

## Empathic capacity of delinquent convicted minors

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The psychological approach to juvenile delinquency introduced in recent years postulates “empathy impairment” as one of the origins of youth criminal behaviour. This means that in order to be cruel, people need to be unable to imagine the pain their victims experience.

To test that hypothesis, we compare a group of convicted juvenile offenders (N=43) with a control group of adolescents (N=47) on self-report and ability measures of cognitive empathy (Interpersonal Reactivity Index and Reading the Mind in the Eyes Test, respectively).

Discriminant Analysis reveals a significant difference between the two groups, most notably in the dimensions of personal distress, RMET score, and perspective taking. However, after the control for age and education, only the differences in measures of cognitive empathy remain.

Although delinquents perceive themselves as less capable of taking the vantage point of another person and, when tested, prove themselves to be inferior in perceiving emotions and facial expressions, there are no differences in self-report scores of the affective component of empathy. On the basis of these findings, we draw several practical implications concerning everyday work with delinquents.

*Key words: juvenile delinquency, cognitive and affective empathy, distress, mentalization*

Juvenile delinquency is a legal term referring to acts prohibited in adulthood, such as murder and rape, or acceptable in adults but not in minors, such as car driving, alcohol abuse, etc. This is a multifaceted phenomenon, which is caused by various factors and it requires interventions in many domains and on several levels.

Etiological considerations of delinquency include biological, social and psychological factors. Biological factors refer to genetic transmission,

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chromosome disorders and impacts of temperamental fearlessness, attention and cognitive disorders (Fonagy, Target, Steele, Steele, Leigh, Levinson, & Kennedy, 1997; Rhee & Waldman, 2002; Van IJzendoorn, 1997). The social ones emphasize the role of alienation on macro level, and the impact of economic status, family size, peer pressure, prevalence of crimes, substance abuse, mental disorders and domestic violence (Cockerham, 2000; Fonagy et al., 1997; Opalić, 2007). Psychological theories about the etiology of delinquency can be divided into several large groups, depending on whether they emphasize: 1. personality traits, 2. psychoanalytic constructs, 3. cognitive mechanisms, or 4. mechanisms of learning. The most frequently discussed psychological factors of delinquency include attachment quality, regulatory mechanisms of the self (affective regulation and mentalization), empathy and moral development (Fonagy et al., 1997; Taubner & Curth, 2013; Van IJzendoorn, 1997). It is often highlighted that empathy, or indeed the lack of it, is at the core of psychological understanding of delinquent and antisocial behavior (e.g., Baron-Cohen, 2011; Van IJzendoorn, 1997).

The relationship between empathy and delinquency was tested in many research studies that differed in methodology, results and conclusions. To begin with, there were important differences in the conceptual analyses, where empathy was defined as ability (Carr & Lutjemeier, 2005; Robinson et al., 2007), as personality trait (Baron-Cohen, 2011; Cohen & Strayer, 1996) or as phenomenon which consists of a cognitive component and an affective one (Burke, 2001; Goldstein & Higgins-D'Alessandro, 2001; Lindsey, Carlozzi, & Eells, 2001; Moriarty, Stough, Tidmarsh, Eger, & Dennison, 2001). Following this last concept, one important contemporary researcher defines empathy as “our ability to identify what someone else is thinking and feeling, and to respond to their thoughts and feelings with an appropriate emotion” (Baron-Cohen, 2011). Baron-Cohen explains: “Empathizing occurs when we feel an appropriate emotional reaction, an emotion *triggered* by the other person’s emotion, and it is done in order to understand another person, to predict their behavior, and to connect or resonate with them emotionally” (2003; emphasis in the original). It turned out somewhat difficult to conceptually disentangle cognitive empathy from the theory of mind, or, for that matter, from emotional intelligence, mentalization, or social cognition. Fonagy, Target, Steele and Steele (1998) consider cognitive empathy and theory of mind to be identical. The authors of “Reading the Mind in the Eyes Test” write that it “was conceived of as a test of how well the participants can put themselves into the mind of other person,” and they name this ability “advanced theory of mind”, also referring to it as to mentalizing, mind reading and social intelligence, and consider that it “overlaps with the term ‘empathy’” (Baron-Cohen et al., 2001, p. 241).

These conceptual issues have influenced the choice of samples and assessment tools, and, consequently, results and interpretations. In most, and particularly in the early studies, the subjects were unconvicted delinquents who attended regular schools. As a measure of aggressive and antisocial behavior the researchers used assessments by teachers or peers, and some found that children with conduct disorders had lower scores on measures of empathy

(Cohen & Strayer, 1996), while the others found that empathy was positively correlated with pro-social behavior in schools (Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou & Carlo, 2002). From the 1980s on, the studies included convicted minors incarcerated in asylum-like institutions, and they confirmed negative correlations between empathy and antisocial behavior (Ellis, 1982; Lee & Prentice, 1988). In later works, more and more adolescents from juvenile asylums were included, but the results related to the role of empathy were not unanimous (Jolliffe & Farrington, 2004). The sample sizes were often problematic as well, because many studies included 10 to 30 delinquents (with the exception of, for example, Robinson, Roberts, Strayer & Koopman, 2007, who surveyed 60 delinquents) and often unproportionally large control groups (Rice, Chaplin, Harris, & Coutts, 1994).

Baron-Cohen suggests that in persons with antisocial personality disorder the cognitive component of empathy is on the same level as in healthy controls, while the affective component is damaged. This is based on the findings that persons with the Antisocial Personality Disorder a) obtain lower scores on empathy questionnaires (Davis, 1983), b) have lower psychogalvanic activity when exposed to emotionally charged words (Blair, 1999; Blair, 1997), c) are equally good in “word/non-word” tasks with emotionally charged and neutral words, d) have disordered secretion of hormones connected to fear (Newman, Patterson, & Kosson, 1987; Flor et al., 2002), and e) have lower activation of “empathy circle”, i.e. Ventromedial Prefrontal Cortex (Raine, Buchsbaum, & LaCasse, 1997; Raine, Lencz, Bihrlé, LaCasse, & Colletti, 2000).

Finally, summing up the results of the above considered studies and of the meta-analytic study reviewing 35 papers which included self-report measures of empathy of the recruited convicted minors (Jolliffe & Farrington, 2004), we can draw the following conclusions: 1. delinquents have significantly lower levels of cognitive empathy, while correlations of lower level of affective empathy and delinquency are not as strong; 2. ability measures give more unanimous and reliable data about the correlation between empathy and antisocial behavior; 3. the Hogan Empathy Scale (HES – Hogan, 1969) and the Questionnaire Measure of Emotional Empathy (QMEE – Mehrabian & Epstein, 1972) produced stronger relationships with offence than the Interpersonal Reactivity Index (Davis, 1983); 4. the relationship between low empathy and offence was relatively strong in the cases of violent offenders, but relatively weak in the cases of sex offenders; and 5. the relationship between low empathy and offence disappears after controlling for intelligence and SES.

## **Rationale**

The aim of this study is to investigate whether convicted delinquent young adolescents differ from their peers in the capacity to empathize, precisely whether they have more problems in identifying and understanding other

people's feelings and in reacting to them properly. We have tried to take into consideration all of the above mentioned issues and offer solutions for some of the methodological limitations: 1. We have tried to gather a *representative* sample of delinquents currently *convicted* in Serbia, 2. We recruited delinquents who had committed *various types of criminal behavior*, 3. We used measures of *empathy both as trait and ability*, 4. We investigated *both components of empathy*, the affective and the cognitive, and 5. This is the first study that reports results of the *Serbian translation of adolescent version* of a widely used test for measuring emotion recognition (Baron-Cohen, Weelwright, Spong, Scahill, & Lawson, 2001).

### Method

*Participants and procedure.* Two groups of subjects were formed for the purpose of this study. The first one consisted of 43 inmates aged 15–17 from a prison for convicted delinquent minors, and the second was a control sample consisting of 47 pupils from primary and secondary schools in Belgrade, matched by age and level of education. Delinquent adolescents were tested individually or in groups of two in the rehabilitation institution in Kruševac. Ministry of Interior Affairs of the Republic of Serbia issued permission for one researcher to enter the Institution and perform the testing. The subjects were informed about the details of the study and signed the informed consent forms. They did not sign test protocols and their names did not appear in any analyses or presentations. Psychologists working in the Institution provided information about the type of criminal acts for every subject before the beginning of testing, as the researcher was not allowed to read the files. All subjects participated voluntarily, and no one refused to be tested. The same standards of anonymity and confidentiality were applied in secondary schools as well.

At the beginning of the study, the psychologist who works with inmates in the Institution informed us that 55 delinquents were intellectually capable of participating in the study. Five of those could not participate because they had run away or were currently under investigation. Further seven did not provide full data, so their questionnaires were excluded from analysis.

Because of high gender disproportion in the group of delinquents, all examinees were male (at the time of examination there were only five female inmates). Delinquents were divided into two groups related to the type of criminal behavior they had committed: violent (N=18) and non-violent, i.e. theft (N=25). In table 1 we can see mean values of age and years of education for both groups.

Table 1. *Age and level of education of delinquents and controls*

	Age				Years of education			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Delinquents	16.44	.73	15	17	7.12	1.76	2	10
Controls	15.20	1.09	12	17	8.81	1.09	6	11

Table 1 shows that convicted minors have obtained lower education levels than their peers. So, in order to control this variable, we included younger pupils in the control group. We have tried to minimize the influence of intelligence by including only the delinquents who had upon admission attained average or high achievement on IQ tests. We have sampled pupils from schools attended by children from families with lower and average SES, to match the structure of the delinquent group. Finally, we opted for professional secondary schools and not grammar schools, because most delinquents enroll such schools while in the Institution or after discharge.

Table 2 shows data concerning differences in family structure. It reveals that, before coming to the Institution, a significantly smaller number of delinquents, when compared to the controls, had lived with their mothers (67.4% vs. 95.8%,  $\chi^2(1) = 4.942$ ,  $p = .026$ ) and fathers (50% vs. 91.5%,  $\chi^2(1) = 12.171$ ,  $p < .001$ ).

Table 2. *Family structure of delinquents and controls (percentage living with...)*

	mothers	fathers	siblings	step-parents	grandparents	others
Delinquents	67.4	50.0	67.4	4.6	9.3	16.3
Controls	95.8	91.5	66.0	4.3	21.3	12.8

As this study was part of a larger research, testing took approximately two hours including breaks, during which the subjects initiated conversations with the researcher, most often about the acts they had committed and dysfunctional family communication. It was striking that delinquents had no awareness of the damage they had inflicted upon others and felt no guilt or remorse.<sup>1</sup> Their narratives were dominated by negative emotions, mostly anger and sadness, aimed at parents, and preoccupation with painful family experiences.<sup>2</sup>

The control group was tested during classes in one primary school and two secondary schools in Belgrade. In each of the schools, managements permitted the study to be conducted, parents were informed, and every child was introduced to rules of confidentiality and anonymity, and signed the informed consent form. Filling out the measures took about one hour in the sixth and eighth grades, and 45 minutes in the second and third grades of secondary schools. The students expressed a satisfactory level of motivation and wish to receive feedback about the purpose of the study and results of their group.

*Instruments.* Two instruments were used to measure empathy. Reading the Mind in the Eyes Test (henceforth, RMET) version for children and adolescents (Baron-Cohen, Wheelwright, Spong, Scahill, & Lawson, 2001), was used to measure the cognitive component of empathy. The test consists of 28 photographs of human eyes and multiple-choice answers for each. Subjects are asked to decide which of the four given words best describes thoughts and feelings of persons presented in the photographs. There are only few studies utilizing child and adolescent version of RMET internationally (Baron-Cohen et al., 2001), and therefore the reliability and validity data are yet to come. The adult version, itself used in hundreds of studies, did not show consistently high reliability – it varied from very low to good and satisfactory.

Even though there are some disagreements among authors about usefulness and validity of this test, there are many studies with different clinical samples which have used RMET and investigated empathy in people with Antisocial Personality Disorder (Richell, Mitchell, Newman, Leonard, Baron-Cohen, & Blair, 2003), Asperger Syndrome (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997), Borderline Personality Disorder (Fertuck, Jekal, Song, Wyman, Morris, Wilson et al., 2009), etc. Validity of the test has been confirmed by neuropsychological and

- 1 For instance, one 16-years-old boy said during the interview: *They ask me 'How come you are not sorry for those people?' Why should I be? Is anyone sorry that I am here because of them? Has anyone ever been sorry for me? I will tell you – no! And those guys deserved what they got. As a matter of fact, you should thank me.*
- 2 The other subject, convicted of murder, spontaneously said: *I stood aside and watched how my father was teaching that kid how to repair a car. I don't care that he was trying to impress the kyd's mother – he never taught me anything. I just went mad and ran onto the street. I was alone – as always, I didn't know what to do, where to go, and just bumped into that old woman and ... I said to myself 'Now he will have to pay attention.' He has never come to visit me.*

biological studies (Chapman, Baron-Cohen, Auyeung, Knickmeyer, Taylor, & Hackett, 2006). Although the test has so far been translated in more than ten languages and we did not have a better ability measure of empathy at our disposal, one should be careful and take the results cautiously before the test's psychometric properties are thoroughly studied.

Although the HES and the QMEE have so far proved to be better measures for use with delinquents, we decided to use The Interpersonal Reactivity Index (IRI), because it was the only one already translated and utilized in Serbian (Dimitrijević, Hanak, Vukosavljević-Gvozden, & Opačić, 2012). Additionally, we did not want another new and unvalidated measure alongside RMET, and IRI is one of the most frequently used empathy questionnaires, applied to many different samples (Guttman & Laporte, 2000; Dolan & Fullam, 2004; Jolliffe & Farrington, 2004). IRI is a self-report scale designed to measure both cognitive and emotional components of empathy (Davis, 1983). It consists of four subscales: perspective taking (IRI-PT), fantasy (IRI-FS), empathic concern (IRI-EC), and personal distress (IRI-PD). IRI-PT scale measures the tendency to take another's point-of-view, akin to the theory of mind. IRI-FS scale measures the tendency to identify with fictional characters. IRI-EC items relate to feelings of empathy toward others, and IRI-PD addresses the tendency to experience distress in stressful situations. One should bear in mind that although this is a very frequently used empathy questionnaire, there are claims that it includes constructs which are not part of empathy, but at best its correlates. IRI-PT and IRI-EC, which represent cognitive and affective empathy, respectively, are seen as true empathy measures, and will be in the focus of this study as well (for more details about scales and concepts see Dimitrijević et al., 2012). Participants are asked to express their own degree of agreement with 28 items on a 5-point Likert-type scale.

## Results

Data were analyzed in Statistical Package for the Social Science (SPSS).

Cronbach's alpha for the IRI scale is .819 in controls, and .754 in delinquents, while reliabilities of the four 7-item subscales range from  $\alpha=.650$  for IRI-PT, to  $\alpha=.713$  for IRI-EC. Reliability of RMET is not as good. Cronbach's alpha is .558 in the control group, and .624 in the group of delinquents. We have also calculated correlations between RMET and IRI on the total sample, but there were no significant relationships, which was also the case in both subsamples (see Table 3).

Table 3. *Correlations of empathy measures*

	1	2	3	4	5
RMET					
IRI-PT	-.010				
IRI-PD	-.086	.185			
IRI-FS	.011	.363**	.081		
IRI-EC	-.095	.422**	.296**	.255*	

As hypothesized, Canonical Discriminant Analysis has confirmed the existence of significant difference between delinquents and controls on measures of empathy ( $r=.521$ , Wilks' Lambda=.729,  $\chi^2(5)=27.063$ ,  $p<.001$ ). In the matrix of structure (see Table 4), we can see that the major distinction between the groups is made by IRI-PD and RMET, while IRI-FS and IRI-EC have no influence on

group classification. Using both measures of empathy, we can correctly predict group membership in 74.4% cases, equally well in both groups.

Table 4. *Structure matrix*

	Function
IRI-PD	-.601
RMET	.466
IRI-PT	.395
IRI-FS	.078
IRI-EC	-.004

Because of the RMET’s lower reliability, Canonical Discriminant Analysis was performed again with only the IRI subscales. Discriminant function turned out to be significant ( $r = 0.460$ , Wilks’ Lambda = 0.788,  $\chi^2(4) = 20.483$ ,  $p < .001$ ), with IRI-PD bringing the highest, and IRI-FC and IRI-EC no saturation. Correctness of prediction is 70% of the subjects, while it is now lower in the group of delinquents (65.1%) than when the RMET was included as well.

In Table 5 we see descriptive measures and results of ANOVA for IRI scales and the test of cognitive component of empathy. Delinquents are inferior on IRI-PT and RMET and score higher on IRI-PD. Eta squared is above .10 for IRI-PD, which is in accord with the data of Discriminant Analysis given above.

Table 5. *Descriptives and ANOVA results of IRI scales and RMET in delinquents and controls*

IRI scales / group		Mean	SD	F	p	Eta <sup>2</sup>
IRI-PT	Delinquents	1.97	.73	5.121	.026	.055
	Controls	2.30	.66			
IRI-PD	Delinquents	2.06	.68	11.832	.001	.119
	Controls	1.57	.65			
IRI-FS	Delinquents	2.24	.79	.201	.655	.002
	Controls	2.31	.63			
IRI-EC	Delinquents	2.44	.78	.001	.98	.000
	Controls	2.43	.55			
RMET	Delinquents	17.88	3.76	7.129	.009	.075
	Controls	19.79	2.98			

In order to delineate the influence of age and education from that of the group participation, we performed MANCOVA test with years of age and years of education as covariates (see Table 6). The results show that the only significant factor now is the group participation, but that it differentiates the members only on RMET and IRI-PT scales, with more modest effect sizes. Although age and education did not turn up to be significant predictors, the age correlates significantly with IRI-PD ( $r = .367$ ,  $p < .001$ ).

Table 6. MANCOVA results of IRI scales and RMET

Column1	Scale	F	p	Eta <sup>2</sup>
Age	RMET	3.704	0.058	0.041
	IRI-PT	1.812	0.182	0.021
	IRI-PD	3.747	0.056	0.042
	IRI-FS	1.024	0.314	0.012
	IRI-EC	2.403	0.125	0.027
Years of education	RMET	0.812	0.370	0.009
	IRI-PT	0.638	0.427	0.007
	IRI-PD	0.148	0.702	0.002
	IRI-FS	0.156	0.694	0.002
	IRI-EC	0.024	0.878	0
Group	RMET	4.685	0.033	0.052
	IRI-PT	5.285	0.024	0.058
	IRI-PD	0.831	0.364	0.010
	IRI-FS	0.340	0.561	0.004
	IRI-EC	0.646	0.424	0.007

There were no significant differences between adolescents who performed violent and non-violent types of criminal acts, using Kruskal-Wallis test for small samples: IRI-PT ( $\chi^2(1) = .815$ ,  $p = .367$ ), IRI-PD ( $\chi^2(1) = .257$ ,  $p = .612$ ), IRI-FC ( $\chi^2(1) = .903$ ;  $p = .342$ ), IRI-EC ( $\chi^2(1) = 1.126$ ;  $p = .289$ ), and RMET ( $\chi^2(1) = 1.104$ ,  $p = .293$ ).

### Discussion and conclusion

The instruments we have used vary in reliability. While IRI had satisfactory internal consistency, which can be considered acceptable for scientific purposes and corresponds to those from the earlier studies (Pulos, Elison, & Lennon, 2004), RMET showed lower reliability. As we are here reporting the results of the first application of the adolescent version in Serbia, it is impossible to say more about the real reason(s) for the only questionable reliability. Comparing the descriptives of our sample with those in the latest studies that have used the adult RMET version, we see that both the percentage of correct answers (65–67%) and the reliability values were on the same level as here (Hunefeldt, Laghi, Ortu, & Belarinelli, 2013; Muller, Simion, Reviriego, Galera, Mazaux, Barat, & Joseph, 2010; Vellante, Baron-Cohen, Melis, Marrone, Petretto, Masala et al., 2012).

It is also important to note that there were no significant correlations between the ability and self-report measures of empathy in either of the samples, not even between the RMET and IRI-PT, the most cognitive among the IRI subscales. This result corresponds to what was found in other similar studies



(e.g., Muller et al., 2010). The reason for that can, again, be in the low reliability of the RMET, but it could also be the evidence that adolescents' representations of their capacities and reactions do not match well with their real abilities, giving one further proof that introspection requires maturation and is far from being flawless in the young.

The results are showing that there are significant differences in empathic capacity between convicted juvenile delinquents and their peers. One significant discriminant function correctly classifies 74.4% subjects, equally correctly in both groups, when it is comprised of RMET and IRI subscales, and 70% when only the IRI subscales are applied. The most predictive among the used scales is IRI-PD, followed by RMET and IRI-PT. The other two IRI subscales do not contribute to the function significantly.

The delinquents report higher distress, seeing themselves as more tense, frightened, less efficient and less capable of staying calm when someone is hurt, as well as prone to inadequate emotion control and being flooded. These findings indicate that delinquents have lower regulation of negative emotions. Additionally, they describe themselves as having problems with taking other persons' position, thinking about others' (emotionally charged) attitudes, or having problems in interpersonal conflicts.

Results showing weaker cognitive component of empathy among delinquent boys should be taken cautiously because of the limited reliability of the instrument, although the findings are in line with the expectations: the delinquents are inferior in identifying and understanding other persons' emotions, thoughts, intentions and wishes (Fonagy et al., 1997).

There were no significant differences between the groups on the IRI-EC scale. The delinquents and their peers report with equal frequency that they feel concern and sympathy for persons in trouble, and wish to protect the weaker and endangered. This finding is not unexpected in the light of research data which show that self-report measures reveal a weak correlation of the affective component of empathy with delinquency (Jolliffe & Farrington, 2004). One can also easily think that the source of this can be social desirability. However, during the examination it did not seem that the subjects tried to present their acts in more favorable light. They talked openly about their criminal acts (see footnotes 2 & 3), which should exclude the option of social desirability. In addition, a substantial self-confidence that can be found in their responses may come from two other sources. The first is that questionnaires are not the adequate type of instruments for such a sensitive sample. The other source could be located in the subjects' inability to take other persons' positions; it contributes to their specific form of empathy expression: they do not see any of their acts as bad – they think that their acts are good as long as they are in line with their own interests.

However, when we applied MANCOVA, with age and education as covariates, this neat situation became more complicated. When subjects were matched on these two variables, the differences between groups disappeared on IRI-PD and shrunked on RMET and IRI-PT, although they remained significant. While age and education did not contribute toward group differences, they correlated significantly with IRI-PD, which can explain why the delinquents,

who were on average older than the controls, scored higher on IRI-PD. The result, however, that IRI-PD scores get higher on such a small age range should be considered carefully. Not only is it difficult to interpret correlation between age and IRI-PD on such a small age range (the subjects are 14–17 years of age, and only one is 12), but delinquents more frequently live in incomplete families, they have much weaker connections with institutions (e.g., irregular school attendance) and pedagogues informed us that the files frequently report about violence and neglect in childhood. These all may be risk factors for development of normative affective regulation and coping mechanisms. Thus, these findings require further elucidation in future research. Finally, although controlling for age and education makes differences between groups on RMET and IRI-PT smaller, these variables do not explain them completely, as group participation contributes with 5%.

We think that results obtained by these two statistical analyses, different though they may be, are not opposite to one another. Convicted minors are significantly different than their peers, both on ability and self-report measures, and there are no differences on the affective component of empathy. This finding contradicts Baron-Cohen's (2011) hypothesis discussed in the introduction, but is similar to findings from studies that used IRI and reported lower correlations with IRI-EC and more consequent findings about differences on IRI-PT (Jolliffe & Farrington, 2004).

It is possible that absence of differences between aggressive and non-aggressive groups of delinquents on the measures of empathy indicates that the source of the problem lies outside the field of quality of empathy. This means that we cannot say that persons who commit murder or rape are less empathic than those who are incarcerated for theft or pickpocketing. Although it is always possible that psychological assessment instruments are not discriminative enough, it may turn out that the lack of empathy builds predisposition for crime, but that other variables decide on the type and cruelty of the illegal act.

We believe that our results lead to important practical implications that may improve clinical practice in terms of diagnostics, prevention and treatment. We will now briefly describe some of them.

When it comes to early assessment of the risk for development of delinquency, our results suggest that psychologists need to pay particular attention to the signs of: less developed empathizing capacity, lower mentalizing motivation and capacity, as well as weaker affect regulation. It is also of great importance to develop objective measures for the assessment of these phenomena and put them at the disposal of practitioners. Besides that, it is important not to lose sight of the signs of dysfunctional family life, underdeveloped affective regulation and weaker coping resources.

As to prevention and treatment, it is obvious that interventions should be focused on building up or empowering the empathic capacity and should include both adolescents and their parents. While there seem to be no specific programs in Serbian institutions, there are several that are widely used internationally. For instance, there are versions of the Mentalization Based

Treatment for families (Asen & Fonagy, 2011) and for adolescents (Midgley & Vrouva, 2012; Zevalkink, Verheugt-Pleiter & Fonagy, 2011), where one of the preconditions is participation of all family members and the focus is exactly on what is very important for delinquents: to promote awareness of one's own and others' mental states; to strengthen self-control and the capacity to regulate one's feelings in the family context; to help family members stop using coercive and punishing educational practices (Asen & Fonagy, 2011). More recently, results of attachment and mentalization research have been used as a basis for preventive programs aimed at lowering levels of school violence and bullying. The most frequently applied among them is The Peaceful Schools Project: A Mentalizing Social System (Twemlow & Fonagy, 2006), founded on the premise that a delinquent child is symptom of a social system incapable of mentalizing.

The treatment issues also open one wider question: Is rehabilitation process meaningful without psychological interventions? Decades of research, this study included, testify to the importance of treatment programs inside the institutions and outside. Seclusion and punishment cannot bring about the necessary change, while psychological treatments aimed at increasing empathic sensitivity have repeatedly been proven effective. Likewise, return to the community can even be psychologically harmful without organized efforts at integration and rehabilitation, which must include improving empathic capacity for everyday social interactions. Thus, practical implications of our study lead ultimately to advocating overall changes in the social welfare system in Serbia.

There are two basic limitations to our study, those concerning the instruments and those related to sampling. In the first group, there is the problem with the RMET, which did not fully pass the psychometric criteria of reliability. This makes all the interpretations and conclusions less reliable than the case should be in ideal circumstances. As regards the sampling, our first problem is the absence of girls, as there were only five of them in the institution. The second issue has to do with the choice of control group. We had doubts as to which sociodemographic variables should be controlled and whether to include only children with one or no parents. Our final decision to include primary and secondary school pupils is justified by the fact that we did not study the influence of parents on their adolescent children's delinquency, but we were focused on the characteristics of the delinquents themselves.

Other than this, we opted for applying the Discriminant Analysis, although none of the instruments were reliable enough. This does not mean that we consider these instruments suitable for diagnostic assessment of delinquents or recommend their use for that purpose.

We would like to single out recommendations for future research of this topic in Serbia. It may prove possible to gather a larger sample and have a high percentage of girls in it, especially if it would be possible to include inmates of the only other institution of this kind, the one in Valjevo. In case the future researchers decide not to work in the asylum-like institutions, it would be very important to separate the delinquents from those who are under care because of their demographic characteristics (no caregivers; low SES background) and not

criminal behavior. Furthermore, it would be advisable to compare delinquents who are on parole and under custody with those incarcerated. It would also be advisable to prepare research instruments for studying empathy in children and adolescents on large representative samples, as has recently been done with adult versions of the Empathy Quotient (Dimitrijević, Hanak, Vukosavljević Gvozden, & Opačić, 2012) and the Experiences in Close Relationships-Revised (Hanak & Dimitrijevic, 2013).

Ideally, a future study would be only the first phase of test-retest follow-up of treatment efficacy aimed at enhancement of empathic and mentalizing capacities in delinquents, as we think that the current one has proved the importance of such treatment – circumstantially, but beyond reasonable doubt.

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