and *Conscientiousness*) were measured, together with two additional basic personality traits: *Disintegration* (a broad dimension of psychosis-proneness), and *Amorality* (three factors representing a disposition to amoral forms of behavior). In addition, psychopathy (*Manipulative* and *Antisocial* tendencies) – a psychological entity expected to most successfully predict criminal recidivism – was measured as well. The efficiency of prediction of the two criteria of recidivism was assessed separately in each of those two samples.

The results revealed differences in the orchestration of predictors depending on the kind of recidivism as the criterion and the severity of offense. The most important predictors of both forms of recidivism in the sample of convicts with lower intensity of criminal behavior were psychopathic traits. However, in the sample of convicts with higher intensity and variety of criminal behavior, the most important predictors of the number of sentences were Antisociality and Amorality Induced by Frustration, while the most important predictors of the number of prison sanctions were Amorality Induced by Brutality and Disintegration.

Keywords: *criminal recidivism, basic personality dimensions, disintegration, amorality, psychopathy.*

INTRODUCTION

Empirical findings demonstrate that the persons who often engage in criminal activity cause much bigger damage to society than those who do so only once. Thus, some recent findings demonstrate that criminal recidivists commit 50–60% of all crimes in Japan and in the UK (Someda, 2009). That is

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Corresponding author: janko.medjedovic@fmk.edu.rs.

why assessment of risk or danger of recidivism is an important parameter that affects several decisions of practitioners in correctional institutions: prediction of inmate behavior in the institutions themselves, application of adequate type of treatment, decision on weekend leave or other kinds of benefits, and recommendations for parole or follow up of released persons (Krauss, Sales, Becker, & Figueredo, 2000).

There are some findings suggesting that criminal recidivism represents a stable behavioral pattern (Savage, 2009). Hence, it is plausible to assume that personal dispositions could be one of the determinants of that kind of behavior. The personality traits we first could think of as being related to criminal recidivism are those that were already proven as being related to criminal behavior in general. Many findings demonstrate that the Big Five domains (John, Naumann, & Sotto, 2008) maintain stable and interpretable relations with delinquency and crime. These findings relate primarily to negative correlations between crime and Agreeableness and Conscientiousness (Miller & Lynam, 2001; Le Couff & Toupin, 2009), which suggests that criminal personality is characterized by aggression and the inability to delay gratification. As for the relationships between the Big Five personality factors and recidivism in juvenile delinquents, a recent study (van Dam, Janssens, & De Bruyn, 2005) has demonstrated that objectively operationalized recidivism (court and police information) was not related to personality structure. However, when recidivism was examined by self-assessment measures, statistically significant differences between non-recidivists and recidivists have appeared. Recidivists scored significantly higher on Neuroticism and lower on Agreeableness (van Dam et al., 2005). Yet another study found that significant predictors of recidivism were low Conscientiousness and low Openness, while the interaction of these domains, when their influence on recidivist behavior was in question, was also significant (Clower & Bothwell, 2001).

Also, there are views that some specific personality dispositions generate delinquent behavior. These are durable and stable internal dispositions that shape moral behavior and represent deep personality-related roots of individual differences in moral behavior. That concept was called Amorality (Knežević, 2003), and it contains three modalities: Amorality Induced by Impulsivity, Amorality Induced by Frustration, and Amorality Induced by Brutality (Knežević, Radović, & Peruničić, 2008). Recent studies (Međedović, 2011) showed that the key aspects of Amorality could be assumed as the negative pole of the Honesty/Humility trait (Ashton, Lee, & Son, 2000), discovered in some new emic lexical studies (Ashton, Lee, Perugini, Szarota, de Vries, Di Blas, Boies, & De Raad, 2004). There is some evidence that general amorality is related to the most diverse aspects of criminal behavior (Momirović, Vučinić, Hošek, & Popović, 1998), as well as that the aspects of Amorality Induced by Brutality and Frustration are of crucial importance for the understanding of this behavior (Međedović & Stojiljković, 2008).

Ullrich and Marneros's survey belongs to the studies that located the roots of recidivism in individual psychopathology. These authors have tried to examine a broad framework of individual disorders and their relationships with crime and

recidivism (Ullrich & Marneros, 2006). Factor analysis of various descriptors of personality disorders has isolated three factors that stand behind their manifest symptomatology. The first factor is made of paranoid, dissociated, emotionally unstable and histrionic traits. It is correlated with longtime offender behavior that includes aggression and violence. The second factor is based on anankastic disorder and a lack of schizoid personality traits. Its correlation with recidivism is negative. Finally, the third factor, that has strong negative loadings on dependent and anxious personality disorders, is also related to recidivism, but less then the first factor is and it correlates with nonviolent forms of offending behavior. These findings are congruent with those demonstrating that psychotic symptoms are related to the production of violent behavior, independently (Douglas, Guy, & Hart, 2009) or in interaction with psychopathic characteristics (Fullam & Dolan, 2006). Past findings also imply the question of possible correlations between schizotypy (as a general disposition to psychotic experiences) and crime and recidivism. One of the oldest operationalizations of schizotypy was the concept of Psychoticism proposed by Hans Eysenck. Research has demonstrated that this personality dimension represents a reliable predictor of self-assessed delinquency (Levine & Jackson, 2004) and various types of crimes (Gudjonsson, Einarsson, Bragason, & Sigurdson, 2006). There are some findings that Psychoticism is an especially successful predictor in young offenders; however, it continues to be related to more severe crimes in adults (Heaven, Newbury, & Wilson, 2004). These findings suggest that Psychoticism is a personality characteristic that exists in offenders who frequently engage in criminal activity, i.e. that it is related to recidivism. Explicit correlations between Psychoticism and recidivism have been established for adolescent violent behavior (Carrasco, Barker, Tremblay, & Vitaro, 2006), as well as for self-assessed recidivism in various kinds of crimes (van Damm et al., 2005).

Numerous studies conducted at the Institute for Criminological and Sociological Research in Belgrade have underlined the fact that the systems for coordination and integration of regulatory functions (operationalizations of the construct of Psychoticism [i.e. schizotypy], proposed by Momirović, Wolf, & Džamonja, 1993) are those personality traits that play a pivotal role in the explanation of criminal and recidivist behavior (Hošek, Momirović, Radulović, & Radovanović, 1998; Knežević, Kron, & Vučinić, 1995; Knežević & Radović, 1995; Radovanović, Radulović, Momirović, & Hrnjica, 1995). In the study presented here, psychotic and schizotypal behavioral phenomena were articulated through the concept of Disintegration (Knežević, Opačić, Kutlešić, & Savić, 2005). Disintegration could be understood as a basic personality trait that lies outside of the Big Five Model, because there are some empirical findings that psychotic-like dispositions are not reducible to the Big Five structure (Kwapil, Wrobel, & Pope, 2002; Watson, Clark, & Chmielewski, 2008; Ashton & Lee, 2012).

However, in the last two decades, psychopathy has been perhaps the most studied construct when recidivism was in question. The most influential model of psychopathy, as well as the instruments for its measurement, was proposed by

Robert Hare (Hare, 2002). It implies the existence of two related psychopathy factors: the first one describes the characteristics of psychopathic personality (manipulation, lack of guilt, grandiose self impression, shallow emotions) and is often named *Manipulation*; while the second one consists of the indicators of psychopathic behavioral style (impulsiveness, promiscuity, antisocial behavior, criminal tendencies) and is labeled *Antisociality*. Several studies have shown that the measures of psychopathy (first of all, rating measures obtained by the PCL or PCL-R scale) are of key importance for predicting recidivism (Dolan & Doyle, 2000). Psychopathy is a particularly successful predictor of violent crime (Laurell & Daderman, 2005). However, the majority of the studies confirmed a clear difference between the first and second psychopathy factor in the prediction of recidivism. Namely, Antisociality consistently demonstrated stronger correlations with recidivism measures than Manipulation did (Walters, 2003). Moreover, when the influence of the first factor was partialized in the prediction, Antisociality still remained a significant predictor of recidivism while the opposite was not the case (Walters, 2003; Walters, Knight, Grann, & Dahle, 2008). Although this finding is unquestionably important for the practitioners who work with inmates or with those under criminal risk, there is at least one reason for which this finding is of little epistemological value. As we have already said, when estimating Antisociality an assessor gathers data on previous crimes, thus unwittingly committing a predictor-criterion contamination, i.e. future crimes are predicted by past ones, which is a problem especially characteristic of postdictive studies (Leistico, Salekin, DeCoster, & Rogers, 2008). From an explanatory and theoretical point of view, a much more important finding would be a correlation between Manipulation and recidivism, because this psychopathy factor is not necessarily related to commission of criminal acts. However, there are still no findings that could give a clear and unambiguous picture of this relation (Kroner, Mills, & Morgan, 2007).

The main goal of this study was to identify those dispositional constructs that represent the best predictors of criminal recidivism. Measures were chosen whose ability to predict recidivism was empirically or conceptually demonstrated in previous studies. All the constructs used in the present study can be regarded as personal dispositions, with the concept of psychopathy not pretending to articulate an independent, basic personality trait but rather a psychological construct that is strongly related to several basic personality traits (Decyper, de Pauw, de Fryt, de Bolle, & de Clerq, 2009; Miller, Lynam, Widiger, & Leukefeld, 2001; Miller & Lynam, 2001). The next research goal was to define the degree of replicability of particular predictors of two types of recidivism in two samples of convicts.

Criminal law theory distinguishes among several types of criminal recidivism (Jovašević, 2006; 1998). *Criminological recidivism* represents the commission of a criminal act by a person who had already committed a criminal act before, regardless of whether he/she was convicted for it or not.

If a person commits a crime and he/she had already been lawfully sentenced for a previously committed crime, then it is a *criminal-legal recidivism*. Finally, *penal (or penological) recidivism* represents a situation where a prison sentence is pronounced to a person who had already been sentenced by the same sanction once before (Jovanić, 2010).

One of the criteria of recidivism used in this study was the number of lawful convictions. According to the previously exposed classification, this criterion could primarily be classified as criminal-legal recidivism. However, according to the current Serbian criminal legislation, in addition to a lawful sentence, a person can be fined or imposed by suspended sentence. The second criterion measure is based only on a respondent's number of pronounced prison sentences. It is very similar to the formulation of penal recidivism. Analysis of this criterion has a very important goal: a criterion of recidivist behavior that would be more rigorous than the multiplicity of convictions (Macanović, 2009). Potential predictors of this type of recidivism could reveal the dispositions that produce a criminal behavior that is very resistant to change and correction. One of the goals of the present study was to identify the personal determinants of these persistent and stable forms of criminal behavior.

Data were analyzed with hierarchical linear regression. Criterion variables were the number of lawful convictions and the number of prison sentences. Both measures were normalized by utilizing Blom's algorithm (Blom, 1954) prior to the abovementioned analysis. As it is well known, the hierarchical model makes possible evaluation of the contribution of variables incremental to the contribution of variables introduced in the previous step. In this analysis, age and educational level were introduced at the first level (block), five personality traits at the second (to evaluate their contribution over age and education, i.e. assuming that there is no difference in those two variables among subjects), and, finally, Disintegration, Amorality and psychopathy – the traits postulated as having direct relations with criminal behavior (to evaluate their contribution over age, education and five basic personality traits). The analyses were done in SPSS statistical package, version 13.

STUDY 1

The goal of this study – carried out in a sample of convicts who were serving their terms in the Correctional Institution of Belgrade – Penitentiary of Padinska Skela – was to identify the traits that can predict the number of lawful convictions and the total number of prison sentences.

Method

Sample. 113 male respondents participated in this research. Average age of participants was 35.7 years.

Measures. Personality traits from the Five Factor Model were examined by the NEO-FFI personality inventory (Costa & McCrae, 1992). It contains 60 items, with 12 for each of the domains of the Five-factor model: *Extraversion*, *Neuroticism*, *Openness*, *Agreeableness* and *Conscientiousness*. The reliability of the scales in this sample went from α=0.55 (Agreeableness) to α=0.81 (Conscientiousness).

Disintegration (Knežević et al., 2005) represents a reconceptualization of psychotic, schizotypal and schizoid behavioral phenomena as a basic personality dimension. This trait was examined by the DELTA–10 test. Only the general score of Disintegration was used in the analysis, representing the average sum of the results on the modalities of *General Executive Dysfunction*, *Perceptual Distortions*, *Increased Awareness*, *Depression*, *Paranoia*, *Mania*, *Social Anhedonia*, *Flattened Affect*, *Somatoform Dysregulation* and *Magical Thinking*. *Disintegration* was examined by a short 20-item scale, and every modality was measured with two items. The scale's overall reliability was α=0.80.

The personality-related dispositions that generate amoral forms of behavior were measured by the AMRL9 instrument (Knežević et al., 2008). Amorality was operationalized through three factors, of which each is expressed through three specific modalities. The factor of Amorality Induced by Impulsivity (α=0.88) consists of the following modalities: *Low control* (impetuosity, unpredictability of reactions, impulsiveness), *Hedonism* (superficial hedonistic orientation, exclusive focus on one's own needs) and *Laziness* (lack of aspirations, low perseverance, disorganization). The factor of Amorality Induced by Frustration (α=0.85) contains the following aspects: *Stubbornness* (spite, vengefulness, low agreeableness), *Machiavellianism* (behavior that uses all possible means to reach an end) and *Resentment* (malice, envy, general resentment). The factor of Amorality Induced by Brutality (α=0.92) consists of the following modalities: *Sadism* (cruelty, absence of empathy, absence of pity, pleasure in infliction of pain to others), *Brutal modulation of resentment* (destruction motivated by envy and malice) and *Passive amorality* (refraining from giving help, carelessness, passive Schadenfreude). In this study we had only analyzed the scores on Amorality factors. The questionnaire contained 115 items.

These three instruments were based on the method of self-assessment. Responses were given on five-point Likert scales where 1 meant "I disagree completely" and 5 "I agree completely".

A revised checklist of assessment of psychopathy (PCL-R) was used to examine the two factors that have been most frequently obtained in empirical studies of this phenomenon: the first one describes the characteristics of psychopathic personality and its interpersonal style, while the second one comprises various aspects of antisocial and criminal behavior (Hare, 2002). The first factor is called *Manipulation* (α=0.77) and the second one *Antisociality* (α=.85). The PCL-R contains a semi-structured interview that was conducted with each respondent individually. The interviews lasted from 60 to 90 minutes. On the basis of data obtained in the interviews and information taken from the inmate prison files, an assessor estimated each respondent on 20 indicators of psychopathy. Scores ranged from 0 (absence of an indicator) to 2 (presence of an indicator in high degree). Afterwards, those data were used to calculate scores on the two factors of psychopathy.

Results

Prediction of criminal-legal recidivism. The participation of the examined measures in the regression function that predicts the respondents number of lawful sentences is shown in Table 1.

Table 1. *Contribution of particular predictors in the regression model of explanation of the number of lawful sentences*

	First level		Second level		Third level		
	B	β	B	β	B	β	r
Age	0.02	0.32**	0.02	0.34**	0.02	0.35**	0.24*
Education	–0.08	–0.25*	–0.08	–0.25*	–0.03	–0.09	–0.14
Neuroticism			0.02	0.03	0.07	0.09	0.00
Extraversion			0.11	0.12	0.14	0.16	0.21*
Openness			0.05	0.03	0.01	0.00	0.02
Agreeableness			–0.20	–0.18*	–0.15	–0.14	–0.11
Conscientiousness			0.12	0.10	0.01	0.01	0.12
Disintegration					–0.12	–0.09	–0.08
Amorality Induced by Impulsivity					–0.22	–0.19	–0.09
Amorality Induced by Frustration					–0.12	–0.09	–0.06
Amorality Induced by Brutality					0.09	0.06	–0.07
Manipulation					0.02	0.13	0.32**
Antisociality					0.06	0.35**	0.30**
Contributions by levels:	R^2=0.11**		ΔR^2=0.06		ΔR^2=0.14**		

Note: B – non-standardized regression coefficient; β – standardized regression coefficient; r – zero order correlation between the predictor and the criterion; R^2: coefficient of determination; ΔR^2 – change in R^2 obtained by adding the next set of predictors in the analysis; * – $p<0.05$; ** – $p<0.01$

Participants age and education predicted 11% of the variance of the number of lawful convictions (F=6.82; $p<0.01$). Both predictors were significant, as Table 1 demonstrates. The inclusion of FFM personality traits did not actually increase the percentage of the explained variance (ΔF=1.51; $p>0.05$), even with Agreeableness as additional significant predictor in the model (β=–0.18; $p<0.05$). The contribution of the variables introduced at the third level was 14% (ΔF=1.51; $p<0.01$). It was based primarily on respondent age (β=0.35; $p<0.01$) and Antisociality factor (β=0.35; $p<0.01$). Age (r=0.24; $p<0.05$), Extraversion (r=0.21; $p<0.05$), Manipulation (r=0.32; $p<0.01$) and Antisociality (r=0.30; $p<0.01$) had significant zero-order correlations with the criterion.

Prediction of penal recidivism. In this analysis, the contribution of the examined variables in prediction of the number of prison sentences pronounced to the participants was explored. Results of this analysis are shown in Table 2.

Table 2. *Contributions of particular predictors in the regression model of explanation of the number of prison sentences*

	First level		Second level		Third level		
	B	β	B	β	B	β	r
Age	–0.01	–0.11	–0.01	–0.11	–0.01	–0.11	–0.09
Education	0.012	0.06	0.02	0.06	0.07	0.27*	0.03
Neuroticism			–0.01	–0.02	–0.09	–0.15	–0.06
Extraversion			0.09	0.12	0.06	0.08	0.14
Openness			0.12	0.10	0.15	0.12	0.12
Agreeableness			–0.10	–0.11	0.06	0.06	–0.12
Conscientiousness			0.05	0.06	0.05	0.05	0.08
Disintegration					0.15	0.14	–0.02
Amorality Induced by Impulsivity					0.04	0.04	0.06
Amorality Induced by Frustration					0.13	0.12	0.08
Amorality Induced by Brutality					–0.17	–0.14	–0.03
Manipulation					0.03	0.24*	0.31**
Antisociality					0.06	0.39**	0.32**
Contributions by levels:	$R^2=0.01$		$\Delta R^2=0.05$		$\Delta R^2=0.20$**		

Note: B – non-standardized regression coefficient; β – standardized regression coefficient; r – zero order correlation between the predictor and the criterion; R^2: coefficient of determination; ΔR^2 – change in R^2 obtained by adding the next set of predictors in the analysis; * – $p<0.05$; ** – $p<0.01$

The predictors introduced at the first (F=0.64; p>0.05) and second level (ΔF=0.99; p>0.05) did not contribute significantly to the prediction of the criterion variance. However, by introducing the predictors at the third level, the contribution (20%) became statistically significant (ΔF=4.41; p<0.01). Level of education (β=0.27; p<0.05), Manipulation (β=0.24; p<0.05) and Antisociality (β=0.39; p<0.01) had independent contribution to the explanation of the criterion. The two psychopathy factors had significant zero-order correlation with the number of prison sentences (r=0.31; p<0.01 and r=0.32; p<0.01, respectively).

DISCUSSION

The data obtained in both analyses performed in this sample confirmed the importance of study of *psychopathy* as a specific trait structure that may lead to stable criminal behavior (Dolan & Doyle, 2000). The factor of Antisociality was a significant constituent of both regression functions (Tables 1 and 2). However, this finding is not without its shortcomings, i.e. the fact that the factor of Antisociality is a better predictor of recidivism is practically important, but explanatory feeble. Namely, the indicators of Antisociality (for example,

behavioral problems, antisocial behavior and delinquency in adolescence – Hare, 2002) are very similar to the behavior they have to explain. As it is known that one of the best predictors of future criminal behavior is the presence of that very behavior in an individual's past (Gendreau, Little, & Goggin, 1996), the ability of Antisociality to predict recidivism only means that the behavior under study is stable over time, which is one of the main tenets of trait theory in general. Speaking in terms of methodology, there is a predictor-criterion contamination: correlation studies examine correlations between various constructs; however, if the contents of the constructs are almost identical, the explanatory gain of such a procedure is slim. However, the first psychopathy factor, Manipulation, predicts independently the number of prison sentences (Table 2). The explanatory power of the factor of Manipulation is much bigger, since it "captures" internal, personality-related and emotional processes, such as lack of guilt, absence of empathy, flattened affect, hypertrophied self-esteem and the like. Manipulation has significant zero-order correlations with both of the criterion measures too (Tables 1 and 2).

The personality trait of *Agreeableness* has a significant negative β coefficient (Table 1) in the prediction of the number of lawful sentences, on the second level of analysis. These findings represent a replication of the result that low Agreeableness is a predictor of criminal behavior (Miller & Lynam, 2001; Le Couff & Toupin, 2009), and even of criminal recidivism (van Dam et al., 2005). Low Agreeableness is related to subjective impressions of anger and expression of aggression, while high Agreeableness is partially based on successful control of aggressive impulses (Graziano & Eisenberg, 1997). Yet another argument for primarily interpreting low Agreeableness as a disposition to aggressive behavior can be found in the studies that located the anger generating system on the negative pole of Agreeableness (Davis, Panksepp, & Normansell, 2003). However, the influence of this trait ceases to be significant at the third level of the analysis, which suggests that Antisociality is an even better marker of aggressiveness, which, in turn, is congruent with its conceptualization (Hare, 2002).

The only additional trait of interest that has some role in those analyses is Extraversion. It has a significant zero-order correlation with the indicator of penal recidivism (Table 2), but obviously that connection does not hold on, when all the other variables are controlled for.

STUDY 2

The second study was carried out in the Special Prison Hospital in Belgrade. In addition to serving their prison terms, the subjects in this sample had also to undergo an obligatory drug rehabilitation program. The other differences between the convicts assessed in this prison and those from the Penitentiary of Padinska Skela are demonstrated in Table 3. The aim of the study was to find out whether the same variables predicted the number of lawful convictions and the number of prison sentences in this sample of convicts as well.

Method

Sample. 112 male respondents, whose average age was 29.8 years. For easy reference and handy comparison of the characteristics of the respondents who participated in the second and third study, these are shown in the following table.

Table 3. *Characteristics of the respondents*
from the first and second study

	Arrested before 18	Convictions before 18	Life and limb	Earlier convictions	Suspended sentence	Age of First offence
The Penitentiary of Padinska Skela	22.30%	12.50%	25%	40.20%	15.20%	28.52
The Prison Hospital	46.90%	30.10%	44.20%	77.90%	36.30%	19.88

The first column contains the percentages of the respondents' arrests before the 18th year of age. The respondents from the Prison Hospital had been much more often arrested before reaching legal maturity, which indicates a greater frequency of criminal behavior in adolescence. By the same token, they also had a greater number of lawful convictions, indicated in the second column. The most serious crimes that the participants in these two studies were convicted for were those against life and limb, which is reflected in the third column. Again, the respondents from the Prison Hospital more often belonged to this type of convicts. They also had a greater number of previous lawful convictions (the fourth column). Moreover, they had more difficulty complying with sentences: they had violated suspended sentence or escaped from the institution in a comparatively greater percentage (the fifth column). Finally, regarding the time of the commission of the first crime, the respondents from the Prison Hospital were on average almost ten years younger (19.88 years) than those from the Penitentiary of Padinska Skela (28.52 years).

Measures. The personality traits that comprise the Five Factor Model were examined with the same instrument as in the previous study: NEO-FFI. Cronbach's reliability coefficients of the scales that measure the Big Five domains went from $\alpha=0.58$ (the factor of Openness) to $\alpha=0.82$ (the factor of Conscientiousness).

Disintegration was measured by the Delta–9 instrument (Knežević et al., 2005). It contains 80 items that measure the modalities of Disintegration (we did not measure Social Anhedonia). In this study, only the general score was used as a measure of psychosis-proneness. The scale's overall reliability was $\alpha=0.94$.

Amorality was assessed by the AMORAL 15 questionnaire (Knežević et al., 2008). It contains 183 items that assess fifteen modalities of Amorality, grouped into three factors in the following way: Impulsiveness, Poor Control, Problematic Socialization, and Laziness form *Amorality Induced by Impulsivity* ($\alpha=0.91$); Projection of Amoral Impulses, Stubbornness, Machiavellianism, Resentment, and Anthropological Pessimism are the subscales that constitute the factor of *Amorality Induced by Frustration* ($\alpha=0.94$), while Sadism, Rationalization of Brutality, Brutal Hedonism, Brutal Modulation of Resentment, and Passive Amorality form *Amorality Induced by Brutality* ($\alpha=0.95$). In our analyses, only the scores obtained on the factors of Amorality were used.

The ratings of psychopathy measures were obtained on the PCL-R scale. The reliability of the factor of Manipulation in this sample was $\alpha=0.76$, while the reliability of Antisociality was $\alpha=0.75$.

Results

Prediction of criminal-legal recidivism. The results of regression analysis with the number of lawful sentences as the criterion in this sample are presented in Table 4.

Table 4. *Contributions of particular predictors in the regression model of explanation of the number of lawful sentences*

	First level		Second level		Third level		
	B	β	B	β	B	β	r
Age	0.01	0.07	0.01	0.09	0.02	0.20	0.04
Education	–0.08	–0.17	–0.07	–0.14	–0.01	–0.02	–0.16
Neuroticism			0.00	–0.00	–0.01	–0.06	0.10
Extraversion			0.00	0.01	–0.00	–0.02	–0.01
Openness			0.00	0.01	0.01	0.10	–0.04
Agreeableness			–0.03	**–0.22***	–0.01	–0.04	**–0.25***
Conscientiousness			–0.01	–0.12	–0.01	–0.08	**–0.17***
Disintegration					0.16	0.12	**0.24***
Amorality Induced by Impulsivity					–0.42	–0.27	**0.23***
Amorality Induced by Frustration					0.41	**0.31***	**0.36****
Amorality Induced by Brutality					0.23	0.16	**0.32****
Manipulation					0.06	0.03	**0.23***
Antisociality					0.83	**0.40****	**0.42****
Contributions by levels:	R²=0.03		ΔR²=0.07		**ΔR²=0.23****		

Note: B – non-standardized regression coefficient; β – standardized regression coefficient; r – zero order correlation between the predictor and the criterion; R²: coefficient of determination; ΔR² – change in R² obtained by adding the next set of predictors in the analysis; * – p<0.05; ** – p<0.01

Neither the first (F=1.64; p>0.05) nor the second block of predictors (ΔF=1.58; p>0.05) contributed to the number of lawful convictions. However, negative Agreeableness (β=–0.22; p<0.05) was the only one significant predictor within the second block. The third block explained 23% of the criterion variance, when age, education and five basic personality traits were controlled for (ΔF=4.41; p<0.01). Significant contributors among the variables of the third block were Antisociality (β=0.40; p<0.01) and Amorality Induced by Frustration (β=0.31; p<0.05). Significant zero-order correlations were found between the criterion and Agreeableness (r=–0.25; p<0.05), Conscientiousness (r=–0.17; p<0.05), Disintegration (r=0.24; p<0.05), Amorality Induced by Impulsivity (r=0.23; p<0.05), Frustration (r=0.36; p<0.01), Brutality (r=0.32; p<0.01) and both factors of psychopathy – Manipulation (r=0.23; p<0.05) and Antisociality (r=0.42; p<0.01).

Prediction of penal recidivism. The results of regression analysis with the number of prison sentences as the criterion are shown in Table 5.

Table 5. *Contributions of particular predictors*
in the regression model of explanation of the number of prison sentences

	First level		Second level		Third level		
	B	β	B	β	B	β	r
Age	0.03	**0.26****	0.03	**0.26****	0.02	0.17	**0.22***
Education	−0.09	**−0.22***	−0.08	**−0.20***	−0.04	−0.11	−0.18
Neuroticism			0.00	0.04	0.01	0.08	0.14
Extraversion			0.01	0.08	0.01	0.08	0.04
Openness			0.00	0.02	0.01	0.04	−0.06
Agreeableness			−0.02	−0.15	−0.01	−0.08	−0.18
Conscientiousness			−0.02	−0.19	−0.02	−0.16	**−0.25****
Disintegration					0.27	**0.23***	**0.26****
Amorality Induced by Impulsivity					−0.49	**−0.34***	0.10
Amorality Induced by Frustration					−0.18	−0.15	0.13
Amorality Induced by Brutality					0.51	**0.41****	**0.28****
Manipulation					0.28	0.16	**0.24***
Antisociality					0.28	0.15	**0.19***
Contributions by levels:	**R²=0.10****		**ΔR²=0.08**		**ΔR²=0.13****		

Notes: B – non-standardized regression coefficient; β – standardized regression coefficient; r – zero order correlation between the predictor and the criterion; R²: coefficient of determination; ΔR² – change in R² obtained by adding the next set of predictors in the analysis; * – p<0.05; ** – p<0.01

Participant age and education explained 10% of the variance of the number of prison sentences (F=5.63; p<0.01). Basic personality traits did not have incremental contribution to explanation of the criterion variance. (ΔF=1.97; p>0.05). However, the third block explained 13% of the criterion variance over age, education and FFM traits (ΔF=3.03; p<0.01). The significant predictor variables were Amorality Induced by Brutality (β=0.41; p<0.01), Amorality Induced by Impulsivity (β=−0.34; p<0.05) and Disintegration (β=0.23; p<0.05). Significant zero-order correlations were found between the number of imprisonments and Conscientiousness (r=−0.25; p<0.01), Disintegration (r=0.26; p<0.01), Amorality Induced by Brutality (r=0.28; p<0.01), Manipulation (r=0.24; p<0.05) and Antisociality (r=0.19; p<0.05).

DISCUSSION

Zero-order correlations between the examined traits and the number of lawful sentences (Table 4) provide a rich and comprehensive structure of predictors of the criminal-legal recidivism: low Agreeableness and Conscientiousness, and

high Disintegration, Amorality and psychopathy. However, in multivariate design only several traits remained as independent predictors of this type of recidivism. On the second level of analysis, only low Agreeableness had a significant predictive contribution – a result that replicates the finding from the first study (Table 1). Again, like in the first study, Agreeableness lost the ability to explain this criterion when the predictors of the third level are introduced in analysis. Once again, Antisociality had the most important role in prediction, which is also a replication of the finding obtained in the first study. Amorality Induced by Frustration joined the second factor of psychopathy in prediction of the number of participants sentences. The connection between this Amorality factor and criminal behavior has been detected in previous studies as well (Međedović & Stojiljković, 2008). Findings obtained in this analysis show that stubbornness, resentment and machiavellian tendencies are dispositions towards recidivism in criminal acts too.

Regression analysis of the number of prison sentences demonstrated that Disintegration represents one of important predictors of recidivism (Table 5). These findings confirmed the role of pro-psychotic personality traits as predictors of recidivism (Carrasco et al., 2006; van Damm et al., 2005). Amorality Induced by Brutality has an independent contribution to the prediction of this criterion too. Having in mind the definition of the concept of Amorality, this finding was well expected (Knežević, 2003). Amorality Induced by Brutality represents more serious and hypertrophied forms of Amorality, where aggression is modulated by sadism and resentment. Past studies have also revealed the presence of malignant forms of aggression amidst the recidivist population (Kockler, Nelson, Meloy, & Sanford, 2006). Amorality Induced by Impulsivity has a significant β coefficient (β=–0.34; p<0.05) on the third level of this regression analysis too (Table 5), which may suggest that penal recidivists might have good impulse control. However, zero order correlation between this Amorality factor and the criterion measure is not significant (r=.10; p>0.05). This is the reason why the possible role of Amorality Induced by Impulsivity in the explanation of penal recidivism was not explored further.

GENERAL DISCUSSION

Data obtained in two analyses performed in the first study produced very similar results: psychopatic tendencies are the best predictor of both types of criminal recidivism in the sample of perpetrators with lower intensity of criminal behavior. This is particularly true for the factor of Antisociality. The only trait that exhibited some predictive ability is low Agreeableness, but again, Antisociality proved to be more successful predictor (Table 1). These results unambiguously contribute to the large number of empirical findings that testify to the ability of psychopathy traits to predict criminal behavior and criminal recidivism (Andrews, Bonta, & Wormith, 2006).

However, the situation became more complicated when the same analyses were performed in the sample of inmates characterised by the abuse of alcohol

and drugs and higher intensity and variety of criminal behavior. This change in the structure of the predictors has a certain pattern. In the prediction of less rigorous type of recidivism, milder forms of Amorality join Antisociality as the most important predictors. But when the more rigorous type of recidivism was predicted, more severe forms of Amorality, together with Disintegration of regulative functions, revealed themselves as important predictors. This is the only situation where Antisociality was not found to have significant contribution in the explanation of recidivism. However, this is incongruent with past studies that were rather consistent about psychopathy being particularly strongly correlated with violent and brutal behavior (Laurell & Daderman, 2005). Therefore, these findings demonstrate that *Amorality sustained by brutality* – and not psychopathy – is the variable that most successfully explains stable criminal behavior, if we speak about criminals characterized by abuse of psychoactive substances, a comparatively earlier start of criminal activity and a more pronounced intensity of criminal behavior. The presence of Disintegration in this set of predictors confirmed the role of pro-psychotic traits as predictors of stable criminal behavior, especially in more serious crimes (Heaven et al., 2004). If there is a continuum of pro-psychotic and psychotic phenomena (Claridge, 2010), these findings also confirm the results about a positive correlation between schizophrenia and crime (Douglas et al., 2009). It is important to point out that recent research in neuroscience speaks about early occurrence of similar neuroanatomical dysfunctions in children who exhibit schizotypal traits (unusual perceptual experiences, social anhedonia, cognitive disorganization) and antisocial forms of behavior. These features primarily relate to dysfunctions of the amygdala and the prefrontal cortex (Naudts & Hodgins, 2006). The occurrence of these dysfunctions can be detected early in the child's development and they can be reduced by prevention programs (Raine, Mellingen, Liu, Venables, & Mednick, 2003).

Therefore, recidivism of the persons who exhibit more severe forms of criminal behavior – an early start of criminal behavior based on more frequent offences against life and limb, as well as on theft and robbery – is first of all based on various forms of Amorality. However, it is important to highlight the presence of Disintegration that, together with Amorality, becomes especially important in persons who engage in serious crimes and whose criminal behavior survives institutional treatment. Therefore, dispositions for this kind of behavior are reflected in brutal and sadistic aggression modulated by Disintegration. On the other hand, the phenomena registered by Hare's psychopathy scale probably represent deviant tactics of a broader spectrum and weaker psychopathological charge which are more present in milder forms of persistent crime, but which do not contribute substantially to the understanding of the more severe forms of criminal behavior examined in this study. These findings support the hypothesis that a qualitative distinction can be made between psychopathy and at least one factor of Amorality: the one induced by brutality. The latter could represent the very core of the personality structure that describes perpetrators of the most serious crimes: infliction of severe wounds, rape, and murder characterized by

brutality and sadism. This hypothesis will be tested shortly in a study conducted in the general prison population.

Limitations of this study and implications for future ones. The main limitation of the study is the way recidivism was operationalized and measured. Namely, the design of the study was retrospective: the targeted event (imposition of conviction or prison sentence) had happened before the dispositions supposed to cause it were measured. The negative consequences of this design were twofold: 1. There is a problem with classifying the subjects who had only one lawful conviction and no previous imprisonments. Namely, these subjects are not genuine non-recidivists, and they could be defined only as first-time offenders; 2. The causal arrow of events cannot be established adequately: only correlations between the dispositions and behavior are proven beyond doubt. The last objection could have been entirely addressed only in a prospective study (however, the former objection can be addressed only partially by a prospective design[1]). Anyway, to validate predictors identified in this study, it would be necessary to replicate their correlation with criminal recidivism in a prospective study.

Furthermore, examination of personality traits is certainly insufficient if we want to reach a comprehensive understanding of psychological determinants of criminal recidivism. Many empirical studies have demonstrated that criminal behavior is a consequence of interaction between personality and environmental conditions. It has been shown that the association between personal dispositions and crime is comparatively stronger in poor neighborhoods (Farrington, 1995), high-risk urban areas (Meier, Slutske, Arndt, & Cadoret, 2008) and families characterized by parental criminal behavior or substance abuse (Trentacosta, Hyde, Shaw, & Cheong, 2009). Identification of environmental conditions that moderate the influence of psychopathy, schizotypal, amoral and aggressive traits on crime and recidivism would by all means be of the utmost cognitive and practical interest.

Acknowledgments

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1   The reason why even prospective design cannot prevent mistaking first-time offenders for genuine non-recidivists is that no one can be sure that even those who did not transgress for a particular period of time would not do it once in the future.

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