

## Does empathy always inhibit amorality and offending?

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Results of previous studies have been inconsistent over the role of emotional and cognitive empathy in aggressive and antisocial behavior. The aim of this study is to clarify the specific nature of the empathic profiles associated with different types of amoral behavior (induced by impulsivity, frustration and brutality), measured through self-reports. The sample consists of male prisoners who have committed violent and non-violent types of offenses (robberies and thefts) and the control group with no criminal history (N=200). Results demonstrate that general amorality which combines all three types of amoral attitudes is negatively associated both with emotional and cognitive empathy, but the association with the emotional empathy is much stronger one. On the other hand, amorality induced by frustration (characterized by resentment, dark picture of reality which justifies personal Machiavellianism) is positively associated with cognitive empathy which might be used for manipulation. These results provide guidelines for empathy trainings for offenders, highlighting the significance of increasing emotional empathy

*Keywords:* emotional empathy, cognitive empathy, amorality, offending

Empathy is an ability that enables us to resonate with feelings of others, to understand the way they see themselves and other people and to make sense of their behavior. It is a significant factor in prosocial behavior and moral judgment (e.g., Eisenberg, 2000; Hoffman, 2000), while its deficits influence the occurrence of aggressive behavior and offending (e.g., Jolliffe & Farrington, 2004). It is a “glue of the social world, drawing us to help others and stopping us from hurting others” (Baron-Cohen & Wheelwright, 2004, p. 163).

In order to reduce recidivism, interventions aimed to increase empathy are included in a large number of programs for prisoners convicted of sexual assaults, robbery and murder (e.g., McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010;

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*Acknowledgement:* This study was supported by Ministry of Education, Science and Technological Development, Republic of Serbia (179018)

Mulloy, Smiley, & Mawson, 1999). Yet, despite the great popularity of these interventions, it is still unclear how effective they are (e.g., Day, Casey, & Gerace, 2010). Some authors are also concerned whether the teaching perspective-taking skills to those who commit antisocial behavior (especially psychopathic offenders) may result in their use to further manipulate or hurt victims (Day, Howells, Mohr, Schall, & Gerace, 2008). Before we are able to resolve the question of whether or not the empathy training should be recommended for some prisoner, it is necessary to have a clearer idea of the relationship between a lack of empathy and offending. Studies provide contradictory data – some of them emphasize deficits in emotional empathy (e.g., Blair, 2005), other put more emphasis on deficits in cognitive empathy (e.g., Joliffe & Farrington, 2004) and some argue that there is a weak connection between both types of empathy and aggression (Vachon, Lynam, & Johnson, 2014).

The aim of this study is to clarify the specific nature of the empathic profiles associated with different types of amoral behavior. Since we are using a measure of amorality which reliably discriminates between three sources of amoral behavior – amorality induced by impulsiveness, frustration and brutality (Knezevic, Radovic, & Perunicic, 2008), we expect to obtain a nuanced picture of the relationship between amorality and empathy.

### **Empathy and (a)moral behavior**

There are significant differences in the conceptualization of empathy. One group of researchers defined empathy as identical or similar emotional response that occurs in the empathizer while observing the state of another person (e.g., Eisenberg & Miller, 1987). Another group of researchers defined empathy as understanding of other people's feelings or thoughts (e.g., Hogan, 1969), which is often used as a synonym to theory of mind (e.g., Astington, Harris, & Olson, 1988). Proponents of integrative models claim that empathy includes both components (e.g., Davis, 1980; Baron-Cohen & Wheelwright, 2004). Important clarifications came from the contemporary neuroscience research. This kind of research suggests that emotional and cognitive empathy are controlled by different neuroanatomical and neurochemical systems (e.g. Decety, 2011; Decety & Jackson, 2004; de Waal, 2008). Emotional empathy is the phylogenetically and developmentally older system. It represents a rudimentary system of empathic processing which evolved to facilitate a variety of prosocial and cooperative behaviors including altruistic and moral behavior (e.g., de Waal, 2008; Smith, 2006). Cognitive empathy is considered a higher-order process that involves complex interpersonal judgment in addition to input from affective and episodic memory stores and is functionally subserved by a diffuse cortical network in the prefrontal and temporoparietal cortices (Blair, 2005; Decety & Jackson, 2004). It includes the ability to predict others' behaviors and develop social expertise (including lying and detecting deception) (Smith, 2006). However, although breaking empathy down into its component parts may be useful for research purposes, in reality both are *sine qua non* of a genuine empathic reaction (Shamay-Tsoory, Aharon-Peretz, & Perry, 2009).

Researchers from other fields also suggest that empathy plays an important role in moral behavior. Developmental psychologists assert that empathic behavior is primarily affective, but is transformed by the development of the cognitive system of the child (e.g. Eisenberg, 2000; Hoffman, 1987, 2000). While young children initially react with self-oriented distress to someone else's distress, during development they become more and more able to experience other-oriented empathic and sympathetic concern. Affect recognition and emotional contagion are followed by understanding another person's feelings, which further provides the basis for experiencing moral emotions such as concern and guilt. Empathic concern, guilt, or a combination of the two, provides motivation to "do good" and avoid "doing bad" (Moll & Oliveira-Sauza, 2007). These emotions function as an emotional moral barometer that provides immediate feedback related to actual or anticipated behavior (Tangney, Stuewig, & Mashek, 2007).

The process of recognition of another person's feelings which progresses towards emotional resonance and perspective taking could be impeded by many factors. These include hostile reaction toward the other person (Marshall & Marshall, 2011), psychopathic traits which hinder emotional empathy as well as implicit theories about other people or groups which hinder perspective taking (Barnett & Mann, 2013).

### **Empathy and offending**

Research has established the association between less mature levels of moral reasoning and offending (e.g., Palmer, 2003a, 2003b), including a meta-analysis of 50 studies which were made on samples of juvenile delinquents (Stams et al., 2006). The relationship between low empathy and amoral or antisocial behavior is also often invoked in criminological context. A large number of criminologists suggest that persons who commit criminal offenses have empathy deficits (e.g., Blackburn, 1993; Bush, Mullis, & Mullis, 2000; Farrington, 1998). Such persons are less capable to experience the pain and distress caused by their behavior and less capable to understand the emotional states of others which would, otherwise, inhibit destructive behavior or prevent similar behavior in the future.

However, four meta-analyses that summarize a large number of studies provide contradictory data about the association between empathy and offending. The first of them, conducted on a sample of 43 studies that defined empathy only in emotional terms and assessed it in many different ways (by questionnaires, physiological measures, visual materials, etc.), shows that empathy has a significantly low to moderate negative correlation with aggressive and antisocial behavior (Miller & Eisenberg, 1988). The second meta-analysis (Jolliffe & Farrington, 2004) identified 35 studies which investigated the relationship between lack of empathy and criminal offending. Empathy was operationalized as responses to questionnaire measures of empathy (both cognitive and emotional), while offending was operationalized as delinquent or criminal behavior, measured

by official records. The results indicated a negative relationship between empathy and offending, especially the violent one. This relationship was significantly stronger for cognitive empathy than for emotional empathy. Replication and extension of this meta-analysis confirmed the previous results (van Langen, Wissink, van Vugt, Van der Stouwe, & Stams, 2014). Finally, the most recent meta-analysis of the relationship between empathy and aggressiveness, conducted on a sample of 86 studies, provided an unexpected conclusion – both types of empathy poorly predict aggression (Vachon et al, 2014).

Significant part of the confusion stems from the differences in the conceptualization of empathy and the different ways used in its assessment – some of the studies used experimental design, some self-reports etc. Besides, self-reporting instruments show many shortcomings. For example, Hogan Empathy Scale (Hogan, 1969), the most commonly used instrument of cognitive empathy before 2000, uses a true/false design which significantly reduces the variability in responses and artificially increases correlations of cognitive empathy and aggressive or antisocial behavior (Jolliffe & Farrington, 2004).

In order to improve the measurement of empathy, the authors of two of these four meta-analyses constructed new questionnaires that measure both emotional and cognitive component of empathy. Jolliffe and Farrington (2006a) developed and validated Basic Empathy Scale (BES) using the sample of children and adolescents. Contrary to the findings of their meta-study (Jolliffe & Farrington, 2004), studies conducted with the new scale show that deficits in emotional empathy are more significant for offending (Jolliffe & Farrington, 2007) and bullying (Jolliffe & Farrington, 2006b, 2011) than deficits in cognitive empathy. On the other hand, Vachon and Lynam (2013) constructed the Affective and Cognitive Measure of Empathy (ACME) arguing that it is important to include items concerning maladaptive manifestations of low empathy, such as callous disregard for the feelings of others, lack of remorse for the misery caused by one's actions etc. The preliminary research shows that the scale which is based on the broadened concept of emotional empathy predicts aggression far better than previous empathy measures (Vachon et al., 2014).

### **Empathy and psychopathy**

According to many authors, empathy deficits are a central component of the concept of psychopathy, a constellation of traits which is linked to an increased likelihood of criminal behavior (e.g., Hare, 1991). Namely, presence of psychopaths range from 20–30% in the population of offenders (Edens, 2006; Hare, 1993). These persons are more violent and more likely to recidivate than non-psychopaths (e.g., Pedersen, Kunz, Rasmussen, & Elsass, 2010). Psychopathy is operationalized in a very thorough way in Psychopathy Checklist-Revised (PCL-R; Hare, 2003), the most commonly used scale in the research on psychopathy, which contains two factors. The first one is interpersonal-affective factor which further divides into interpersonal style (e.g. manipulation) and affectivity (e.g. lack of empathy). The second one is antisocial lifestyle

factor which further divides into impulsive-irresponsible lifestyle and antisocial behavior (e.g., Hare, 2003; Hare & Neumann, 2005).

Psychopathy is not a discrete category, but a continuous trait that is more or less present among all people (e.g., Edens, Marcus, Lilienfeld, & Poythress, 2006; Guay, Ruscio, Knight, & Hare, 2007). Self-Report Psychopathy Scale (SRP-II) distinguishes four factors of the forensic instrument PCL-R in non-forensic samples (Williams, Paulhus, & Hare, 2007), although with a bit different labeling of the factors. In non-forensic, nonclinical samples, psychopathy is usually assessed together with Machiavellianism and narcissism – three overlapping constructs which constitute the Dark Triad (Paulhus & Williams, 2002).

The significance of deficits in emotional empathy in psychopathy have been effectively demonstrated on clinical (e.g., Blair, 2005; Dolan & Fullam, 2004) and nonclinical samples (e.g., Ali, Amorim, & Chamorro-Premuzic, 2009; Mahmut, Homewood, & Stevenson, 2008). The Dark Triad also shows strong negative relationship with emotional empathy and weak negative relationship with cognitive empathy (Wai & Tiliopoulos, 2012). However, findings generally suggest that persons with psychopathic traits don't have deficits in the theory of mind/cognitive empathy (e.g., Richell et al., 2003). Some indicate that these persons are even more efficient in "reading" others' minds by being better at detecting deception (Lyons, Healy, & Bruno, 2013) and vulnerability of other persons (Book, Quinsey, & Langford, 2007). Yet, there are some indices that psychopathy is inversely associated with empathic accuracy performance for some types of emotions (e.g., Brook & Kosson, 2013).

### **The current study**

The aim of this study is to clarify the specific nature of the empathic profiles associated with different types of amoral behavior. For the evaluation of amorality, we have used the Amorality scale that reliably distinguishes three types of amorality (Knezevic et al., 2008). Amorality induced by impulsivity is manifested by poor impulse control, frustration intolerance and the need for immediate satisfaction of urges. Amorality induced by frustration is manifested by resentment and a dark picture of reality which rationalize personal manipulation and Machiavellianism. Amorality induced by brutality is manifested by sadistic, brutal and destructive behaviors. Amorality scale is associated with negative poles of Conscientiousness and Agreeableness of the five-factor model of personality and with the negative pole of Honesty-Humility of the six-factor model of personality (Medjedovic, 2011). The scale has significant contribution in the prediction of all four aspects of subclinical forms of psychopathy on Self-Report Psychopathy Scale (SRP-II), above and beyond HEXACO traits (Medjedovic, 2011). Besides, the scale predicts criminal recidivism (Medjedovic, Kujacic, & Knezevic, 2012a, 2012b). It also proves to be resistant to socially desirable answers (Perunicic & Knezevic, 2007).

Given the problems related to the quality of instruments of empathy that have significantly affected previous results, we selected two instruments of

empathy that include both emotional and cognitive component. The first one, Index of Interpersonal Reactivity (IRI; Davis, 1980, 1983) is probably the most commonly used empathy instrument during previous decades. For example, it was used in more than 60 studies in a meta-analysis of the relationship between empathy and aggressiveness which included 86 studies (Vachon et al., 2014). The other one, Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004) is a contemporary instrument with better psychometric properties than IRI, in the research conducted in our country (Dimitrijevic, Hanak, Vukosavljevic-Gvozden, & Opacic, 2012) and abroad (e.g., Lawrence, Shaw, Baker, Baron-Cohen, & David, 2004). Although constructed primarily for clinical purposes, it is also used in the context of offending (e.g., Domes, Hollerbach, Vohs, Mokros, & Habermeyer, 2013) and the Dark Triad (e.g., Wai & Tiliopoulos, 2012).

Due to its prevalence, we decided to focus our attention on the most common types of criminal offenses – thefts and robberies (including armed ones), the latter being classified both as property and violent crimes (Matthews, 2002). These types of crimes range from 1<sup>st</sup> to 3<sup>rd</sup> place on the lists which include all types of crimes that citizens experience in Serbia (TNS Medium Gallup, 2013). Breaking the law for the purpose of personal gain, without regard for those who are injured or harmed by such gain, indicates the lack of empathy for the victims' suffering (Jolliffe & Farrington, 2004). So, we have hypothesized that offenders have more prominent all types of amorality than non-offenders and, also, lower emotional and cognitive empathy.

Amorality is a continuous trait that is more or less present among all people. Therefore, we have hypothesized that all types of amorality are negatively related to emotional and cognitive empathy, but that the relation of emotional empathy and amorality is the stronger one. This hypothesis is based on several findings. For decades developmental psychologists have asserted that emotional empathy is negatively associated with antisocial behavior (e.g., Miller & Eisenberg, 1988). Divergent trends in contemporary research converge in the same direction too. Recent neuroscience research indicates that emotional empathy has facilitating role in altruistic and moral behavior (e.g., de Waal, 2008; Smith, 2006). Studies conducted with new, psychometrically improved empathy scales – BES and EQ show that deficits in emotional empathy are more strongly associated with offending (Jolliffe & Farrington, 2007) and the Dark Triad (Wai & Tiliopoulos, 2012), than deficits in cognitive empathy. Finally, contemporary research concerning empathy deficits in psychopathy cleared up that deficits in emotional empathy are more present than deficits in cognitive empathy (e.g., Blair, 2005).

## **Method**

### **The sample and procedure**

The sample consisted of 200 males, 100 were offenders (51 arrested for the offense of theft and 49 for the offense of robbery, including armed ones) and 100 were non-offenders. Age of the respondents ranged between 19 and 40 years ( $M = 26.79$ ,  $SD = 5.09$ ). Almost

half of the respondents graduated from high school (47%). There were no differences between groups by age ( $t(198)=-1.06$ , non significant) and educational level ( $h^2=5.85$ ;  $df=4$ ; non significant). The population of offenders was taken from the Penitentiary facility of Požarevac-Zabela. Population of non-offenders was taken from the Criminal Police Academy and a private transport company. The survey was anonymous. The participants were told that there were no positive or negative consequences associated with their scores on measures of amorality and empathy. All the participants have signed their written informed consent and the obtained data have been kept confidential. The study protocol was approved by The Ministry of Justice Administration for Enforcement of Penal Sanctions.

## Measures

**Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004).** It contains 40 empathy items and 20 filler items. Although the authors intended to create a measure of global empathy, a lot of studies found a three factor solution, which includes cognitive empathy, emotional reactivity and social skills (e.g., Dimitrijevic et al., 2012; Lawrence et al., 2004). A Principal Component Analyses followed by Promax rotation with Kaiser Normalization of EQ was conducted in this study. According Horn's parallel criterion (Horn, 1965), the same three factors were extracted: Cognitive empathy, Emotional reactivity and Social skills. High scores on the Cognitive empathy factor indicated high empathy, while high scores on other two factors indicated low empathy. To achieve easier and uniform interpretation of the results we have recoded the items of the Emotional reactivity factor and Social skills factor in order to be oriented toward the high empathy. Cognitive empathy (CE) reflects the appreciation of others' affective states ("I can tune into how someone else feels rapidly and intuitively") including detecting deception and prediction of the others' behavior, so it makes the overall impression of "mind reading". Emotional reactivity (ER) reflects the tendency to have an emotional reaction in response to others' emotions and mental states ("Seeing people cry doesn't really upset me") and may be indicative of insensitivity toward others. Social skills (SS) reflects the sensitivity to others' feelings of distress in social situations ("I can't always see why someone should have felt offended by a remark") and may be indicative of a lack of sensitivity to others' needs. Reliability estimates of EQ are above .90 (Baron-Cohen & Wheelwright, 2004). In this study, reliabilities of factor scores are high for Cognitive empathy ( $\beta=.899$ ) and for Emotional reactivity ( $\beta=.863$ ), but lower for Social skills ( $\beta=.599$ ). Table of EQ Factor structure is given in the Appendix.

**Index of interpersonal reactivity (IRI; Davis, 1980, 1983).** It contains 28 items divided in four 7-item subscales: Perspective taking (PT), Fantasy (FS), Empathic concern (EC), and Personal distress (PD). PT scale measures the tendency to take another's point-of-view, akin to the "theory of mind" (e.g., "I sometimes try to understand my friends better by imagining how things look from their perspective"). FS scale measures the tendency to identify with fictional characters (e.g., "When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me"). EC scale reflects emotional reactivity and compassion toward others (e.g., "When I see someone being taken advantage of, I feel kind of protective towards them"), and PD scale addresses the tendency to experience distress in stressful situations (e.g., "Being in a tense emotional situation scares me"). Internal reliabilities range from .68 to .79 (Davis, 1980). In this study, reliabilities of subscales were much lower: EC ( $\alpha=.56$ ), PT ( $\alpha=.54$ ), FS ( $\alpha=.67$ ), PD ( $\alpha=.58$ ).

**Amorality scale AMORAL-15 (AMRL; Knezevic et al., 2008).** It contains 187 items purported to measure three basic sources of amoral behavior: amorality induced by impulsiveness, frustration and brutality. Each of these factors consists of five subscales. Amorality induced by impulsivity consists of Impulsivity, Low controlled impulsivity, Weak socialization, Hedonism, and Laziness. Amorality induced by frustration consists of

the Projection of amoral impulses, Stubbornness, Machiavellianism, Resentment modulated by frustration, and Anthropological pessimism. Amoral-ity induced by brutality consists of Sadism, Rationalization of brutality, Brutal hedonism, Resentment modulated by brutality, and Passive amoral-ity. In this study we had only analyzed the scores on Amoral-ity factors. Internal reliabilities of scores range from .91 to .95 (e.g., Medjedovic et al., 2012a). In this study, reliability estimates for the scores were also very high: for the Amoral-ity induced by impulsivity  $\alpha = .96$ , for the Amoral-ity induced by frustration  $\alpha = .97$  and for the Amoral-ity induced by brutality  $\alpha = .97$ .

## Results

The t test and the multivariate technique of Canonical discriminant function (CDF) were conducted to investigate whether the two groups of the participants (prisoners and control) differ on measures of amoral-ity and empathy. The Pearson's and Canonical correlations analysis were performed in order to understand the relationship between amoral-ity and empathy variables. Data were analyzed in statistical package the SPSS 20 for windows.

Table 1 presents the means and the standard deviations of the total scores of the three factors of the AMRL-15, factors of IRI and EQ for both groups (control and prisoners). In addition, the t-test and its significance are given. The means for the Amoral-15 of the total sample are slightly lower, but broadly consistent, with their respective means of the normative sample (Knezevic et al., 2008). The means for the IRI are pretty consistent with their respective means obtained in the research conducted in Serbian sample using IRI (Milojevic & Dimitrijevic, 2014). Three factors of EQ have been extracted, which have already been extracted in previous research (e.g., Dimitrijevic et al., 2012; Lawrence et al., 2004). The results of the t-test showed that two groups differ significantly in all variables except in Cognitive empathy, Social skills, Personal distress and Fantasy.

Table 1

*Means, Standard deviations, corrected univariate differences between groups and estimated effect size for AMRL -15, EQ and IRI*

	Subsample				t	p	Partial Eta Squared
	Control		Prisoners				
	M	SD	M	SD			
AMRL-15-Impulsiveness	1.76	.49	2.28	.73	-5.92	.00	.15
AMRL-15-Frustration	2.79	.67	3.22	.83	-3.98	.00	.07
AMRL-15-Brutality	1.77	.55	2.29	.79	-5.43	.00	.13
EQ-Cognitive empathy	-.01	.93	.01	1.07	-.14	.89	.00
EQ-Emotional reactivity	.32	.82	-.32	1.06	4.70	.00	.10
EQ-Social skills	-.06	.87	.06	1.10	-.81	.42	.00
IRI-Perspective taking	2.60	.58	2.32	.66	3.20	.00	.05
IRI-Personal distress	1.39	.63	1.54	.70	-1.59	.11	.01
IRI-Fantasy scale	2.16	.78	2.18	.75	-.16	.87	.00
IRI-Empathic concern	2.64	.59	2.25	.71	4.18	.00	.08



The total discriminative power of all applied instruments is tested by Canonical discriminative analysis. One significant Canonical correlation has been extracted (.482;  $p < .001$ ). The structure of discriminative function (CDF) is presented in Table 2. Variables are ordered by absolute size of pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions (CDF). The highest correlations with canonical discriminative function have factors of AMRL–15 Impulsiveness and Brutality, followed by Emotional reactivity from EQ and Empathic concern from IRI.

To test the stability of obtained canonical discriminative coefficients bootstrapping method on 1,000 subsamples was applied (for more details see Dalgleish, 1994; Efron, 2000; Puric & Opacic 2013; Yu, 2003). Percentile based 95% confidence – interval was calculated. The results have shown that only two variables – Impulsiveness and Cognitive empathy have 95% confidence interval that not contain zero. All other variables could be considered as the variables that have no incremental predictive power. The reason for this could be high correlations between predictors, especially factors of AMRL–15.

Table 2  
Content of discriminative function (CDF) of AMRL–15, EQ and IRI

	f	w	Bias	Std. Error	Bootstrap 95% Confidence Interval	
					Lower	Upper
AMRL–15-Impulsiveness	.77	.66	-.06	.25	.12	1.03
AMRL–15-Brutality	.69	.27	-.00	.26	-.25	.76
EQ-Emotional reactivity	-.60	-.10	.02	.24	-.50	.41
IRI-Empathic concern	-.53	-.36	.04	.22	-.69	.17
AMRL–15-Frustration	.51	-.23	.03	.25	-.69	.29
IRI-Perspective taking	-.42	-.25	.03	.18	-.55	.18
IRI-Personal distress	.19	.13	-.01	.15	-.19	.40
EQ-Social skills	.10	.25	-.01	.16	-.09	.55
EQ-Cognitive empathy	.04	.52	-.04	.20	.13	.80
IRI-Fantasy scale	.02	.14	-.01	.16	-.18	.44

Note: f-pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions

w-standardized coefficients of canonical discriminative function

The factor of Impulsiveness is the most important variable for defining the CDF. Besides, the factor of Cognitive empathy has very strong suppressor effect: if participants had equal scores on all other variables, respondents with higher score on Cognitive empathy would be more inclined to criminal behavior. Distance between two groups on CDF is more than 1 standard deviation – centroid of control group is  $-.545$  and  $.550$  for prisoners group. Accuracy of classification using CDF is 71% (68% using Jack knife method). The results of classification have shown that CDF is more precise in predicting membership in the control group (79%) than in predicting membership in the prisoners group (69.6%).

In the next step, hypothesis that empathy and amorality are two very related constructs has been tested. Correlation matrix is presented in table 3.

Table 3  
Correlations between AMRL-15, EQ and IRI

	Impulsiveness	Frustration	Brutality	EQ-CE	EQ-ER	EQ-SS	IRI-PT	IRI-PD	IRI-FS
AMRL-15-Impulsiveness									
AMRL-15-Frustration	.73**								
AMRL-15-Brutality	.78**	.76**							
EQ-Cognitive empathy	-.16*	-.02	-.24**						
EQ-Emotional reactivity	-.63**	-.51**	-.68**	.36**					
EQ-Social skills	-.23**	-.31**	-.19**	-.05	.04				
IRI-Perspective taking	-.30**	-.19**	-.37**	.45**	.46**	-.03			
IRI-Personal distress	.27**	.18*	.28**	-.27**	-.18*	-.24**	-.22**		
IRI-Fantasy scale	.04	.091	-.062	.24**	.18**	-.09	.29**	.17*	
IRI-Empathic concern	-.31**	-.25**	-.41**	.34**	.54**	-.24**	.51**	.01	.35**

Legend: EQ-Cognitive empathy (CE), EQ- Emotional reactivity (ER), EQ-Social skills (SS), IRI-Perspective taking (PT), IRI-Personal distress (PD), IRI-Fantasy scale (FS)  
\* p <.05 \*\*p<.01

Correlations between all amoral scores are above .70, while correlations between all empathy scores are between low and moderate. The size of the correlations between factors of amorality and empathy vary, pointing to non uniform connections between these constructs. Estimated correlations have similar range as correlations obtained between two empathy instruments. The highest correlations are between amoral factors and Emotional reactivity.

Canonical Correlation (CC) analysis was performed to explore latent mechanisms of obtained correlations between two constructs. Two statistically significant pairs of Canonical components have been extracted.

Table 4  
Standardized canonical coefficients (w), canonical loadings (f) and canonical cross-loadings (cf)

Empathy scales	w1	f1	cf1	w2	f2	cf2
EQ-Emotional reactivity	.82	<b>.93</b>	.69	.04	-.21	-.08
IRI-Empathic concern	.19	<b>.52</b>	.39	.21	<b>-.34</b>	-.13
IRI-Perspective taking	.07	<b>.48</b>	.36	-.18	<b>-.49</b>	-.19
IRI-Personal distress	-.17	<b>-.38</b>	-.28	.25	.18	.07
EQ-Cognitive empathy	-.12	.27	.21	-.48	<b>-.69</b>	-.26
IRI-Fantasy scale	-.13	.03	.02	-.48	<b>-.58</b>	-.22
EQ-Social skills	.26	<b>.30</b>	.23	.60	<b>.56</b>	.21
Variance proportion		.24	.13		.22	.03
Amoral factors						
AMRL-15-Brutality	-.64	<b>-.97</b>	-.72	1.29	.11	.04
AMRL-15-Impulsiveness	-.39	<b>-.91</b>	-.68	-.01	-.18	-.04
AMRL-15-Frustration	-.04	<b>-.81</b>	-.60	-1.54	<b>-.56</b>	-.21
Variance proportion		.82	.45		.11	.02

Note: correlations above .30 are in bold

Canonical correlation between the first pair of canonical components is .747, and .379 between the second pair of canonical components. The first canonical pair consists primarily of Emotional reactivity in the set of empathy variables and all three factors of amoral which can be interpreted as a general factor of amoral. In addition to Emotional reactivity, low Empathic concern, low Perspective taking and high Personal distress from the empathy set are also associated with general factor of amoral. Canonical factor in empathy set explains 45% of variance of amoral set. In the opposite direction, general factor of amoral explains 13.4% variance in the empathy set.

The second pair of Canonical components is based on Cognitive empathy, Social skills and Fantasy in the empathy set and factor of Frustration from amorality set. Higher Cognitive empathy and Fantasy and lower Social skills are associated with higher amoral tendencies driven from frustration.

## **Discussion**

The results of this study clarified that offending and amorality are more strongly associated with deficits in emotional than deficits in cognitive empathy. They also indicate that cognitive empathy is a means of observation that can be used for quite different purposes – for amoral as well as moral acts.

The results confirm the hypothesis that all types of amorality are more prominent in the sample of offenders than in the sample of non-offenders, which is in line with previous research (Medjedovic et al., 2012a, 2012b). Yet, the results concerning the hypothesis that offenders have lower emotional and cognitive empathy than non-offenders are inconsistent – they depend on the type of the empathy questionnaire which was used. Thus, when empathy was measured by IRI scales Perspective taking and Empathic concern, the hypothesis was confirmed. It is in line with the results of many studies which used IRI as a measure of empathy (e.g., Beven, O'Brien-Malone, & Hall, 2004; Domes et al., 2013; Lauterbach & Hosser, 2007). The lack of differences between two samples on IRI scales Personal distress and Fantasy is also common – these two scales are often unable to discriminate between offenders and non-offenders (e.g., Beven et al., 2004). When empathy was measured by EQ, offenders and non-offenders differed only in Emotional reactivity, which is significantly lower in the sample of offenders. It is different from some previous results which have established that offenders and non-offenders differ on all three EQ factors (e.g., Domes et al., 2013). Yet, it is in accordance with findings that persons who reported committing any offence scored significantly lower on emotional, but not on cognitive empathy, when the empathy was measured using BES (Jolliffe & Farrington, 2007).

In short, we can conclude that differences in empathy between offenders and non-offenders are consistent only in the sphere of emotional empathy. The inconsistent results concerning cognitive empathy might be attributed to the differences between IRI-Perspective taking scale and EQ-Cognitive empathy factor. The former refers primarily to the understanding of someone else's

perspective, while the latter refers primarily to the appreciation of others' affective states (Lawrence et al., 2004). It seems also that the majority of IRI-Perspective taking scale items contain wish to put ourselves in someone else's shoes and deliberate attempts to achieve it (e.g., "I sometimes try to understand my friends better by imagining how things look from their perspective") while EQ-Cognitive empathy factor reflects the rapid appreciation of others' affective states, including detecting deception and prediction of the others' behavior, which makes an impression of more intuitive "mind reading" (e.g., "I can tune into how someone else feels rapidly and intuitively").

Additional analysis has cleared up that Amorality induced by impulsivity is the most important variable which predicts criminal offences in our study. This type of amorality is characterized by the need to satisfy impulses instantly, lack of self-control, persistence, and incapacity for hard work. It has been established for decades that these are some of the central characteristics which lead to criminal offences (e.g., Gottfredson & Hirschi, 1990; Zimmerman, 2010). Research in Serbia has also shown that Amorality induced by impulsivity predicts criminal recidivism in a sample of adolescent offenders (Medjedović et al., 2012b). Our sample consists mostly of young persons too, so the results are in line with the previous ones.

However, we obtained an intriguing result which has to be interpreted with great caution and calls for further investigation – if subjects are equal in all other variables, those who perceive themselves as persons with higher EQ-Cognitive empathy are much more prone to offending. In other words, if persons are equal in all types of amorality and emotional empathy, those who have greater confidence in their ability to quickly read another person's mind will be more prone to commit offences such as thefts and robberies. This result can be related to the concern that improving perspective taking skills of the offenders (especially psychopathic ones) may result in even more skilful manipulation and cheating (e.g., Day et al., 2008). Still, further studies have to be conducted to clarify the relationship of these variables.

Canonical correlation analysis, performed on both offenders and non-offenders, provides valuable information on the nature and characteristics of the areas where empathy and amorality are intertwined the most. The first canonical pair consists of general factor of amorality and empathic profile dominated by deficits in EQ-Emotional reactivity that makes the person immune and insensitive to the feelings of other people. Besides, empathic profile consists of low IRI-Empathic concern, low IRI-Perspective taking and high IRI-Personal distress. In short, persons with high general amorality have prominent deficits in the capacity to resonate with others' emotions and some problems in taking another's perspective as well. The high IRI-Personal distress indicate problems in emotion regulation (Davis, 1983), which means that these persons are far more focused on the reduction of their own discomfort than on the experiences of other people.

This result confirms our hypothesis that emotional and cognitive empathy are negatively related to all types of amorality, but that the relation of emotional empathy and amorality is the stronger one. The dominant role of low EQ-

Emotional reactivity, in the set of empathy variables, is consistent with the results of studies that used BES (e.g., Jolliffe & Farrington, 2006b, 2007, 2011) and with the most substantive research in this area which has highlighted deficits in emotional empathy or callous-unemotional traits as the “active ingredient” in the development of violent and antisocial behavior (e.g. Blair, 2005; Blair, Monson, & Frederickson, 2001). The result is also consistent with the finding that the Dark Triad shows high negative correlation with emotional empathy and weak negative correlation with cognitive empathy (Wai & Tiliopoulos, 2012). Finally, the result is in line with the findings that personal distress is associated with lack of empathy and antisocial behavior (Marshall & Marshall, 2011).

The second canonical pair consists of Amorality induced by frustration and empathic profile dominated by EQ-Cognitive empathy factor which reflects that the person has trust in own capacity to quickly read another person’s mind. Besides, empathic profile consists of high scores on the IRI-Fantasy scale which indicates good intellectual abilities (Davis, 1983), high IRI-Perspective taking scale which is positively associated with self-esteem (Davis, 1983), and a small amount of IRI-Empathic concern. In general, this empathic profile indicates better functioning than one which is implied in the previous canonical pair. However, it also contains low EQ-Social skills factor, which reflects lack of sensitivity to others’ needs and distress in social situations. It seems that persons with high Amorality induced by frustration are preoccupied with their own interests and are insensitive to some degree to the distress of other people in social situations.

To be able to understand this complex result we have to bear in mind that Amorality induced by frustration is characterized by resentment, dark picture of reality which justifies personal Machiavellianism and a tendency for fraud, deception etc. It is a dominant predictor of factor of interpersonal manipulation on SRP-II (which corresponds to the interpersonal style factor of PCL-R) (Medjedovic, 2011). Many other studies have determined also that persons with high Machiavellianism are prone to manipulation and deception (e.g., Austin, Farrelly, Black, & Moore, 2007). So, we can conclude that persons with prominent Amorality induced by frustration might be prone to use their high cognitive empathy to formulate strategies with which they can acquire what they want, ignoring, at the same time, others’ needs and distress in social situations. Low positive correlation between interpersonal/affective psychopathy component and cognitive perspective taking has been previously determined in community sample (Mullins-Nelson, Salekin, & Leistico, 2006). However, our results point to this correlation in a much stronger way and provide a more comprehensive picture which shows that persons who might misuse cognitive empathy are envious, resentful and have dark picture of reality (“man is wolf to man”).

In the end, we can conclude that majority of the significant results found in this paper suggest that offenders have more prominent deficits in emotional empathy than deficits in cognitive empathy. Therefore, these results provide guidelines for empathy trainings for offenders, highlighting the significance of increasing emotional empathy. Also, the results calls for caution – improving

cognitive empathy of the offenders with prominent Amoralism induced by frustration may result in even more skilful manipulation and cheating.

It is also important to note that some researchers have raised a question whether traditional empathy techniques, such as role-playing the victim at the time of the offence, writing an account of the offence from the victim's perspective and watching videotaped accounts of victims, are increasing any type of empathy in a quite efficient way. As we have already mentioned, despite the great popularity of these interventions, it is still unclear how effective they are (e.g., Day et al., 2010). Therefore, some researchers have switched their attention to the procedures designed to correct impulsive and antisocial behavior, rather than deficits in empathy (e.g., Wong & Hare, 2005). Others have directed their attention to the investigation of oxytocinergic system. It has been determined that intranasal administration of oxytocin increases emotional (but not cognitive) empathy (Hurlemann et al., 2010). Yet, these studies are still at the outset. In order to find an effective way to increase emotional empathy, far more research has to be done.

### **Limitations**

Some limitations should be taken into account. First of all, reliability coefficients of the three of four IRI scales are low. It is in line with the conclusion that psychometric properties of IRI vary to a great degree (Lauterbach & Hosser, 2007) and that reliability of this instrument is often insufficient (e.g., Beven et al., 2004). Then, in this study EQ-Social skills factor doesn't have significant correlations with other empathy factors and the reliability of this factor is low. Previous study in Serbia has also shown that it is the weakest of EQ factors (Dimitrijevic et al., 2012). Therefore, some items may need re-examination.

Besides psychometric shortcomings, empathy questionnaires are generally criticized for assessing the individuals' beliefs about their own empathy, or how they might like to be seen, which may be different to how empathic they are in reality. Therefore, future studies should include experimental paradigms that are designed to measure subjective and psychophysiological (e.g., autonomic and facial electromyographic activity) indices of affective sharing, as well as emotional recognition tasks. Finally, criminal offenses are diverse, so we cannot generalize the results we got on the sample of offenders arrested for the thefts and robberies to other criminal groups without further research.

### **Conclusions**

In conclusion, and notwithstanding the above limitations, the present study extends the research concerning the association between emotional and cognitive empathy with amorality and offending. Persons with high general amorality exhibited significant deficits in emotional empathy and smaller deficits in cognitive empathy. Therefore, this research expands the set of findings that indicate that offending and amorality are more strongly associated with deficits in emotional than deficits in cognitive empathy. This study also enhances the knowledge that persons with prominent Amoralism induced by frustration

(characterized by resentment, dark picture of reality which justifies personal Machiavellianism) might misuse cognitive empathy for manipulation. Although it is an idea that has been associated with the concept of psychopathy for a long time, there is still a small number of studies which identified the positive relationship between cognitive empathy and wider context of amorality and offending. Our results are based on self-report measures. Therefore, offending could be connected with high confidence in the capacity to read another person's mind, not with empathy which would be seen in real life situations. Using different types of measures in future research could resolve this dilemma.

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Appendix  
EQ Factor structure – Pattern Matrix after Promax rotation

	1	2	3
52 I can tune into how someone else feels rapidly and intuitively	0.828		
55 I can tell if someone is masking their true emotion	0.821		
54 I can easily work out what another person might want to talk about	0.804		
58 I am good at predicting what someone will do	0.746		
25 I am good at predicting what someone will feel	0.743		
19 I can pick up quickly if someone says one thing but means another	0.692		
36 Other people tell me I am good at understanding how they are feeling and what they are thinking	0.644		
26 I am quick to spot when someone in a group is feeling awkward or uncomfortable	0.629		
41 I can easily tell if someone else is interested of bored with what I am saying	0.621		
59 I tend to get emotionally involved with a friend's problems	0.559		
22 I find it easy to put myself in somebody else's shoes	0.552		
44 I can sense if I am intruding, even if the other person doesn't tell me	0.542		
43 Friends usually talk to me about their problems as they say that I am very understanding	0.529		
35 I don't tend to find social situations confusing	0.527		
60 I can usually appreciate the other person's viewpoint, even if I don't agree with it	0.402		
1 I can easily tell if someone else wants to enter a conversation	0.345		
32 Seeing people cry doesn't really upset me		0.743	
27 If I say something that someone else is offended by, I think that that's their problem, not mine		0.714	
48 Other people often say that I am insensitive, though I don't always see why		0.594	
39 I am able to make decisions without being influenced by people's feelings		0.591	
11 It doesn't bother me too much if I am late meeting a friend		0.548	
50 I usually stay emotionally detached when watching a film		0.531	
46 People sometimes tell me that I have gone too far with teasing		0.515	
14 I often find it difficult to judge if something is rude or polite		0.487	0.351
49 If I see a stranger in a group I think that it is up to them to make an effort to join in		0.482	
57 I don't consciously work out the rules of social situations		-0.477	
12 Friendships and relationships are just too difficult, so I tend not to bother with them		0.468	
42 I get upset if I see people suffering on news programmes		0.467	-0.382
18 When I was a child, I enjoyed cutting up worms to see what would happen		0.454	
6 I really enjoy caring for other people		0.433	
34 I am very blunt, which some people take to be rudeness, even though this is unintentional		0.403	
8 I find it hard to know what to do in a social situations	0.307	0.330	

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37	When I talk to people, I tend to talk about their experiences rather than my own		
29	I can't always see why someone should have felt offended by a remark	0.537	
21	It is hard for me to see why some things upset people so much	0.467	
15	In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking	0.451	
4	I find it difficult to explain to others things that I understand easily, when they don't understand it first time	0.426	
10	People often tell me that I went too far in driving my point home in a discussion	0.407	0.419
38	It upsets me to see an animal in pain	0.363	-0.377
28	If anyone asked me if I liked their haircut, I would reply truthfully, even if I didn't like it		

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Extraction Method: Principal Component Analysis.  
 Rotation Method: Promax with Kaiser Normalization.  
 The numbers on the left represent item number