



How dark is the personality of murderers? Psychopathy, Machiavellianism, and sadism in homicide offenders

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ABSTRACT

Dark personality traits describe amoral and antisocial behavioral dispositions and are often described by psychopathy (i.e., interpersonal, affective, lifestyle, and antisocial characteristics), narcissism, Machiavellianism, and sadism. These traits are related to various socially detrimental behavioral outcomes, including criminal behavior and delinquency. Furthermore, psychopathy is frequently related to homicide, both in scientific and in popular literature; however, the empirical data on the link between psychopathy and other dark traits with homicide is still scarce. We examined self-reported psychopathy, Machiavellianism, sadism, and the indicators of criminal recidivism (number of offences, number of lawful sentences and penal recidivism) in a sample of male homicide offenders ($N = 46$), other violent offenders ($N = 82$), and non-violent offenders ($N = 119$). The results showed that homicide offenders have less pronounced psychopathy, sadism, and criminal recidivism compared to the other two groups – the differences were particularly evident in comparison to the group of non-homicide violent offenders. There were no statistically significant differences in Machiavellianism. Our data cast a doubt on the widely acknowledged link between psychopathy and murder. The findings can be explained largely by the fact that homicide is a heterogeneous criminal offence; while it is possible that psychopathy and other dark traits may be linked to some types of homicide, this link cannot be established for homicide in general.

1. Introduction

1.1. Dark personality traits

In recent decades, there has been a growing interest in personality dispositions toward amoral and antisocial behavior. A comprehensive model of these traits is labeled as the Dark Tetrad (Međedović & Petrović, 2015; Paulhus, 2014) and encompasses traits like narcissism, Machiavellianism, psychopathy and sadism. Narcissism depicts entitlement, superiority and an inflated view of self (Raskin & Terry, 1988); Machiavellianism represents an attitude which rationalizes and justifies the use of other people for one's self interest (Christie & Geis, 1970), while sadism is based on the aberration in emotional processes where one feels positive emotions (enjoyment) when hurting others or watching others in distress (O'Meara et al., 2011). The trait that has the longest history of scientific inquiry is psychopathy – it represents a behavioral syndrome itself that consists of several narrow traits. There are various models of psychopathy, one of the most prominent is proposed by Hare and collaborators and it defines psychopathy as a

syndrome of interpersonal (egoistic and manipulative) behavior, affective characteristics (lack of emotional empathy, fear, and guilt), lifestyle characteristics (impulsiveness, lack of long-term plans, sensation seeking) and antisocial behavior (Hare & Neumann, 2008). The dark personality traits are related to various socially undesirable outcomes like cheating (Estevés et al., 2021), bullying (van Geel et al., 2017), violence (Pailing et al., 2014), and others.

1.2. Dark personality traits and criminal behavior

Since the Dark tetrad traits are based on selfishness, lack of compassion, and the tendency to manipulate or hurt others, it is not surprising that they are important predictors of antisocial behavior and delinquency (Chabrol et al., 2009; Međedović & Kovačević, 2020). The relation between dark traits and criminal behavior is mostly researched in the context of psychopathy and it is most firmly established for this trait. Psychopathy is positively related to the number of violent and nonviolent offences, substance abuse, contact with police and criminal courts, and others (Vaughn & DeLisi, 2008). It is negatively associated

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with educational levels, long-term jobs, the age of the first offence and first lawful sentence (Žukauskienė et al., 2010). Finally, there is reliable data that psychopathy can positively predict criminal recidivism (Leistico et al., 2008; Mededović et al., 2012a, 2012b; Salekin, 2008). Due to the fact that recidivists commit most criminal offences (e.g., Someda, 2009), this association has both scientific and practical implications.

1.3. Dark traits and murder - the role of psychopathy

Comprehensive taxonomies of the dark traits, including the Dark tetrad, have rarely been examined in a criminological, penal, or forensic context; hence, the research on the links between the dark traits and the type of criminal offence is still very scarce. However, there is a common belief that psychopathy is related to homicide offences, both in popular culture and media (Lilienfeld & Arkowitz, 2007) and in scientific context (Fox & DeLisi, 2019). Indeed, there is a large amount of data showing that murders committed by psychopathic individuals have some specific characteristics. For example, homicides perpetrated by individuals with elevated psychopathy are more instrumental in nature (i.e., premeditated and planned), deliberate, and to a lower level motivated by affective reactions (Woodworth & Porter, 2002). Furthermore, the data show that psychopathic murderers are more frequently not close to their victim and deny their charges (Häkkinen-Nyholm & Hare, 2009). The existing data suggests that a positive link between psychopathy and reoffending exists in homicide perpetrators as well (Laurell & Däderman, 2005). Finally, psychopathy is more pronounced in the group of offenders who have committed sexual homicides (Porter et al., 2003) and it is positively related to the criminal relapse in this group of offenders (Myers et al., 2010).

Therefore, it seems that homicide offences committed by psychopathic individuals have some specific qualities. However, is there a connection between psychopathy and murder in general - are individuals with elevated psychopathy traits more prone to commit homicide than other types of offences? The existing evidence suggests that the answer is once again positive. A recent meta-analysis showed large effect sizes of the link between psychopathy and homicide (Fox & DeLisi, 2019). However, the data is not unambiguous. There are studies that have found that psychopathy traits (i.e., lifestyle and interpersonal characteristics) are expressed to a lower extent in a group of homicide offenders compared to non-homicide repeated offenders (Sherretts et al., 2017); there were no differences between murderers and first-time non-homicide offenders in this study. The authors concluded that psychopathic traits are more likely to be found in persistent offenders (i.e., recidivists), characterized by criminal careers, than in homicide offenders.

1.4. Goals of the present study

Current empirical literature on the links between the dark traits (all but psychopathy) and homicide is quite scarce. This is in contrast with the high heuristic and practical importance of the topic: by establishing these links, personality psychologists can achieve a more in-depth understanding of the dark side of the human personality; on the other hand, forensic practitioners can achieve better understanding of the murderers' personality and provide more accurate models for predicting homicide offences. The goal of the present research is to provide a more detailed examination of the relation between the dark personality characteristics and homicide. We believe that there are three main contributions of the present study over the existing ones. Firstly, we analyzed not only psychopathy, but also Machiavellianism and sadism in homicide offenders (Narcissism unfortunately was not included in the list of variables collected in this study); the data on the two latter traits in this context are very scarce. Sadism may be especially significant in the context of homicide offences: murders are violent offences and sadism represents particularly volatile and destructive form of aggressiveness - the one which carries positive emotions as a reinforcement for

the perpetrator (Mededović, 2017). Hence, it can be assumed that sadism may be relevant in understanding personality characteristics of homicide offenders. Secondly, we compared not only homicide to non-homicide offenders in this study. Homicide is just one of the violent offences, however, it may differ from other forms of violent offences; therefore, we analyzed homicide offenders, non-homicide violent offenders and non-violent offenders. Finally, we included the measures of criminal recidivism in the study.

Our analyses were guided by several hypotheses. Note that we base our hypotheses on previous research on psychopathy in a forensic and criminological context since there are no data regarding other traits. However, we believe that the same hypotheses can be set for all examined dark traits in the context of the present research (i.e., examining the relations between dark traits, the type of offence and criminal recidivism): psychopathy (especially multidimensionally-measured psychopathy as it was assessed in the present study) shares a substantial portion of variation with other dark traits (Chabrol et al., 2009; Mededović & Petrović, 2015), and this shared variation is based on the lack of empathy and interpersonal antagonism (Dinić et al., 2021). Therefore, we expected all the dark traits to be positively related to criminal recidivism. Regarding the relation between the dark traits and homicide, two contrasting hypotheses can be made: leaning on meta-analytic results (Fox & DeLisi, 2019) we could expect that psychopathy is more highly pronounced in homicide offenders than the other two groups. On the contrary, the results of Sherretts et al. (2017) suggest that the dark traits may be less expressed in the homicide offenders compared to other groups of offenders.

2. Method

2.1. Sample

Participants in the research were convicts who were serving a prison sentence in two of the largest penitentiary facilities in Serbia: the Penitentiary Facility of Sremska Mitrovica and Penitentiary Facility of Zabela in Požarevac. The total sample size was 247; all participants were males. The mean age of participants was 36.25 years ($SD = 8.13$), while the mean education was 10.56 ($SD = 1.93$). Education was measured by the exact number of years of formal education - the obtained mean level suggests that participants had two years of secondary education on average (uncompleted high school). The sample was further divided into three groups: 1) Homicide offenders ($N = 46$); 2) Non-homicide violent offenders ($N = 82$; these individuals were convicted mostly for robbery crimes executed with the use of violence and crimes characterized by the infliction of grievous bodily harm) and 3) Non-violent offenders ($N = 119$; the participants in this group were convicted mostly for larceny, illegal property gains, and unauthorized production, possession and placing narcotic substances on the market). These three groups did not differ in the main levels of education ($F(2, 245) = 1.43$; $p > .05$) and average age ($F(2, 245) = 2.74$; $p > .05$). Only functionally literate participants were selected in the sample; the participation was voluntary.

2.2. Measures

Psychopathy was measured by the Self-Report Psychopathy scale (SRP-4; Paulhus et al., 2017). It consists of 64 items that capture four narrow psychopathy traits: Interpersonal, Affective, Lifestyle, and Antisocial (all subscales have the same number of items).

Machiavellianism and sadism were measured by AMORAL 9 inventory (Knežević, 2003; Knežević et al., 2008; Paulhus & Jones, 2014). Sadism was measured via 5 items (item example: "People who suffer because of me only increase my satisfaction") and Machiavellianism was assessed using four items (item example: "A brave man uses all means to succeed in life"). AMORAL 9 is a publicly available instrument and it can be found on this webpage: <https://osf.io/pxmrf/> (note that AMORAL 9

does not measure narcissism – this was the reason why we do not have a narcissism measure in this research). AMORAL 9 scales were shown to be reliable and valid predictors of criminal behavior in previous research (Mededović et al., 2012a, 2012b) and their positive relations with Dark triad traits are empirically documented (Gojković et al., 2019); furthermore, they are included in the recent studies of the dark core of personality (Moshagen et al., 2020) which additionally show their validity. Both SRP-4 and AMORAL 9 are self-report inventories with the five-point Likert scale for responding, where 1 denotes “Completely disagree” while 5 stands for “Completely agree”.

Finally, we measured criminal recidivism using the frequencies of three indicators: the number of criminal offences, the number of legal sentences, and the number of prison sentences the individual served (penal recidivism). These measures were taken from the participants' prison dossiers as the part of criminal behavior history.

3. Results

3.1. Preliminary analyses: descriptive statistics, reliabilities, and the correlations between examined variables

First, we showed the descriptive statistics (means and standard deviations), Cronbach's α coefficients of internal consistency as the reliability estimate, and the correlations between the analyzed measures. These data are shown in Table 1. All scales had adequate reliabilities, but sadism scale showed somewhat lower coefficient of internal consistency compared to other measures. As we can see, there were high positive correlations between the dark traits – the highest effect sizes were obtained for the correlations between the psychopathy facets. Furthermore, there were positive associations between the dark traits and recidivism indicators: Lifestyle and Antisocial psychopathy traits, together with sadism showed systemic positive correlations with criminal relapse; this stand particularly for the Lifestyle and Antisocial psychopathic traits which were associated with all recidivism indicators while sadism was positively correlated with number of convictions and penal recidivism. Interpersonal psychopathy traits were associated only with the number of lawful sentences.

3.2. The main analyses: between-group comparisons

In order to analyze the differences between the offenders with different types of offences on the dark traits and recidivism indicators, we conducted analysis of variance – the type of offence was set as the factor while the dark traits and recidivism measures were set as the dependent variables. The findings showed that homicide offenders have lower scores than violent non-homicide offenders on Interpersonal and Affective psychopathy traits. Furthermore, homicide offenders have lower scores than participants from both other groups on Lifestyle and Antisocial psychopathy traits, sadism, and all measures of criminal recidivism. The only trait which shown no significant differences between the groups was Machiavellianism. The effect sizes were relatively small: they ranged from $\eta^2 = 0.02$ for Interpersonal psychopathy traits to

$\eta^2 = 0.8$ for Antisocial psychopathy characteristics. Since the analyzed variables correlate between themselves we also run MANOVA and hence, controlled for the shared variance between the measures: results were almost completely the same as in ANOVA analysis. The differences on the multivariate composite of dependent variables were statistically significant: $F(18, 468) = 0.006$. Between-subjects effects produced the same results as previously reported; even the pairwise comparisons showed the same differences between the groups, with only one exception: homicide offenders had lower number of convictions but only compared to non-violent offenders. Hence, we can conclude that the results of the analysis are stable, even when the shared variation of the analyzed variables is accounted for. The results of these analyses are shown in Table 2.

4. Discussion

The main goal of the present study was to estimate the levels of dark traits (psychopathy, Machiavellianism, and sadism) in a sample of homicide offenders. We also analyzed two additional variables: criminal recidivism and violent vs nonviolent offences. Contrasting hypotheses were made since the existing literature suggests that murderers may have elevated (Fox & DeLisi, 2019) and decreased (Sherretts et al., 2017) levels of dark traits, compared to other offenders – these assumptions were based on levels of psychopathy (because it is the trait most frequently analyzed in a criminological context) and extended to other dark traits having in mind that all dark characteristics correlate positively between themselves. Our main analysis showed that murderers have decreased levels of psychopathy and sadism – this is especially true in the comparison between murderers and violent non-homicide offenders, but Lifestyle and Antisocial psychopathy characteristics and the sadism trait was lower in murderers compared both to other violent and nonviolent offenders. Therefore, our results are mainly in accordance with Sherretts et al., 2017 study, which found that murderers had lower levels of Interpersonal and Lifestyle psychopathy traits compared to recidivists.

4.1. Why murderers may not have a dark personality: the complexity of homicide as a criminal offence

How can we explain the obtained results? Criminal recidivism may certainly be one of the key concepts when analyzing the associations between psychopathy and murder. Psychopathy (Leistico et al., 2008; Salekin, 2008) and the dark traits in general (Chabrol et al., 2009; Mededović et al., 2012a, 2012b) are reliable predictors of criminal recidivism – hence, they represent personality dispositions toward stable and persistent forms of criminal behavior. This finding was obtained in the current study as well; our correlation analysis showed positive associations between psychopathy, sadism, and the indicators of criminal recidivism. However, murderers may not have high recidivism rates. In research that examined the criminal history of homicide offenders, it was found that a significant proportion of murderers (32,5 %) had not been convicted of other felonies 5 years prior to the murder (Cook et al.,

Table 1
Descriptive statistics, reliability coefficients, and the correlations between examined variables.

	M(SD)	α	1.	2.	3.	4.	5.	6.	7.	8.
1. Interpersonal (psychopathy)	2.62(0.68)	.82								
2. Affective (psychopathy)	2.53(0.58)	.72	.63**							
3. Lifestyle (psychopathy)	2.69(0.71)	.78	.65**	.66**						
4. Antisocial (psychopathy)	2.55(0.87)	.85	.64**	.60**	.71**					
5. Machiavellianism	3.26(1.06)	.72	.49**	.48**	.44**	.40**				
6. Sadism	1.94(0.77)	.65	.50**	.51**	.40**	.37**	.47**			
7. Number of offences	6.04(6.33)		.07	.06	.15*	.18**	.12	.10		
8. Number of convictions	3.49(2.73)		.13*	.07	.20**	.25**	.09	.19**	.62**	
9. Penal recidivism	0.93(1.20)		.04	.08	.19**	.22**	.09	.20**	.54**	.63**

Notes: * - $p < .05$; ** - $p < .01$.

Table 2
Between-group comparisons on the dark traits and recidivism measures.

	Homicide	Violent non-homicide	Non-violent	ANOVA		MANOVA	
				F	Post hoc tests	F	Post hoc tests
Interpersonal (psychopathy)	2.43(0.67)	2.73(0.67)	2.61(0.68)	2.75 [†]	H < VNH*	2.67 [†]	H < VNH*
Affective (psychopathy)	2.35(0.55)	2.63(0.47)	2.52(0.65)	3.53*	H < VNH*	3.74*	H < VNH*
Lifestyle (psychopathy)	2.37(0.64)	2.81(0.63)	2.73(0.75)	6.70**	H < VNH**; H < NV**	6.37**	H < VNH**; H < NV**
Antisocial (psychopathy)	2.05(0.69)	2.76(0.91)	2.60(0.84)	11.04**	H < VNH**; H < NV**	10.05**	H < VNH**; H < NV**
Machiavellianism	3.04(1.14)	3.36(0.99)	3.27(1.07)	1.35	/	1.74	/
Sadism	1.68(0.62)	2.00(0.79)	1.99(0.78)	3.20*	H < VNH*; H < NV*	3.18*	H < VNH*; H < NV*
Number of offences	3.38(2.43)	5.88(3.23)	7.16(8.33)	6.25**	H < VNH**; H < NV**	6.45**	H < VNH**; H < NV**
Number of convictions	2.38(1.35)	3.22(1.87)	4.10(3.38)	7.62**	H < VNH*; H < NV**	7.77**	H < NV**
Penal recidivism	0.45(0.50)	0.92(1.21)	1.11(1.33)	5.19**	H < VNH**; H < NV**	5.50**	H < VNH**; H < NV**

Notes: H - homicide; VNH - violent non-homicide; NV - non-violent.

[†] p = .066.

* p < .05.

** p < .01.

2005). In fact, this finding extends to multiple homicide offenders, where 40 % of all multiple homicide offenders had not been arrested at all before they committed murder (DeLisi & Scherer, 2006). It seems that criminal recidivism and criminal versatility exist only in homicide offenders with an early onset of criminal activity during their life course (Dobash et al., 2007). Our data is in accordance with these studies – we found that homicide offenders have the lowest levels of criminal recidivism among the three analyzed groups of offenders. If psychopathy and other dark traits are positively related to recidivism, then they may not be highly expressed in murderers, because murders are often characterized by low recidivism levels.

Recidivism is related to the type of murder as well. Homicide offences can be categorized via different taxonomies; one of them distinguishes between 1) altercation or argument precipitated offenders, 2) felony offenders, 3) domestic violence or intimate partner-related offenders, and 4) accidental offenders (Roberts et al., 2007). When the differences in recidivism between these groups of homicide offenders are analyzed it was found that recidivism rates are significantly higher among altercation and felony offenders compared to accidental and intimate partner-related offenders. In fact, felony commissions were the type of murder with the highest percentage of cases where murderer and victim did not know each other (Roberts et al., 2007). Previous research showed that psychopaths more frequently commit murders where they were not familiar with the victim (Häkkinen-Nyholm & Hare, 2009). Hence, this is the type of homicide offence that may particularly relate to the dark traits. On the other hand, dark personality characteristics may not be successful predictors of other types of homicide offences.

4.2. Explaining heterogeneous results: another turn at the Fox & DeLisi's (2019) meta-analysis

Certainly, we must pay attention to the fact that we obtained contrary results to the findings on the meta-analysis, which examined the relation between psychopathy and murder (Fox & DeLisi, 2019). First, we would like to emphasize that when analyzing the relation between psychopathy and homicide offence the appropriate comparison group should consist of individuals who have committed non-homicide criminal offences; comparing psychopathy in murderers with non-offenders would not produce the evidence that psychopathy is especially related to homicide, but to criminal behavior in general. This is the strategy we implemented in the present study similarly to our other colleagues (e.g., Cope et al., 2014; Sherretts et al., 2017). However, Fox and DeLisi (2019) did not use non-homicide offenders as the comparison group, probably because there are only a few studies that compared murderers to non-homicide offenders. They calculated effect sizes by comparing murderers' psychopathy scores with psychopathy levels obtained in the general, non-criminal population. Expectedly, they found high differences between these mean scores. Furthermore, the vast majority of the

examined studies explored very specific forms of homicide offences, which are in fact very rare in the general forensic population, like sexual murders (e.g. Hill et al., 2007; Myers et al., 2010), homicide child molesters, and murders perpetrated by schizophrenic or psychotic individuals (Laajasalo et al., 2011). There is a vast number of potential confounding variables in these types of murder, which may correlate with psychopathy, such as sadism (Myers et al., 2010), or substance abuse (Laajasalo et al., 2011). We do not know if the detected effect sizes would be held if potential confounds were controlled in a multivariate analytic design. In fact, in one of the rare studies included in the meta-analysis where non-homicide offenders were used as a comparison group, there were no differences in psychopathy between murderers and matched control participants (Cope et al., 2014). Therefore, while we agree with Fox and DeLisi (2019) that psychopathy may be more expressed in certain forms of murderers, we cannot agree that murderers in general may be characterized by elevated psychopathy, compared to other offenders.

Fox and DeLisi (2019) also analyzed only the studies that applied the rating method for psychopathy assessment (PCL-R: Hare, 2003); hence, they did not include the study of Sherretts et al. (2017), which yielded the opposite results. Self-report measures of psychopathy and other dark traits were administered in the present study as well. Hence, another source of heterogeneity in the results may be the method of assessment and this should be taken into account when estimating the association between the dark traits and murder.

4.3. Limitations and future directions

This research has several limitations. The first one is related to a relatively low sample size of a subgroup of homicide offenders. The sample size of homicide and non-homicide violent offenders decreases the power of the study – future studies would certainly benefit from higher sample sizes which could detect low effect sizes. Furthermore, the data were collected only on male participants and therefore, the findings cannot be generalized to female offenders. Another limitation refers to the fact that we did not have information regarding the type of homicide offences in our study, which seems to be quite important when analyzing the link between the dark traits and homicide. On the other hand, we probably could not collect a large enough sample size for the subtypes of murder, at least not in Serbia – countries with larger populations of convicts can more easily explore the relations between the dark traits and specific types of homicide. The reliability for the scale sadism was somewhat lower compared to other scales which may represent further limitation for the measurement of the trait sadism. Finally, future studies should attempt to assess the dark traits both via self-report and rating methods and to explore the potential discrepancy between these two types of methods. So far, this is possible only for psychopathy, so it would be fruitful to collect multimethod assessments for this trait at

least.

4.4. Conclusion remarks

The link between dark personality traits and murder as one of the most serious violent offences is very important both to social scientists and forensic practitioners. Popular view and some empirical evidence, including the results of meta-analysis (Fox and DeLisi, 2019) suggest that this link is strong and robust, at least concerning psychopathy. However, we believe that this conclusion is not supported by evidence. Murder is a complex and heterogeneous criminal offence. While we agree that the dark traits may be associated with some types of murder, we think that this link cannot be established for murder in general. Future studies with a more specific categorization of murder types and a multimethod assessment of dark personality characteristics are necessary to form a valid and precise picture of the associations between the dark traits and homicide.

CRedit authorship contribution statement

Janko Mededović: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft. **Nikola Vujičić:** Conceptualization, Data curation, Writing – review & editing.

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