Personality and Social Psychology

Vulnerable and dominant: Bright and dark side personality traits and values of individuals in organized crime in Denmark

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In this paper, we build on a robust literature on push and pull factors to focus on the personality traits and values of individuals involved in organized crime. We distinguish organized crime from other kinds of criminal activity and recruit a unique sample of non-incarcerated individuals verified by the Danish National Police to be involved in organized crime. We use comprehensive standardized psychological assessments of their big five personality traits, maladaptive dark traits and core values and drivers to compare them to an adult norm group. Danish individuals involved in organized crime are much less emotionally stable ($d = 1.84$), ambitious and self-confident ($d = 1.50$), agreeable ($d = 0.87$) and conscientious ($d = 0.65$) than the norm group. At the same time, they have substantially higher scores on all but one of the 11 dark traits (Cohen's d ranging from 0.39 to 3.10). They are characterized by a high need for security ($d = 1.14$) as well as material ($d = 0.96$) and financial success ($d = 0.81$). While these patterns fit results previously found in the criminological literature, a latent class analysis reveals two separate groups. A subset of one third of our sample had somewhat less depressed scores on the big five and more moderate scores on the dark traits, indicating more adaptive personality structures. We consider this novel finding in terms of potential exits from a milieu of organized crime.

Key words: Organized crime, personality traits, latent class analysis, dominant and vulnerable personality structure, exit strategy, gangs.

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INTRODUCTION

What traits, if any, characterize the criminal mind? From early racist and classist stereotypes of the criminal brute or the organized criminal mastermind to a modern obsession with true crime novels and television shows, folk theories abound about what makes a criminal. At the intersection of psychology and criminology, there has been an attempt to create a scientific approach to the study of what individual differences correlate and predict engagement in organized and violent criminal behavior. A substantial and robust interdisciplinary body of evidence points to different push and pull factors on the level of the individual, the social environment, and broader society (O'Brien, Daffern, Chu & Thomas, 2013). At the individual psychological level, which is the focus of this study, implicated risk factors for initial involvement in organized crime include low self-esteem, anxiety, impulsivity, and low empathy (Vize, Miller & Lynam, 2018).

However, despite a well-developed literature for a range of socio-psychological and personality factors, a limiting factor for many studies is the difficulty in accessing samples of individuals actively engaged in criminal organizations compared to the general populations from which these individuals are in some sense 'drawn.' Some of the literature focuses on those that are incarcerated or on biographical information from court transcripts and media reports (Boccio & Beaver, 2018; Denley & Ariel, 2019). This paper focuses explicitly on the personality traits of members of organized criminal organizations. It presents a unique dataset of 57 comprehensive personality profiles of officially verified members of organized criminal groups. Through comparison with a national norm and using latent class analysis, it investigates the personality traits of the big five taxonomy, potentially interpersonally problematic traits, and the psychological motives and values of individuals engaged in organized crime.

To our knowledge, this represents the most comprehensive assessment of personality traits of verified organized crime members to date in the literature. The indication of different 'classes' of members of criminal organizations has implications for crime prevention and interventions for resocialization. The following sections review the existing criminological and psychological literature on the subject and synthesize and present hypotheses regarding the organized criminal personality. The paper then goes on to test these and discusses the implications of the findings for future research and crime prevention practice such as the design of exit programs. Importantly, we do not claim that resulting psychological differences *explain* engagement in organized crime in any causal sense. There is ample evidence for the interplay between a host of factors, only one of these being the psychological makeup of the individual (O'Brien *et al*., 2013).

BRIGHT AND DARK SIDES OF PERSONALITY

Because of this paper's focus on individual psychological differences, the central question becomes the investigation of the domains where those involved in organized crime are similar and dissimilar to others engaged with a different biography. Identifying relevant existing literature and organizing hypotheses on this question involve considering what organized criminal organizations offer the individual, and why some individual

dispositions may cause an elevated risk of becoming involved with criminal organizations. The literature indicates that organized criminal groups, much like other tightly knit human collectives, offer a sense of shared social identity and shared fate or a sense of meaning and belonging to those cut off from membership to other groups in society (Kleemans & van Koppen, 2020; Mallion & Wood, 2018). Furthermore, qualitative research on the reproduction of criminal careers across generations indicate the role that social learning as well as the apparent status derived from participation in organized crime plays in driving primarily young men towards engagement (Van Dijk, Kleemans & Eichelsheim, 2019). In this sense, organized criminal groups share a space with politically extreme and politically criminal organizations and may attract similar individuals (Gøtzsche-Astrup & Lindekilde, 2019).

We review the literature on individual differences in engagement in organized crime and present our hypotheses below. We apply the distinction between adaptive personality as captured by the big five personality traits, 'dark side' personality dispositions that capture adaptively challenging and interpersonally problematic traits, and individual motives and values relating to membership of criminal organizations. This corresponds to the distinction between personality strengths that facilitates interpersonal relationships, biases or blind spots that hamper healthy relationships, and the central motives that provide energy for goal-oriented behavior (Hogan & Holland, 2003).

EXTANT LITERATURE ON PERSONALITY TRAITS AND CRIME

Personality traits concern patterns through which we as individuals differ from and resemble others in terms of our 'thinking, feeling, behaving, and relating to others' (Widiger, 2012, p. 13). A consolidation around a five-dimensional 'big five' model of describing personality that emerged in the 1990s has produced thousands of studies that show personality traits' relevance in a host of important outcomes, from health to educational and work attainment to relationship and family status as well as antisocial and criminal behavior (John, Naumann & Soto, 2008; McCrae & Costa, 2003). In particular, with regards to antisocial behavior, Miller and Lynam (2001) have shown how other personality models are captured with this five-factor framework. For example, Eysenck's three-factor model of extraversion, neuroticism and psychoticism, which has been widely used to study antisocial behavior, map onto the five factors. Different measurement instruments exist that use slightly varying labels, but the five traits are usually labeled emotional stability (versus neuroticism and negative emotionality), extraversion (versus introversion), agreeableness (versus interpersonal hostility), conscientiousness (versus impulsivity and disorganization), and openness to experience (versus closed-mindedness or conventionality).

Bright side personality and crime

The existing literature on the bright side personality traits of criminal offenders is plentiful, but fewer studies specifically target membership in criminal organizations (Salvato, Fiorina, Ovadia, De Maio, Francescon & Bottini, 2020). An early cross-country

investigation of personality and engagement in crime using multiple age cohorts concluded that personality risk factors included high negative emotionality, as evidenced by experiencing negative emotional states, and weak constraint, evidenced as impulsivity, low self-control, and weakened protection against delinquency (Caspi, Moffitt, Silva, Stouthamer-Loeber, Krueger & Schmutte, 1994). A related longitudinal study supported this finding (Caspi, Begg, Dickson *et al.*, 1997). A meta-analytic review focusing on the structural models of personality traits found that previous studies that measured variants of the big five agreeableness and conscientiousness traits found the largest negative correlations between antisocial behavior broadly defined and personality traits (Miller & Lynam, 2001). Later meta-analyses have replicated the role of low conscientiousness and agreeableness, particularly related to violent crime (Bogg & Roberts, 2004), and a newer meta-analytic review has found support for the role of high neuroticism (low emotional stability) in antisocial and aggressive behaviors, corroborating the initial studies in the area (Jones, Miller & Lynam, 2011). Evidence for other conceptualizations of neuroticism and extraversion, for example in Eysenck's model, appear more mixed (Van Dam, Janssens & De Bruyn, 2005).

Dark side personality and crime

A newer theoretical and empirical personality trait literature that has particular relevance for the study of organized crime is captured through the idea of 'dark' side personality traits. The concept expands the bright side tendencies often captured in big five models of personality as it focuses on those traits that hinder goals and thwart interpersonal relationships. The dark side personality traits bridge the gap between normal, adaptive traits as evinced by the big five and maladaptive and disordered personality traits such as clinical psychopathy and personality disorders (Furnham, Milner, Akhtar & De Fruyt, 2014). Conceptualizations of dark traits – for example through the dark triad or dark tetrad consisting of Machiavellianism, psychopathy, narcissism and sadism (Johnson, Plouffe & Saklofske, 2019) or the Hogan Development Survey (HDS) used in the present paper (Hogan & Hogan, 1997a, 2001) – are particularly relevant for problematic outcomes such as engagement in organized crime.

Several studies have investigated the relationship between subclinical and clinical personality traits and involvement in crime. In particular, psychopathic personality traits, which capture a lack of empathy and exploitation of others, have been tied to criminal and antisocial behavior (Edwards, Carre & Kiehl, 2019; Furnham, Richards & Paulhus, 2013), even if they are not necessarily associated with more successful criminal careers (Boccio & Beaver, 2018). Coid, Yang, Ullrich *et al.* (2009), in a study on psychopathy among prisoners in England and Wales, replicate previous findings that psychopathy, as measured by the Revised Psychopathy Checklist (Hare, 2003), is a prevalent condition among incarcerated males (less so for women) and comorbid with a range of personality disorders, in particular the cluster B antisocial, narcissistic, borderline, and histrionic personality disorders. In a review of studies assessing psychopathy and cluster B personality, Edwards *et al.* (2019) argue that elements of factor 2 psychopathy associated with negative affect, dysregulation, and

stress reactivity seem particularly relevant in offenders in tandem with cluster B personality traits (see also Fazel & Danesh, 2002 for a systematic review of 23,000 prisoners). Edwards, Albertson and Verona (2017) build on Miller, Dir, Gentile, Wilson, Pryor and Campbell's (2010) split between dark triad traits of interpersonal–affective psychopathy, callousness, and grandiose narcissism on the one hand, and vulnerable dark triad traits of disinhibited and reactive traits correlated with low extraversion and emotional stability on the other hand. They show that whereas the dark triad traits are central in violent crime, the vulnerable dark triad traits seem more relevant in drug and property related criminal behavior. While organized criminal behavior includes both of these, this distinction is worth keeping in mind. In a meta-analysis of 21 samples, Vize *et al.* (2018) showed how facets of big five agreeableness and conscientiousness related to psychopathy predicted both aggressive and antisocial behavior. This is consistent with results from studies that show elevated scores on Eysenck's psychoticism factor in offenders and recidivists (Jones *et al.*, 2011; Van Dam *et al.*, 2005).

Despite the mature literature on personality traits and crime, a consistent difficulty is distinguishing between already incarcerated individuals, people who have previously been engaged in crime, people currently engaged in it or those at risk of future engagement, which risks muddying the results. Studies on joining criminal organizations indicate that we should expect somewhat similar relationships for those currently engaged in criminal organizations. For example, O'Brien *et al.* (2013) show that low self-esteem, anxiety, and low empathy coupled with impulsivity are risk factors for joining criminal youth gangs, mirroring the preceding studies. In a systematic review, Jolliffe and Farrington (2004) find low empathy to be related to violent criminal offending. A recent study of 50 prisoners who were members of organized criminal groups in Italy found an increased incidence of masochistic personality disorder when compared to prisoners not affiliated with organized crime (Salvato *et al.*, 2020).

Hypotheses on personality and organized crime

The literature review revealed a substantial body of research on the personality traits of criminal offenders. However, most of this research bundled different kinds of crimes or focused on the criminal behavior itself rather than on the nature of the criminal milieus. A strength of the current paper is that it focuses on one kind of criminal milieu, namely organized criminal groups. Such groups are characterized by stronger social bonds and lend the individual stronger identities and perhaps more security in an unstable environment than non-syndicated social settings (O'Brien *et al.*, 2013). Despite this, the existing literature enables hypotheses of what personality traits characterize individuals in organized crime. Negative emotionality, weak constraint and high impulsivity coupled with interpersonal hostility or disinterest in sustained interpersonal relationships lead to the prediction that individuals involved in organized crime are characterized by low levels of the agreeableness, emotional stability, and conscientiousness bright side personality traits. Following the big five, it is unclear whether these individuals are also characterized by low extraversion and openness to experience. On the one hand, because extraversion captures elements of goal orientation

and goal attainment, we may expect lower scores on this trait. On the other hand, organized crime is more social than other types of criminal activity, which might attract people with a more social personality. There was no strong evidence in the literature for the role of openness to experience. However, as organized criminal groups are often characterized by authoritarian and hierarchical elements, they may be particularly attractive to individuals with a low degree of openness to experience.

From the part of the literature that focused on dark side personality, the split between dominant and aggressive dark traits and more vulnerable and reactive traits is important. As organized crime involves both property and drug related crimes as well as more violent crimes, we may expect to find elevated scores on traits in both domains. In this study, we use a measure that distinguishes between domains that can be understood as parallel to the dominant/vulnerable split. We distinguish between maladaptive traits characterized by moodiness, distrust, fear of failure, social introversion, and passive-aggressive behavior on the one hand, and traits characterized by narcissistic self-confidence, manipulation and callousness, and attention-seeking behavior on the other. One possibility is that this split represents an actual split between different types of individuals involved with organized crime, a notion that we explore in the analysis.

Values and motives involved in organized crime

Individuals are not simply swept onto different paths in life by their personalities. We all differ in the core motives and values that drive our behavior, and although not usually portrayed as such, engagement in organized crime can have several benefits for the individual that may not have many opportunities for pursuing other, more conventional life goals. In this sense, organized criminal groups can be seen in some sense as similar to career organizations, with opportunities for advancement and personal gain (Decker & Curry, 2000; Walters, 2012). One important factor may be personal enrichment, or at least the idea that organized crime is associated with material enrichment and a shortcut to individual wealth. Another individual motive mentioned above is the security and safety involved in membership in criminal groups, in particular in settings and neighborhoods with a high degree of crime (Goldman, Giles & Hogg, 2014). We therefore expect elevated scores for scales that measure personal enrichment and security. In this study, we measure the central values and motives for members of organized criminal groups through the 10 scales of the Motives, Values & Preferences Inventory (MVPI; Hogan & Hogan, 1999, see also Furnham, Hyde & Trickey, 2013). Of the 10 scales, we expect elevated scores on hedonism, which captures a desire for material rewards, and commerce, which concerns a focus on personal enrichment and financial success. Furthermore, we expect that motivation for identity and safety to be captured by high scores on the security scale.

In the following, we test these hypotheses in a sample of members of organized criminal groups. Previous literature on criminal organizations has suggested how different pathways and motivations into them corresponds to partially different 'roles' in organized crime (O'Brien *et al.*, 2013; Zdun, 2008). Criminal

organizations tend to be structured in subgroups (variously labeled in the literature as 'crews,' 'batches,' or 'cliques'), which can reflect territorial responsibilities as well as an actual division of labor (Densley, 2013). This division of labor can entail that different subgroups are responsible for different types of criminal activity (e.g., violent crime vs. drug distribution) or that different subgroups play different parts, for example, in a robbery (planning, look-out, and actual assault) (Braithwaite, 1989). However, a study on pathways into the Italian mafia (Meneghini, Campedelli, Calderoni & Comunale, 2021) indicates that young people who are recruited early into organized crime often follow a pathway of more serious offenses and are recruited from a lower educational background than older recruits. Our sample represents mostly the younger group. We would expect different 'roles' within organized criminal groups to appeal to different personality profiles, and thus, we expect different types of personality structures to be found in our sample. Therefore, apart from a direct test of trait means, we also conduct a latent class analysis to investigate if there are latent groups with different profiles that might indicate different 'types' of organized criminals, representing a vulnerable/dominant split between those that seek safety and structure and those that seek personal enrichment and dominance.

METHODS

Participants and procedure

Participants were recruited in cooperation with Aarhus University and the National Police of Denmark (*Rigspolitiet*). The target sample included 57 individuals who were approached by a licensed clinical psychologist and asked to participate in a research study on personality and criminal organizations. They were offered no monetary compensation or advantage in the criminal justice system, but they were offered a coaching session with the psychologist to review the results and discuss personal strengths and development opportunities. All participants were male. Participants' age ranged from 20 to 57. Fifty-two percent were between 20 and 30 years old. Centrally, all individuals were verified by the National Police of Denmark to be registered as involved in an organized criminal group according to the European Union criteria for organized crime (Council of the European Union, 2008) before completing the assessments. The Danish Penal Code's Section 81a allows for a doubling of a sentence when the crime is committed in relation to or to create conflict between two organized criminal groups. Partly as a consequence of this, the Danish National Police and Department of Justice monitors movement in and out and membership in criminal groups more closely than in most other countries (Hansen, Mulvad-Reinhardt & Ribe, 2018). The National Police operationalizes the criteria in terms of 11 characteristics that involve collaboration between at least two individuals for a longer period involving serious criminal offences motivated by profit or power (Retsinformation, 2002). Ninety-eight percent of those registered have received at least one sentence from breaking the penal code, and three fourths have received at least one custodial sentence. Thirty-five percent of those registered participate in the organized criminal groups for more than 2 years (Hansen *et al.*, 2018). Groups active in Denmark that feature in the national news include, *but are not limited to*, Hell's Angels, Brothers, Bandidos, Loyal to Familia, and others. All results were anonymized at the point of data collection before being compiled and analyzed to ensure complete confidentiality.

Instruments and operationalization

Bright side personality. Bright side personality was measured through the 206 dichotomous items of the five-factor based Hogan Personality

Inventory (HPI; Hogan & Hogan, 1997b). It consists of adjustment (emotional stability), ambition (self-confidence and competitive aspects of extraversion) and sociability (gregariousness aspect of extraversion), interpersonal sensitivity (agreeableness), prudence (conscientiousness), inquisitive (creativity aspect of openness), and learning approach (academic interest aspect of openness), and 41 facet scales. Alpha reliabilities for the scales are above 0.71, and test–retest reliabilities are between 0.74 and 0.86 (Akhtar, Humphreys & Furnham, 2015; Gøtzsche-Astrup, 2018).

Dark side personality. Dark side personality was measured by the HDS (Hogan & Hogan, 1997a). The 154-item questionnaire measures 11 personality traits associated with negative life outcomes and is inspired by the DSM-5 personality disorders (Furnham *et al.*, 2014). The 11 scales are divided into three clusters. The first represents an interpersonal strategy of avoiding others and is comprised of excitable (volatile emotionality), skeptical (interpersonal skepticism, distrust), cautious (fear of interpersonal criticism, failure), reserved (introversion and interpersonal toughness), and leisurely (passive aggressive). The second domain represents a dominant and self-centered interpersonal strategy and consists of bold (grandiose narcissism), mischievous (exploitation and manipulativeness), colorful (histrionicism), and imaginative (unusual or odd demeanor). The last domain represents building alliances to avoid threats and consists of diligent (perfectionism) and dutiful (subordination and conformity). The alpha reliabilities range from 0.64 to 0.74, and test–retest reliabilities from 0.50 to 0.78 (Gøtzsche-Astrup, 2018; Hogan & Hogan, 1997a).

Motives and values. The MVPI (Hogan & Hogan, 1999) measured motives and values through 200 items on a three-point scale (1 = disagree, 2 = uncertain, 3 = agree). The 10 motives consist of recognition (a desire to be seen), power (drive for influence), hedonism (material rewards and hedonistic enjoyment), affiliation (drive towards socializing and networking), altruism (a proclivity towards prosocial motivation), tradition (conservative values and desire for hierarchy), security (reducing risk and creating a predictable environment), commerce (financial success), aesthetics (beauty and design), and science (interest in analytics, science). More than 100 validation studies have been conducted with the MVPI, and it has test–retest ratings of between 0.64 and 0.88 (Furnham, Hyde & Trickey, 2013).

ANALYSIS AND RESULTS

Raw scores and mean differences from the norm

Four participants completed only the HPI, while one participant completed only the HPI and HDS. Fifty-two participants completed all three assessments. We first investigated the resultant raw scores from the participants' assessments. Table 1 reports the raw scale scores and standard deviations for the HPI, HDS, and MVPI scales. Next, we scored participants against a Danish adult norm for each of the three assessments. The norm samples consist of scores for 890 (HPI), 998 (HDS), and 421 (MVPI) adult Danes between 18 and 69 years of age. The average scores and standard deviations are reported in Table 1. To investigate if the participants differed from the norm mean of 50 on each scale, we conducted a series of one-sample t-tests, comparing the percentile score for each scale to a score of 50, which would be expected if the sample did not differ from the norm. Results are reported in Table 2 for the main scales of the HPI, HDS, and MVPI.

Due to the large number of comparisons, we applied two corrections to adjust for the inflation in the risk of Type-I error. Due to the relatively low sample size, we used the conservative Bonferroni method (Holm, 1979; Winsborough & Sambath, 2013). With that, we fail to reject hypotheses of no

Table 1. *Raw scores and standard deviation and normed scores and standard deviations for validated sample*

	Raw score	Standard deviation	Normed percentile	Standard deviation
HPI, *n* = 57				
Adjustment	16.3	7.31	11.4	21.0
Ambition	18.9	6.25	17.3	21.8
Sociability	13.5	4.70	42.0	31.5
Interpersonal sensitivity	16.0	3.51	26.1	27.5
Prudence	14.7	5.2	29.5	31.3
Inquisitive	13.2	4.80	45.8	32.9
Learning approach	6.44	3.35	28.1	28.5
HDS, *n* = 53				
Excitable	8.28	3.19	92.1	13.6
Skeptical	9.64	3.57	91.4	18.1
Cautious	4.77	2.74	70.1	24.4
Reserved	7.04	2.54	79.3	20.4
Leisurely	6.00	3.13	84.5	17.3
Bold	8.57	3.51	63.1	33.6
Mischievous	9.15	3.07	78.1	27.3
Colorful	8.11	2.99	56.7	30.6
Imaginative	9.49	3.15	75.8	29.2
Diligent	9.98	3.17	70	32.3
Dutiful	7.72	2.17	69.4	29.2
MVPI, *n* = 52				
Recognition	45.9	8.00	58.3	32.3
Power	44.1	8.14	60.8	32.0
Hedonism	45.2	5.49	75.9	27.0
Altruism	46.5	7.17	52.8	28.8
Affiliation	45.2	7.38	29.5	32.0
Tradition	41.6	6.41	50.2	31.0
Commerce	45.9	6.81	72.7	28.1
Security	43.1	7.72	81.6	27.6
Aesthetic	31.4	6.21	34.3	24.1
Science	40.0	7.37	49.5	31.8

Notes: HPI raw score ranges are as follows: Adjustment 0–37, Ambition 0–29, Sociability 0–24, Interpersonal sensitivity 0–22, Prudence 0–31, Inquisitive 0–25, and Learning approach 0–14. MVPI scale raw scores range between 20 (disagree to all 20 items for each scale) and 60 (agree to all 20 items for each scale). HDS raw score ranges from 0–14. HDS = Hogan Development Survey; HPI = Hogan Personality Inventory; MVPI = Motives, Values & Preferences Inventory.

difference for HDS Bold (unadjusted *p* = 0.0065) and MVPI Power (unadjusted *p* = 0.019) while the other differences retain significance at an alpha-level of 0.05. For the HPI, members of organized criminal groups had significantly lower scores on five of the seven scales. Looking at the absolute scores, and measured by Cohen's *d*, the largest differences were for adjustment and ambition where the sample participants had average scores more than one and a half standard deviations below the norm. They also had lower interpersonal sensitivity (Cohen's *d* = 0.87), learning approach (Cohen's *d* = 0.77), and prudence scores (Cohen's *d* = 0.65). Only for sociability and inquisitiveness did the participants not differ significantly from the norms. No means were above the norm mean of 50.

Translated to the big five nomenclature, participants in the sample had significantly lower emotional stability scores, lower scores on the self-confidence but not the gregarious aspect of extraversion, and lower scores on agreeableness and

conscientiousness as well as on the academic interest element of openness to experience.

For the dark side HDS measure, participants had significantly and substantially higher scores on nine of the 11 scales. The largest differences were for excitable (Cohen's *d* = 3.10), skeptical (Cohen's *d* = 2.29), leisurely (Cohen's *d* = 1.99), and reserved (Cohen's *d* = 1.44). Large differences were also found for mischievous (Cohen's *d* = 1.02), imaginative (Cohen's *d* = 0.88), and cautious (Cohen's *d* = 0.82). Smaller but still statistically significant differences were found for dutiful (Cohen's *d* = 0.66) and diligent (Cohen's *d* = 0.62). Only colorful and bold did not differ significantly from the norm of 50. In terms of the dominant/vulnerable split in the dark traits, participants had the highest scores on the vulnerable dark traits in the first domain of the HDS, although they also indicated elevated scores on the dominant traits.

For the values measure, differences were smaller, although five scales still showed large differences from the adult norm. Members of organized criminal groups had higher scores than the norm on security (Cohen's *d* = 1.14), hedonism (Cohen's *d* = 0.96), and commerce (Cohen's *d* = 0.81), but they scored lower than the norm on aesthetic (Cohen's *d* = 0.64) and affiliation (Cohen's *d* = 0.64).

Latent class analysis

Our second set of analyses consider the possibility that there are different categories of organized crime members that are reflected in different combinations of personality traits. The literature review indicated that there might be a distinction between vulnerable and dominant pathways to organized crime. Using STATA 16, we therefore conducted an exploratory latent class analysis with two classes to identify groups within the data. As the hypotheses related to different classes of personality, only the HPI and HDS results were included in the main model. Table 3 shows the resultant classes and probabilities for inclusion into each class.

Approximately one third of the population from which our sample is drawn is expected to be members of the first class, with the other two thirds in the second class. Table 4 shows the marginal means and standard deviations for the scale scores for each class.

For the bright side HPI personality scales, the first group is distinguished from the second by having higher adjustment (23.7–4.37), lower sociability (21.4–53.9), higher prudence (46.7–19.8), and lower inquisitive (31.9–53.9) scores. For the dark side HDS personality scales, the second group has higher scores than the first group on 10 of the 11 HDS scales. Both groups have high marginal scores on the first five scales, but whereas Group 1 has scores on the dominant dark scales at or below the norm mean of 50, Group 2 has much higher scores on these scales. The differences are substantial for bold (37.3–77.9), mischievous (54.5–91.6), colorful (24.3–75.4), and imaginative (53.3–88.8).

Translated to the big five framework and the vulnerable/dominant distinction, the smaller Group 1 seems to have somewhat higher emotional stability, be less socially extraverted and more conscientious but have lower openness to new experiences than the larger Group 2. Both groups have

Table 2. *t*-Tests for the HPI, HDS, and MVPI (difference from 50 for percentile scores)

	Mean (normed)	Standard deviation	Difference from normed mean of 50	*t*: *M*/50	*p*	Cohen's *d*
HPI, *n* = 57						
Adjustment	11.4	21.0	−38.6	−13.9	<0.001	1.84
Ambition	17.3	21.8	−32.7	−11.4	<0.001	1.50
Sociability	42.0	31.5	−8.00	−1.92	0.059	0.25
Interpersonal sensitivity	26.1	27.5	−23.9	−6.56	<0.001	0.87
Prudence	29.5	31.3	−20.5	−4.94	<0.001	0.65
Inquisitive	45.8	32.9	−4.20	−0.096	0.344	0.13
Learning approach	28.1	28.5	−21.9	−5.79	<0.001	0.77
HDS, *n* = 53						
Excitable	92.1	13.6	42.1	22.5	<0.001	3.10
Skeptical	91.4	18.1	41.4	16.6	<0.001	2.29
Cautious	70.1	24.4	20.1	5.98	<0.001	0.82
Reserved	79.3	20.4	29.3	10.5	<0.001	1.44
Leisurely	84.5	17.3	34.5	14.5	<0.001	1.99
Bold	63.1	33.6	13.1	2.83	0.0065	0.39
Mischievous	78.1	27.3	28.1	7.48	<0.001	1.02
Colorful	56.7	30.6	6.70	1.60	0.116	0.22
Imaginative	75.8	29.2	25.8	6.44	<0.001	0.88
Diligent	70.0	32.3	20.0	4.51	<0.001	0.62
Dutiful	69.4	29.2	19.4	4.83	<0.001	0.66
MVPI, *n* = 52						
Recognition	58.3	32.3	8.30	1.87	0.068	0.26
Power	60.8	32.0	10.8	2.43	0.019	0.34
Hedonism	75.9	27.0	25.9	6.93	<0.001	0.96
Altruism	52.8	28.8	2.80	0.690	0.494	0.097
Affiliation	29.5	32.0	−20.5	−4.61	<0.001	0.64
Tradition	50.2	31.0	0.20	0.045	0.965	0.01
Commerce	72.7	28.1	22.7	5.84	<0.001	0.81
Security	81.6	27.6	31.6	8.27	<0.001	1.14
Aesthetic	34.3	24.1	−15.7	−4.68	<0.001	0.65
Science	49.5	31.8	−0.50	−0.105	0.917	0.016

Notes: Percentile scores compared to norm of Danish adults. One-sample *t*-test with 50 as reference value. *p* indicates two-tailed probability of *t*-value. Percentile scores range 0–100. HDS raw score ranges from 0–14. HDS = Hogan Development Survey; HPI = Hogan Personality Inventory; MVPI = Motives, Values & Preferences Inventory.

Table 3. *Latent class marginal probabilities (HPI, HDS)*

	Margin	Standard error	95% CI
Class 1	0.366	0.072	[0.240; 0.514]
Class 2	0.634	0.072	[0.486; 0.760]

Notes: Delta method. *n* = 57. CI = confidence interval; HDS = Hogan Development Survey; HPI = Hogan Personality Inventory.

high vulnerable dark triad scores, but the second group has higher percentile scores than Group 1 in the dominant domain. We consider the interpretation of these results in the discussion.

DISCUSSION AND CONCLUSION

In this study, we leveraged the fact that the Danish National Police monitor and register membership in organized criminal groups according to the Danish penal code section 81a. We thus compared a unique sample of verified members of organized criminal groups to a sample of adult Danish norms for 'bright side' normal big five personality traits and interpersonally problematic 'dark side' traits showed substantial differences. In this small, but carefully selected sample, members of organized criminal groups differed in almost all traits from national norms, often by several standard deviations. For the bright side factors, organized crime members were much less emotionally stable and interpersonally self-confident, as well as less agreeable and conscientious. For the openness dimension, they indicated lower academic interest but no less inquisitiveness than the norm. They were no less sociable. The analysis revealed that the organized crime members had much higher scores than the norm group on dark traits related to both a dominant and a vulnerable dark disposition. These results support the hypothesized relationship between personality traits and involvement in organized crime. The results for the central motives and values also conform to the expectation, at least in the sense that they were motivated by material rewards (high hedonistic values) and financial success (commercial values). As expected, participants had higher security values, which might explain their involvement in organized groups. A competing interpretation could be that the high security need is, in some sense, *a byproduct of* involvement in dangerous and often aggressive social environments like organized criminal groups lacking in predictability and safety.

The overall indication is of a group of people with personality traits that risk hindering successful adaptation to an 'ordinary' life

Table 4. *Latent class marginal means*

	Class 1		Class 2	
	Margin	Standard error	Margin	Standard error
HPI				
Adjustment	23.7	4.47	4.37	3.10
Ambition	14.4	4.83	18.9	3.66
Sociability	21.4	6.04	53.9	4.86
Interpersonal sensitivity	33.7	6.27	21.7	4.54
Prudence	46.7	7.19	19.8	4.91
Inquisitive	31.9	7.08	53.9	5.43
Learning approach	23.6	6.36	30.7	4.81
HDS				
Excitable	86.2	2.97	95.5	2.23
Skeptical	80.7	3.73	97.5	2.77
Cautious	75.5	5.47	66.9	4.14
Reserved	77.0	4.62	80.6	3.49
Leisurely	78.9	3.83	87.7	2.88
Bold	37.3	6.59	77.9	4.79
Mischievous	54.5	4.77	91.6	3.58
Colorful	24.3	4.26	75.4	3.29
Imaginative	53.3	5.58	88.8	4.08
Diligent	59.0	7.16	76.4	5.38
Dutiful	64.1	6.89	72.4	5.11

Notes: Delta method. $N = 57$. HDS = Hogan Development Survey; HPI = Hogan Personality Inventory.

style, traits that create volatility, anxiety, and difficulty maintaining interpersonal relationships.

However, the exploratory latent class analysis added valuable knowledge of the sample. While an estimated two thirds of the population fit the description above, one third of the sample had somewhat higher (but still lower than the national norm) emotional stability scores, higher conscientiousness and agreeableness scores, and did not have as high scores for the dark traits than others in the sample. In particular, they did not seem to have as high dominant maladaptive traits as the other two thirds in the sample. This finding did not neatly conform to the expected dominant/vulnerable split. A possible explanation for the fact that this split was not clear-cut is that due to the voluntary nature of the study, there is selection bias in our sample. It is possible that those with dominant personalities were less likely to participate. We propose that this smaller group of individuals in our sample does represent a subgroup with somewhat less emotional volatility and interpersonal hostility, a group that may, in some sense, be 'better off' or have more resources to draw on in navigating the criminal environment. As indicated by the literature review, organized crime groups offer different 'roles' or 'positions' within the organization (O'Brien *et al.*, 2013; Zdun, 2008). Perhaps the two identified subgroups of members of criminal organizations are involved in different tasks and relate differently to non-violent and violent criminal activities, for example. This needs further investigation.

Reaching individuals verified to be related to organized criminal groups is a central strength of this study, both in terms of avoiding the mistake of bundling all 'criminals' together and in terms of accessing a difficult-to-reach population. While the sample size is relatively small, the target population in Denmark is estimated to be no more than 1,243 individuals (DKR, 2020). As evidenced by the results, the sample size was enough to show large differences from the national norms. This strength speaks to the generalizability of the results to the general population of members of organized criminal organizations in Denmark, with applications to social interventions aimed at countering participation in organized criminal groups. However, we also must consider the risk of selection bias in our study, that is, that there are systematic differences between volunteers and non-volunteers in our population, and that these differences are reflected in their personality traits. While we generally found a high willingness to participate in this academic study, it is possible that individuals with a stronger dominant or antisocial personality structure are underrepresented. As such, our results may not capture the full range of personality variation in organized crime.

The results indicate that membership of criminal organizations, for the majority, is not a question of it being the best alternative among many opportunities but perhaps the only opportunity given a range of personality traits that may make other kinds of participation and membership in groups more difficult. The emotional volatility and interpersonal insecurity uncovered in the analyses as well as the central motive for security and predictability in everyday life all point to the potential effectiveness of interventions that take a softer, more social approach over interventions escalating the threat or pointing to the potential negative consequences of continuing engagement in criminal organizations.

From these results, we may consider pull factors for these individuals. The larger group may seek the relative safety represented by the organized criminal group where the alternative is being alone to fend for themselves. For the smaller group, apparently with a more adaptive personality, it may represent more of a choice as they are doing somewhat better in terms of self-confidence and have less of the interpersonal hostility that may negatively impact the others' options. These individuals may also be targeted by interventions to leave the criminal environment as it is easier to find alternatives. On the other hand, these individuals may also find it easier to rise within the criminal organizational hierarchy and therefore be less likely to change their 'career.' As such, the identification of these two distinct types of organized criminals has implications for the design of exit programs targeting members of organized criminal groups. Here, it would be beneficial to target exit programs and the involved motivational and supportive interactions with authority representatives to these two different types and exit situations. Such targeted exit strategies may help to funnel members of organized criminal groups more effectively into new groups and roles in society. Likewise, preventive efforts should take into account these two different profiles of potential organized criminals.

Limitations and relation to previous literature

As we set out to describe the personality traits of members of organized criminal groups, generalizability from our sample to the general population of these members rather than causal inference

is central. However, it bears mention that the study is cross-sectional and measures personality for individuals already engaged in organized crime. It is therefore possible, perhaps even likely, that their rather extreme and stressful environment influences response sets, meaning some of the systematic errors in response to the personality questionnaires were due to the environment rather than personality traits across situations. That said, the results provide a snapshot of individual dispositions in these organizations and likely accurately describe the people's day-to-day personality traits. It is also important to note that these groups are characterized by large fluctuations in membership (DKR, 2020) and that we did not collect information about how long the participants had been members of these organizations.

Furthermore, while this study has improved on much of the literature in focusing specifically on verified and active members of criminal organizations, it is possible to distinguish different organized criminal groups in even more detail, for example by distinguishing those tied to specific housing projects from those that are international in scope, and those that mainly trade in drugs from others that focus on other criminal exchanges.

With our study, we focused on in-depth and comprehensive assessment of the individuals. While this strategy provided stronger measurement validity, it also could mean that recruitment of participants from an already difficult-to-reach population became even harder, leading to a lower sample size. However, our experience was the opposite, namely that offering a comprehensive assessment and thorough feedback on a test was a major draw for participants, and that our relatively small sample size was due to more general factors in recruiting individuals from a hard-to-reach population.

Finally, all participants in our sample were male. This was not due to sampling strategy, but it reflects the underlying organizational structures. Organized criminal organizations are predominantly male. However, the norm group consists of men and women, introducing bias in the comparisons. From research on gender differences in personality, we would expect our results to underestimate the differences where we found the largest effects, such as for emotional stability (Schmitt, Realo, Voracek & Allik, 2008), and overestimate differences where we found only small ones, such as the dark traits mischievous and bold (Furnham & Trickey, 2011).

In terms of generalizability, we have argued that we expect these findings to generalize the population of organized criminal groups in Denmark while keeping in mind the potential selection bias incurred by the voluntary participation in our study. We chose to use the Danish Hogan norm as a comparison group, rather than broader general norms. This choice of norm is not without limitations. It is a norm of working adults, which means they may on average have a higher education than our main sample. They may be somewhat older. However, choosing the Danish norms reduces the risk of cultural bias in the comparison, ensuring better comparability between recruited individuals and the norm in terms of shared culture.

In terms of generalizability to other European countries, there is a large overlap, not only of specific organizations but also on the focus on drug trading and societal structures, which supports generalizability. Although working with a different norm group, and despite other dark traits showing a larger deviation from the norm, this study did find an increase in traits indicating subordination and obedience (the dutiful scale), which is consistent with the findings of elevated masochism scores in members of Italian organized crimimal groups (Salvato *et al.*, 2020). For other Western countries, and in particular other cultural spheres, we would not presume that these results are generalizable. Latin American and Asian criminal subcultures, for example, may differ in central aspects that also impact the personality traits selected for.

CONCLUSION

This study has contributed to the literature on the individuals within criminal organizations, exchanging stereotypes for empirical knowledge about who actually participates in organized crime. While there is no support for the idea of criminal masterminds, neither did we find support for the idea of callous brutes. Rather, members of organized criminal groups in Denmark were characterized by emotional volatility, interpersonal distrust, vulnerable dark traits, and hedonistic values and a need for security and predictability. A subgroup of one third of the individuals seemed to be less strongly characterized by negative and 'dark' traits and may have more options available to them. The results indicate a way forward for dialogue and exit from these organizations in order to funnel individuals into more personally and interpersonally supportive groups and organizations.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the affiliated institution and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

All individuals in the study were informed about the research project and that their results would be used in anonymized form and consented to this prior to participating in the study.

DATA AVAILABILITY STATEMENT

Personality data from participants cannot be shared due to ethical and legal constraints.

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