



White-collar crime: a neglected area in forensic psychiatry?

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White-collar crime (WCC) causes considerable societal harm, the economic and psychosocial costs of which exceed those of conventional crime. Despite the impact, it has received scant attention from the academic literature in forensic psychiatry. This narrative literature review covers important topics in our understanding of white-collar crime, including offender characteristics such as demographics, criminal history, mental illness, personality and psychopathy, the link with violent offending and the trajectory of the white-collar offender (WCO) through the criminal justice system. White-collar crime is under-researched, particularly with regards to psychopathology, and the field of forensic psychiatry may have important contributions to make to our understanding of this important and harmful type of crime.

Key words: economic crime; forensic psychiatry; mental health; occupational crime; personality narrative review; white-collar crime.

Introduction

The term ‘white-collar crime’ (WCC) was coined by sociologist Edwin Sutherland in 1939, who described it as ‘a crime committed by a person of respectability and high social status in the course of his occupation’ (Simpson, 2019, p. 190; Sutherland, 1983). WCC had been earlier described in academia (Bonger, 1916), fiction (Casey & Markopolos, 2010) and the popular press (Frankel, 2012). As Ross commented in 1907: ‘The modern high-power dealer of woe wears immaculate linen, carries a silk hat and a lighted cigar, sins with a calm countenance and a serene soul, leagues or months from the evil he causes’ (Ross, 1907, p. 10).

The definition of WCC is ambiguous and poorly defined in the literature (Holtfreter,

2005; Ragatz & Fremouw, 2010; Simpson, 2019). WCC encompasses ‘illegal or unethical acts that violate fiduciary responsibility or public trust’ (Senate Economics References Committee, 2017, p. 2, as cited in Simpson, 2019). Definitions focus on the high social status of the offender (Menard et al., 2011; Sutherland, 1983), certain types of offending (Benson, 2013; Friedrichs, 2009), breach of trust (Ling et al., 2019) or the occupational setting (Benson & Chio, 2019; Friedrichs, 2019). Evolving technology has led to new types of WCC (Rebovich, 2021). There are many alternative terms: occupational crime, corporate crime (Ragatz & Fremouw, 2010), economic crime (Alalehto, 2003) and grey-collar crime (Ling et al., 2019). There is a lack of consensus on where the boundaries fall; some

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legislation gives prosecutors complete discretion to decide whether offending falls under criminal or civil penalties, creating a 'blurred' line between WCC and non-criminal wrongdoing (Feeley, 2006; S. P. Green, 2004; Sachs, 2001). There are so many different types of WCC that studying WCC or white-collar offender (WCO) as a homogeneous group can be difficult. Definitions based on characteristics of offenders (e.g. high social status) rather than the offending behaviour make any differences found between WCO and other offenders virtually axiomatic, so most criminological studies use an offence-based definition. This review takes a broad and inclusive approach and considers literature regarding all the above definitions.

The costs of WCC outweigh those of conventional crime by several orders of magnitude, with a large undetected figure and associated physical and environmental costs (Croall, 2016). The costs extend beyond the financial and physical injury/death (Cohen, 2016); there is a growing literature on the psychological impact on white-collar victims (Button et al., 2009; Piquero, 2018). In the United States, WCC has been quantified to cost hundreds of billions, with the non-quantified costs even greater (Cohen, 2016). In Europe, over 42% of larger companies have been victimised (Blickle et al., 2006).

In Australia, the Australia Federal Police estimated that organised fraud costs the Australian economy \$6.3 billion per year, which may be an underestimate, as firms prefer to address WCC internally to avoid reputational damage (Senate Economics References Committee, 2017). In 2008, 5% of the Australian population were victimised by consumer fraud, with personal losses of almost \$1 billion (Smith & Budd, 2009). In PricewaterhouseCooper's 2014 Global Economic Crime Survey, 57% of surveyed Australian organisations experienced WCC in the past two years, with more than a third losing more than \$1 million (Senate Economics References Committee, 2017). In New

Zealand, tax evasion is estimated at \$1.2 billion per year, and is under-investigated and under-prosecuted, due to limited resources of government agencies (Marriott, 2018). Public perceptions of sentencing of WCC in Australia are that it is endemically lenient (Freiberg, 2019). In New Zealand, WCOs receive more lenient treatment in the justice system than other offenders (Marriott, 2020). Australia has been described as a 'paradise' for WCC by the Australian Securities and Investments Commission (ASIC) Chairman (Senate Economics References Committee, 2017).

There have been several high-profile cases of WCC, which appear to raise significant questions relevant to psychiatry. In 2020 Melissa Caddick went missing hours after ASIC executed a search warrant at her mansion. Three months later her decomposed foot was found on a beach after she had apparently committed suicide (Federal Court of Australia, 2021). She had swindled investors out of over \$20 million as her apparently successful business was a front for a Ponzi scheme. The case raised questions about what type of person would swindle family and friends, and the mental health impact of being investigated and prosecuted. The life history of Charles Ponzi, after whom Ponzi schemes are named, raises questions about the personality development and pathology of people who become 'swindlers' and 'con artists' (*Ponzi v. Fessenden*, 1922), and there has been debate over whether Bernard Madoff, who ran the largest Ponzi scheme in history (United States Department of Justice, 2020), was psychopathic or whether his behaviour was symptomatic of underlying systemic failures – that is, whether the explanation was primarily in the realm of psychopathology or socioeconomics. Mental health has been raised somewhat controversially in relation to fitness to stand trial in some high-profile cases, citing depression (e.g. Nirav Modi fighting extradition from the UK to India; *The Government of India v Nirav Deepak Modi*, 2021) or dementia (e.g. Robert Brockman in the USA, Bloomberg,

2021; and Christopher Griggs in Australia, Australian Securities and Investment Commission, 2016). A concern in such cases is whether people adept at committing large-scale fraud are also adept at fooling psychiatrists and the courts. Issues raised by these cases include: the role of psychopathology in such offending behaviour; the mental health of offenders after they are apprehended; and the role of psychiatric assessment in the legal processing of cases. But what does forensic psychiatry have to say about or contribute to our understanding of WCC and the management of such cases?

Despite the harmful impact and public concern, these ‘hidden crimes or quiet violence’ (Frank & Lynch, 1992) have received little attention in forensic psychiatry publications, particularly when contrasted to violent or sexual offences. The academic literature on WCC comes primarily from the fields of sociology, criminology and business/accounting. Although there has been an emergence of interest in the individual psychology of WCOs over recent decades, the research into this area remains scant, with non-evidence-based assumptions being commonplace. This is an area that involves the core business of forensic psychiatry – the intersection of mental health, the legal system and criminal activity – and in which forensic psychiatry may be able to offer valuable contributions, and individual practitioners should have a basic understanding of WCC and offenders. This narrative literature review covers some of the topics particularly relevant to forensic psychiatry and identifies areas that need more research.

Method

To locate publications relevant to WCC and psychiatry, an inclusive search approach was employed, focused on the intersection of two concepts: (a) white-collar crime, and (b) mental health and psychopathology (including individual offender characteristics).

A Boolean search strategy was used across three databases: PsychNet, EbscoHost (Health business elite, Psychology and Behavioral Sciences Collections) and Pubmed, with slightly different search terms according to the requirements of each search engine. The search terms for each database are listed in the [Appendix](#).

The first author read the title of each article and, if relevant, reviewed the abstract. Sixty-nine publications were selected as relevant based on the abstracts (36 from PsychNet, 27 from Ebscohost and 65 from Pubmed, with overlap between results).

The reference lists from these 69 articles were examined to identify additional publications that the database searches missed; the references of these articles were then reviewed to locate additional resources in an iterative fashion, until saturation point. The diverse terminology resulted in the identification of an additional 336 publications (for a total of 405); these included resources not directly linked to mental health but considered foundational texts in the broader study of WCC. Due to the lack of standard terminology/meaning of WCC in the literature, all definitions were included.

These articles were read and critically evaluated, according to key results, limitations, methodology, quality, interpretation of results and impact in the field, and those studies with the best contributions were included (Ferrari, 2015). In some areas, due to the lack of data, low-quality studies are also discussed. The information was then synthesised into a narrative overview (B. N. Green et al., 2006), focusing on major topics, findings and debates relevant to forensic psychiatry.

Results

Psychiatry in the WCC literature

There is very little psychiatric research or commentary in the WCC literature. Only three articles directly related to forensic psychiatry and WCC were located: one research study

(Poortinga et al., 2006) and two review articles (Brady et al., 2016; Price & Norris, 2009b). Poortinga and colleagues (Poortinga et al., 2006) noted that WCOs represent a very small proportion of those who are referred for psychiatric assessment (0.25%). Brady et al. argued that forensic psychiatry can make significant contributions to the field (Brady et al., 2016). Price and Norris argued that forensic psychiatrists should be more involved in research into WCOs, and are in a key position to study the individual characteristics of offenders (Price & Norris, 2009b).

Psychiatrists and mental health clinicians can also be WCOs themselves (Forte, 2018; Jesilow et al., 1993; Maesen, 1991; Ogunbanjo & van Bogaert, 2013; Price & Norris, 2009b; Timofeyev & Jakovljevic, 2020). This can cause considerable reputational harm to the profession, and fraud in the mental health field directly reduces the resources available for patient care (Torrey et al., 2015).

Who are white-collar offenders?

Demographics

There are several distinguishing characteristics of WCOs. Wheeler et al. (1987), in the now influential 'Yale Studies', found that WCOs tend to be white, male, older, college-graduates and employed. These results have been supported by later research (Ragatz & Fremouw, 2010; Ragatz et al., 2012). WCOs have a mean age in their 40s (Benson & Kerley, 2001; Holtfreter, 2005; Van Onna et al., 2014), and mean age of 35 for onset of offending (Van Onna et al., 2014), a counterpoint to the classical age-crime curve of conventional offending (Benson & Kerley, 2001; Farrington, 1986). Menard and colleagues (Menard et al., 2011) surveyed 1725 adolescents over a 27-year follow-up period and found that white-collar offending peaked in middle age. Arnulf and Gottschalk (2013), in a study of 179 WCOs, described a subset of 28 'heroic leaders', older, richer, more powerful and more likely to be leaders in group offending. They suggested that these 'previously

law-abiding people with splendid careers' commit their first crimes subsequent to attaining leadership success, possibly caused by latent narcissistic personality traits (Arnulf & Gottschalk, 2013). Delisi et al. (2018) likewise identified a group of 'de novo advanced adult-onset offenders' with high socioeconomic status.

Socioeconomic status is particularly relevant to WCC and is considered by some to be definitional (Menard et al., 2011). Piff et al. (2016) suggested that upper-class individuals behave unethically out of self-interest, whilst lower-class individuals tend to behave unethically to assist others. Regarding legal sanctions, Reiman and Leighton argued that the 'criminal justice system effectively weeds out the well-to-do' (Reiman & Leighton, 2016, p. 114), and wealthy individuals are less likely to be investigated and prosecuted, with more lenient sanctions (Galvin & Simpson, 2019; Marriott, 2018), which may lead to lower estimations of risk of offending in those with high financial resources.

Gender has been another focus of attention. Between 80% and 92% of WCOs are men (Blickle et al., 2006; Gottschalk & Glasø, 2013; Timofeyev & Jakovljevic, 2020; Weisburd et al., 1991), and women WCOs are more likely to be white and less educated, and more likely to commit low-level offences and work alone (Daly, 1989; Ruhland & Selzer, 2020). Women's opportunities for WCC may be restricted by their positions in organisational hierarchies (Holtfreter, 2013), and some have argued that female WCC will increase as more women occupy higher positions (Dodge, 2019; Piquero et al., 2013; Simon, 1996). Others have suggested that more women in positions of power will lead to an overall reduction in this behaviour (Galvin, 2020; Vieraitis et al., 2012). Others have suggested that the detection rate for female WCOs may be lower (Gottschalk, 2012, 2020; Gottschalk & Glasø, 2013). There may be gender-related attitudinal differences (Fenwick, 2006), impacted by cultural factors, type of corruption

(A. R. Lee & Chávez, 2020) or perceived discrimination (Casten, 2013).

Biological factors

Kendler and colleagues (2015), using 21,603 twin pairs from the Swedish Twin Registry, compared WCC to violent and property crime. They found that WCC had a total heritability of around 53%, similar to property crime, and more than violent crime at 45%, with about a third of the genetic influence being 'unique' to WCC (compared to around half for violent crime, and none for property crime). They suggested that the genetic influences unique to WCC might reflect a genetic predisposition to 'rule breaking', as distinct from aggression. J. J. Lee et al. (2015) looked at hormonal factors (testosterone and cortisol) in a non-offender sample ($N = 82$) and found that elevated levels of cortisol and testosterone encouraged cheating, associated with subsequent reductions in cortisol and negative affect. They suggested that hormonally modulated, habitual unethical behaviour may be a means of achieving relief from psychological distress.

Others have examined neurobiological factors; Raine et al. (2012) compared 21 WCOs to matched blue-collar offenders, and found that the WCOs had significantly better executive functioning and increased cortical grey matter thickness on magnetic resonance imaging (MRI) in certain brain regions (the ventromedial prefrontal cortex, inferior frontal gyrus, somatosensory cortex and temporal-parietal junction). They hypothesised that white-collar criminals have superior cognitive and attentional functioning. Ling et al. (2019) found an association between higher frontal lobe volume on MRI (localised to the superior frontal and anterior cingulate cortex) and self-reported offending in a community sample. Krokoszinski et al. (2018) compared 11 WCOs to violent offenders and non-offenders, using electroencephalography (EEG) recordings and hypothetical moral dilemmas. They found that the fraudsters had significantly higher baseline activation of the right anterior

insula than violent offenders, and made a higher percentage of utilitarian decisions than both other groups.

Forensic history

Contrary to the perception of WCOs as 'one shot offenders' (Perri, 2011), in the 1970s Yale Studies sample (Weisburd et al., 2001), over 40% had a prior arrest, and more than a third had a prior conviction. Benson and others (Benson & Kerley, 2001; Benson & Moore, 1992) reported similar results for a study of 2643 WCOs in the 1970s; 39% had prior arrests. Walters and Geyer (2004) found that 23/57 (40%) white-collar inmates had at least one prior arrest. Van Onna et al. (2014) reviewed 644 WCOs in the Netherlands; 22% had been incarcerated by age 18. In a sample of 74 Portuguese WCOs, 59.5% had a previous criminal conviction, not statistically different from violent offenders, including in the nature of past offending (Ribeiro et al., 2019).

Interestingly these prior arrests and convictions are often not for WCC. Van Onna et al. (2014) found that a quarter had committed violent offences, a quarter property offences, almost a fifth drug offences, almost a third traffic offences and two fifths other types of non-WCC offences. Their 644 WCOs could be categorised based on criminal careers into two low-frequency groups making up 78% of cases (labelled 'stereotypical white-collar offenders', SWO, and 'adult onset', AO), and two high-frequency groups making up 22% of cases (labelled 'adult persisters', AP, and 'stereotypical criminals', SC). The 39% who were SWO were usually specialists in WCC with only about one in 10 committing non-WCOs. But over half of the AO and all high-frequency cases (AP and SC) had committed non-WCOs. Walters and Geyer (2004) found that WCOs with histories of committing non-WCC had higher levels of criminal thinking, criminal identification and deviance than those who only committed WCC. In this regard they were very similar to non-WCC offenders. These studies highlight the heterogeneity of

WCOs with regard to criminal careers and the substantial overlap between WCOs and non-WCOs.

Mental illness

There has been very little research into the prevalence of mental illness in WCOs. There is a general assumption that WCOs do not suffer from mental illness (Alalehto, 2015; Heath, 2008) and are 'basically normal people who do not suffer from the psychological or personal pathologies that seem so common among street offenders' (Benson, 2013, p. 324). However, this area is 'woefully understudied' (Perri et al., 2014, p. 83).

Poortinga et al. (2006), in a retrospective review of court-ordered psychiatric evaluations of white-collar defendants over a 12-year period, found only 73 out of 29,310 referrals for white-collar charges. They compared this sample to 73 controls matched on year of offence, and found that there were no significant differences in mood disorders (their outcome of interest) between the samples once other factors such as race, education and substance abuse were controlled for, although there were lower rates of substance use in the white-collar group. None of the white-collar defendants were recommended as not guilty by reason of insanity, and only one of the control group.

Collins and Schmidt (2006) compared 365 WCOs with a non-offender sample in upper-level positions of authority, and found higher levels of anxiety on the California Psychology Inventory (CPI) in the offender group. Ragatz et al. (2012) compared 39 white-collar-only, 88 white-collar-versatile (previous non-white-collar convictions) and 86 non-WCOs. They found no significant differences between groups on depression or anxiety scales, although they did find significantly more anxiety-related disorders (e.g. phobias, obsessive-compulsive disorder, posttraumatic stress disorder) in the white-collar versatile sample, approaching significance in the white-collar-only group. The white-collar-only offenders

had lower scores on drug problems. Benson and Moore (1992) reviewed 2462 convicted WCOs and found that only 6% of WCOs had previously used illegal drugs, compared to almost half of non-WCOs, with low rates of problematic alcohol use in both groups.

The association between gambling disorders and WCC has been another focus of research (Adolphe et al., 2019). Problem-gambling has been cited as a motivation for WCC (Banks & Waugh, 2019; Binde, 2016, 2017; Laursen et al., 2016). However, the association between problem-gambling and WCC may disappear after controlling for other factors, such as gender, age, sociodemographic factors, substance use, juvenile delinquency and low self-control (Dennison et al., 2021; Lind et al., 2021).

Psychological explanations

There have been a number of proposed psychological explanations (Severson et al., 2019). Brody et al. (2020) suggested that negative childhood experiences, such as an emotionally invalidating environment, can lead to fraud later in life, although concluded that more research was needed. Case reports have taken a psychodynamic approach (Brottman, 2009; Naso, 2012), exploring the psychodynamics of integrity and emotional conflict around corporate success and failure. Gottfredson and Hirschi's (1990) General Theory of Crime links WCC to low self-control. However, later studies challenged this model, reporting that indicators of low self-control are not related to WCC (Benson & Moore, 1992; Simpson & Piquero, 2002). The General Strain Theory (Agnew, 1992) suggests that psychological stressors can increase the likelihood of offending, including WCC (Agnew, 2001; Agnew et al., 2009; Langton & Piquero, 2007). There have been a number of theories emerging from Rational Choice Theory, suggesting that offenders commit WCC if they estimate the benefits to outweigh the risk (Paternoster & Simpson, 1996; Shover & Hochstetler, 2005). WCOs have also been

found to perceive their offending as non-criminal and use neutralisation techniques to legitimise their behaviour (Dhami, 2007; Piquero et al., 2005; Severson et al., 2019), although justification, minimisation and denial are not unique to WCOs. WCOs are less likely to identify as a criminal (Walters & Geyer, 2004). Piquero (2004, 2012) found that fear of potential losses predicts the decision to engage in WCC.

Others have highlighted the importance of the leadership role – for example, ‘financial super-predators’ – who perpetuate large-scale fraud and cause significant systemic damage to the economy (Black, 2005). Biggerstaff et al. (2015) found that firms managed by CEOs with ‘questionable ethics’ were more likely to engage in financial-reporting fraud. Informal sanctions and perceived attitudes of colleagues may be more effective at constraining deviant behaviours than formal sanctions (Hollinger & Clark, 1982; Piquero et al., 2005).

Other theories fall under the umbrella of Social Learning Theory; individuals learn criminality from symbolic interactions, observation and modelling of co-workers (Pratt et al., 2010; Sutherland, 1983). Subcultural theories (Apel & Paternoster, 2009) suggest that some organisations develop subcultures with norms of misconduct, and individuals learn to commit crime via their association with this subculture. Van Onna and Denkers (2019) highlighted weak social bonds as a causal factor.

Recently Curnow (2021) proposed a psychological theory of embezzlement, breaking down the crime into four stages: pre-existing vulnerabilities, induction to first theft, ongoing theft and detection to resolution. His model emphasised the interaction between the embezzler’s developing psychological processes and environmental context, including security, culture and financial circumstances.

Personality

The role of personality factors in WCC was discounted by Sutherland and largely

‘discarded’ by researchers (Feeley, 2006) in the latter half of the twentieth century, or treated as ‘completely irrelevant’ (Alalehto, 2003), and ignored (Perri, 2011). Coleman stated ‘[it] is generally agreed that personal pathology plays no significant role in the genesis of white-collar crime’ (Coleman, 2005, p. 184), which may not accord with subsequent genetic findings. However, there has been renewed interest in this topic over recent decades, and some research has begun to emerge in offender samples (Alalehto, 2003; Blickle et al., 2006; Collins & Schmidt, 2006; Kolz, 1999; Nee et al., 2019; Ribeiro et al., 2019) and non-offender samples (De Vries et al., 2017; Piquero et al., 2005; Turner, 2014). These studies are outlined in Tables 1 and 2, and in Simpson (2019). In brief, there are conflicting results regarding conscientiousness, desire-for-control and self-control, depending on the methodology used, and a lack of other major findings. There have also been a number of typologies of WCOs proposed (Bucy et al., 2008; A. Kapardis & Krambia-Kapardis, 2004; M. K. Kapardis, 1999; Van Onna et al., 2014; Weisburd et al., 2001), summarised in Table 3. These discrepancies are due in part to varying thresholds of how white-collar samples are identified and defined, but the typologies highlight the heterogeneity of WCOs.

Psychopathy

The link between psychopathy and workplace malfeasance has been another area of interest (Babiak et al., 2007; Boddy, 2015; Cleckley, 1976), although some have argued that ‘psychopathy can be safely ignored in the attempt to predict white-collar crime’ (Blickle et al., 2006, p. 223). Higher rates of psychopathy have been found at senior levels of organisations, between 4% and 20% (Boddy, 2015; Fritzon et al., 2016; Howe et al., 2014), the so-called ‘successful psychopath’ (Howe et al., 2014), ‘corporate psychopath’ (Fritzon et al., 2020) or ‘snakes in suits’ (Babiak et al., 2007). Associations between psychopathic traits and attitudes supportive of WCC have been found

Table 1. Studies of personality and WCC in offender samples.

Authors	Year	Sample	Measures	Results
Collins, Judith, and Frank Schmidt (Collins & Schmidt, 2006)	1993	365 inmates incarcerated for WCC in federal correctional institutions, compared with 344 non-offenders in positions of authority.	<ol style="list-style-type: none"> 1. The California Psychological Inventory (CPI) 2. Adaptation of Owens and Schoenfeldt's (1979) Brodata Questionnaire 3. PDI Employment Inventory (PDI-EI) 	WCOs had greater tendencies towards irresponsibility, lack of dependability and disregard of social norms and rules, which the authors characterised as a lack of 'social conscientiousness'. They found higher levels of anxiety in the offender group. Theft was predicted by conscientiousness and agreeableness.
Kolz, Arno R. (Kolz, 1999)	1999	218 employees working for a women's apparel retailer in New York City.	<ol style="list-style-type: none"> 1. Conscientiousness, agreeableness and neuroticism scales of the NEO Five Factor Inventory (NFFI) 2. Self-report of theft from employer in the last year 3. Manager ratings of 'counterproductive' behaviours 	Identified three WCC personality types: the 'positive extrovert' (socially competent, manipulative and egocentric), the 'disagreeable businessman' (bitter, inflexible, aggressive and contemptuous towards colleagues) and the 'neurotic' (insecure, sloppy and anxious). Low behavioural self-control, high hedonism and high narcissism predicted WCC. Unlike Collins and Schmidt, they found high
Alalehto, Tage (Alalehto, 2003)	2003	128 businessmen in Sweden acted as informants about personality of 55 close friends/colleagues known to be 'non-law-abiding' (whether or not convicted).	<ol style="list-style-type: none"> 1. Semi-structured interviews with the principal question: Why does one become an economic criminal? 	Identified three WCC personality types: the 'positive extrovert' (socially competent, manipulative and egocentric), the 'disagreeable businessman' (bitter, inflexible, aggressive and contemptuous towards colleagues) and the 'neurotic' (insecure, sloppy and anxious). Low behavioural self-control, high hedonism and high narcissism predicted WCC. Unlike Collins and Schmidt, they found high
Blickle, Gerhard, Alexander Schlegel, Pantaleon Fassbender, and Uwe	2006	76 male prison inmates from 14 correctional institutions in Germany, convicted of high-level WCC, compared to 150	<ol style="list-style-type: none"> 1. German version of the <i>Social Desirability</i> scale 2. German translation of the Schwartz Values Inventory 	Identified three WCC personality types: the 'positive extrovert' (socially competent, manipulative and egocentric), the 'disagreeable businessman' (bitter, inflexible, aggressive and contemptuous towards colleagues) and the 'neurotic' (insecure, sloppy and anxious). Low behavioural self-control, high hedonism and high narcissism predicted WCC. Unlike Collins and Schmidt, they found high

(Continued)

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Authors	Year	Sample	Measures	Results
Klein (Blickle et al., 2006)		managers working in German corporations.	3. German translation of diagnostic features of DSM-III Narcissistic Personality Disorder 4. German translation of the conscientiousness scale from the NEO Five-Factor Inventory (NEO-FFI)	conscientiousness after controlling for social desirability. They characterised the WCO as a 'rationally calculating business person' with low integrity and high conscientiousness.
Ribeiro, Rita, Inés Sousa Guedes, and José Cruz (Ribeiro et al., 2019)	2019	74 male inmates convicted of WCC in Portuguese prisons, compared to 63 inmates convicted of violent crimes.	1. Self-control items from Grasmick et al. (1993) scale 2. Portuguese version of the Neo Five-Factor Inventory (NEO-FFI)	They found higher levels of 'openness to experience' (with low levels of internal consistency), no difference in levels of self-control between WCOs and violent offenders. The subjects were found to be gregarious, outgoing, agreeable, emotionally controlled and possessing an ability to lie and manipulate. They were described as 'personable liars'.
Nee, Button, Shepherd, Blackburn, and Leal (Nee et al., 2019)	2019	17 WCOs, 'in the field', all sanctioned for 'occupational corruption'-related offences	Eysenck Personality Questionnaire-Revised (EPQ-R)	

Note: WCC = white-collar crime; WCO = white-collar offender; DSM-III = Diagnostic and Statistical Manual of Mental Disorders-Third Edition.

Table 2. Studies of personality and WCC in non-offender samples.

Authors	Year	Sample	Measures	Results
Leeper Piquero, Nicole, Lyn Exum, and Sally Simpson (Piquero et al., 2005)	2005	13 business executives and 33 MBA students.	1. Three scenarios depicting corporate violations; and 2. Desirability of Control Scale (1979).	Identified 'desire-for-control' as being associated with willingness to break the law.
Turner, Michael (Turner, 2014)	2014	357 undergraduate accounting students in Australia.	1. The short-version 44-item BFI personality measurement items; and 2. Two scenarios about WCC and accounting fraud.	Individuals scoring lower in agreeableness and conscientiousness had self-reported higher propensity to commit WCC.
Schoepfer, Andrea, Nicole Leeper Piquero, and Lynn Langton (Schoepfer et al., 2014)	2014	Sample of 391 criminal justice students.	1. Three vignettes involving embezzlement, shredding documents, and shoplifting; 2. Desirability of Control Scale (1979); and 3. Low self-control scale (1993)	Desire-for-control significantly predicted intentions to offend in participants with low self-control for embezzlement; was significant under both low and high levels of self-control for shredding incriminating documents; and not significant for shoplifting. Respondents with lower self-control reported more intentions to offend. Amongst those with high self-control, higher desire-for-control was protective for offending.
Craig, Jessica Maeve (Craig, 2016)	2015	298 undergraduate criminology students.	1. Two white-collar crime scenarios and one minor property crime scenario; 2. Desirability of Control Scale (1979); and 3. Low Self-Control Scale (1993)	Association between unsocialised sensation-seeking and intentions to engage in shoplifting, embezzlement, and credit card fraud.
Craig, Jessica M., and Nicole Leeper Piquero (Craig & Piquero, 2017)	2017	298 undergraduate university students.	1. Two white-collar crime scenarios and one minor property crime scenario; 2. Brief Sensation Seeking Scale (BSSS); and 3. Low Self-Control Scale (1993).	

(Continued)

Table 2. (Continued).

Authors	Year	Sample	Measures	Results
De Vries, Reinout E., Raghavar D. Pathak, Jean-Louis Van Gelder, and Gurmeet Singh (De Vries et al., 2017)	2017	235 working adults in Fiji and the Marshall Islands.	<ol style="list-style-type: none"> 1. Short HEXACO-PI-R 2006); 2. Perceived Environmental Corruption (PEC) scale and the Perceived Environmental Normativeness (PEN) scale; 3. Ethical organizational culture scale (2008); and 4. Four vignettes about WCC. 	Association between lower honesty and humility ratings and willingness to make unethical business decisions.

Note: WCC = white-collar crime; BFI = the Big Five Inventory; HEXACO -PI -R = The HEXACO Personality Inventory-Revised.

in undergraduate students (Ray & Jones, 2011) and online surveys (Lingnau et al., 2017). However, a direct link between psychopathic traits and WCC has yet to be empirically established, and remains theoretical (Perri, 2011). It has been suggested that ‘corporate’/ ‘successful’ psychopathy may be associated with Factor 1 psychopathy (Hare et al., 1990; including interpersonal manipulation and callous affect), but not with Factor 2 psychopathy (erratic lifestyle and anti-social tendencies; Boddy, 2011; Lingnau et al., 2017). One possibility is that corporate psychopaths engage in misconduct that does not violate criminal law, but still causes widespread harm (Boddy, 2011; Passas, 2005). Overall, this area remains under-researched (Boddy, 2015).

The link with violent offending

Although WCC is conceptualised as non-violent, recent research has suggested a subtype of violent WCOs, so-called ‘red collar’ criminals (Brody & Kiehl, 2010; Friedrichs, 2009). Perri and Lichtenwald (2007, 2008) suggested that WCOs may commit instrumental homicide/attempted homicide to conceal their crime, including ‘murder-for-hire’ cases. Perri gives 28 examples of ‘red collar’ homicide cases (Perri, 2015) and an additional nine attempted-homicide cases. He raises the role of narcissism and psychopathy in these ‘red collar’ criminals (Perri, 2011, 2015), although this has subsequently been challenged (Alalehto & Azarian, 2018).

The intersection between organised crime and WCC (Edwards & Gill, 2002; Kleemans & Van de Bunt, 2008) is fuzzy (Huisman, 2019; Naylor, 2017) and another area where violence occurs (Kendall, 2010). Organised crime groups may require the skills of WCOs, such as money laundering (Huisman, 2019), and the revenues of organised crime often cannot be separated from those of WCC by investigators (Ruggiero, 2017). Further, WCO offending can result in physical injury and death through criminal corporate negligence (Cohen, 2016; Croall, 2016). As highlighted

Table 3. Typologies of WCOs.

Authors	Year	Sample the typology is based on	Typology
Weisburd, David, Elin Waring, and Ellen Chayet (Weisburd et al., 2001)	2001	Subset of the Yale Studies sample; 968 WCC cases processed in seven federal judicial districts during 1976–1978.	The authors identified three groups; the first and largest group comprised low-frequency offenders (subdivided into ‘crisis responders’ who engage in crime in response to a perceived crisis, and ‘opportunity takers’ who respond to unusual sets of opportunities for WCC). The second was a group of intermittent offenders, ‘opportunity seekers’, who live stable lives with long spells of nonoffending and seek out opportunities to commit crime, and the third group was persistent offenders or ‘stereotypical criminals’.
Kapardis, Andreas, and Maria Krambia-Kapardis (M. K. Kapardis, 1999; A. Kapardis & Krambia-Kapardis, 2004)	2004	50 major fraud cases investigated and prosecuted by the Major Fraud Group (MFG) of the Victoria police.	12-type taxonomy of serious fraud offenders, based on offending pattern and motivation: (1) predator/career fraud offender (16%); (2) opportunist first offender in professional occupation (24%); (3) fraud under an assumed professional identity (2%); (4) isolated fraud as response to unshareable financial pressure on the family (4%); (5) serial fraud as response to unshareable financial pressure on the family (10%); (6) fraud as personal justice (2%); (7) isolated fraud as response to unshareable financial pressure on oneself (4%); (8) serial fraud to solve a financial problem of a personal nature (8%); (9) serial fraud due to a vice (6%); (10) isolated fraud to restore social identity (2%); (11) serial fraud by an unscrupulous deceiver (14%); and (12) serial fraud to assist loved ones with a financial problem (8%).
Bucy, Pamela, Elizabeth Formby, Marc Raspanti, and Kathryn Rooney (Bucy et al., 2008)	2008	Semi-structured interviews with 45 WCC ‘experts’, including federal prosecutors, whistleblowers’ counsel and private defence lawyers specialising in WCC.	Most experts agreed that WCOs can be divided into ‘leaders’ (‘Type A’ personalities; intelligent, arrogant, cunning, prone to risk-taking, greedy, narcissistic, determined and charismatic), and ‘followers’ (less confident and aggressive, gullible, passive and naïve, and much more susceptible to deterrence). Some suggested additional categories such as those who retaliate by becoming whistleblowers or who are genuinely unaware of violating the law.

(Continued)

Table 3. (Continued).

Authors	Year	Sample the typology is based on	Typology
Van Onna, Joost H. R., Victor R. Van Der Geest, Wim Huisman, and Adriaan JM Denkers (Van Onna et al., 2014)	2014	644 prosecuted white-collar offenders in the Netherlands	<p>The authors identified four trajectories of WCOs from their sample:</p> <ol style="list-style-type: none"> 1. The 'stereotypical' white-collar offenders (38.9%) who show no criminal offending in adolescence and early adulthood, start offending in their mid-30s and peak at age 50; 2. 'adult onset' (39.3%) whose offending starts in early adulthood and steadily increases until it peaks at the age of 40; 3. 'adult persists' (17.8%) who start offending in adolescence and continue to increase offending until they peak at age 40; and 4. 'stereotypical criminals' (4%) who start their criminal careers in adolescence at a high rate, peak at age 31 and then sharply decline.

Note: WCC = white-collar crime; WCO = white-collar offender.

above, studies have found that a quarter of WCOs commit violent offences that may be unrelated to WCC (Van Onna et al., 2014). So, overall, we should not assume that WCOs are non-violent (Perri & Brody, 2011).

The heterogeneity of WCOs

WCCs include a range of offences. For example, the offences included in the studies of Wheeler et al. (1987) included antitrust offences, securities fraud, mail fraud, false claims, bribery, income tax fraud, lending and credit fraud, and bank embezzlement. Considering offenders who commit these offences as one group may obscure characteristics of those who commit particular types of WCCs. For example, antitrust offenders have been found to be quite different in terms of demographics and offending histories from mail and wire fraud offenders, with the latter group similar to non-WCOs (Weisburd et al., 2001). So, it may not be that some WCOs of any type overlap with non-WCOs, but that certain groups of WCOs overlap with non-WCOs.

The WCO in the legal system

Only a small percentage of identified WCCs are prosecuted by the criminal justice system (Friedrichs, 2009; Gottschalk, 2021). Many investigations are done internally or privately by law firms or fraud examiners; reports are never made public and/or subject to attorney-client privilege (Gottschalk, 2017). Several factors deter prosecutors from pursuing white-collar cases (Benson & Cullen, 1998); prosecution of WCC is time and resource heavy, and more likely to take place in an administrative or civil capacity than in a criminal court (Marriott, 2018). Those cases that do reach the criminal justice system have a high probability of a guilty plea to avoid an expensive trial (Weidenfeld & Spire, 2017).

Braithwaite (1982) argued that a 'just' system would result in WCOs making up the majority of the prison population, noting that

‘just desserts for the powerless, and comparative lenience for the powerful, is not just desserts at all’ (p. 761). The Yale Studies found that WCOs were treated favourably during the presentence stages, as prosecutors engage in negotiations with defence attorneys (Mann, 1985; Wheeler & Rothman, 1982), although more recent research has suggested that this may be changing (Galvin & Simpson, 2019). Some advocate for WCOs ‘voluntarily’ repaying their victims, in favour of custodial sentences. This has led to concerns that WCOs can ‘buy their way’ out of prison, although others have argued that voluntary restitution provides the best outcome for victims (Faichney, 2014).

Watkins (1977) noted that juries are reluctant to convict WCOs, even when the law has been clearly violated. Jurors are influenced by underlying racial assumptions; mock jurors are more lenient on black WCOs than white ones, although black conventional offenders are punished more harshly (Gordon, 1990; Gordon et al., 1988). Although female offenders generally receive lighter sentences than males (Van Slyke & Bales, 2013), in some cases the reverse may be true (Etgar et al., 2019). Cox et al. (2016) found juries more likely to recommend harsher sentences for WCOs perceived as remorseless and lacking empathy. Filone et al. (2014) found that a personality disorder diagnosis was less influential on mock jurors’ sentencing decisions than for violent crime.

Despite recent legislative changes aimed to increase penalties for WCC, lower court judges have been found to make significant ‘downwards departures’ from sentencing guidelines (Ford, 2008). Wheeler et al. (1988) interviewed 51 federal judges in the USA, and found a general belief that WCOs do not reoffend, getting caught is sufficient deterrent, WCOs have ‘more to lose’, and more weight is given to the impact on dependents. These attitudes, in combination with judges’ greater empathy with offenders with similar backgrounds and lifestyles, may lead to the observed disparity in sentencing outcomes.

Considering the sanctioning of WCOs, outcomes may be affected by indirect impacts other than conviction and punishment, such as media coverage, loss of status and opportunity to work in particular areas (Button et al., 2018). These may contribute to subsequent mental health problems.

Experiences in prison

A commonly-held belief is that WCOs are particularly vulnerable to the negative effects of incarceration, referred to as the ‘*special sensitivity hypothesis*’ (Hunter, 2019; Logan et al., 2019; Stadler et al., 2013). Advocates of this position suggest that prison is particularly shocking for WCOs, and they will have greater difficulty adapting to prison life than street-level offenders (Payne, 2003; Pollack & Smith, 1983; Wheeler et al., 1988). Payne (2003) described the “six Ds” of white-collar incarceration: depression, danger, deviance, denial, deprivation and doldrums. Entry into prison is a common feature of autobiographical writing by WCOs (Hunter, 2019), which involves ‘status degradation ceremonies’ (Garfinkel, 1956; Watkins, 1977).

However, despite this presumed vulnerability, until recently there have been no empirical studies. WCOs are almost always sent to minimum security prisons (Friedrichs, 2009). Stadler et al. (2013) reviewed data gathered on 78 WCOs, including offender interviews, administrative records and prison-staff observations. They found that WCOs were less likely to experience general difficulties in prison than the non-WCO group, were more likely to make friends and were no more likely to have concerns for their personal safety, trouble sleeping or problems with current or former cellmates. Crank and Payne (2015) compared 116 incarcerated WCOs to 6510 other inmates, and found WCOs were no more likely to have mental health interventions and were less likely to receive psychiatric medications than violent inmates. Logan et al. (2019) used survey data to compare WCOs (using two definitions, one offence based, $N = 932$,

and one socioeconomic status based, $N = 132$) to non-WCOs. They found no statistically significant differences for either white-collar group in self-reported negative affect or mental health treatment in prison, and socioeconomic status (SES) WCOs were significantly less likely to report feeling hopeless. They suggested that these findings provided support for the ‘*special resiliency hypothesis*’; WCOs have better emotional regulation, avoid confrontation and can ingratiate themselves to prison-staff and other inmates. Button et al. (2018) found some positive prison experiences, including helping others, improving health/fitness and new friendships. It is likely that WCOs cope with prison better because they are generally older, better off financially and have more stable relationships and social circumstances than other offenders.

Convicted WCOs in the community

Home detention is increasingly used for WCOs (Friedrichs, 2009). However, community supervision is seen by most probation officers as ‘going through the motions’ (Benson, 1985). Convicted WCOs tend to reject a criminal identity (Hunter, 2019). Mason (2007) interviewed 35 WCOs and found they viewed supervision as ‘demeaning and demoralising paperwork’. Murphy and Harris (2007) used survey data from 652 tax avoiders, and found that those who perceived their treatment as less stigmatising were less recidivist.

Convicted WCOs have better odds of regaining stable employment than street-level offenders, although multiple prior arrests and incarceration before age 24 decreases those odds (Kerley & Copes, 2004). Benson (1984) found that professionals and licensed occupations (such as medicine and law) and those employed in the public sector were much more likely to lose occupational status after a conviction than those in private business. Button et al. (2018) interviewed 17 convicted WCOs in the UK post release, and found that this period may prove to be more challenging than prison itself, with 41% accessing mental

health treatment, and three WCOs requiring psychiatric admission.

Recidivism

Despite a general perception that WCOs are unlikely to reoffend, a significant proportion commit further crimes after conviction, with similar recidivism rates to those of robbery and firearm offenders (Perri, 2011). A total of 683 forgers, compared with burglars and car thieves over a 14-year period, had higher rates of parole violations and revocation (McCall & Grogan, 1974). The Yale sample had an overall recidivism rate of 29%, with no difference between those who were incarcerated and those who were not (Weisburd et al., 1995). Listwan and colleagues (Listwan et al., 2010) followed 64 convicted WCOs over 10–12 years, and found that 53% were arrested at least once, with ‘neurotic-type’ personality (using the Jesness Inventory) as a significant risk factor for reoffending. Harbinson et al. (2019), using data on 31,306 white-collar offenders under supervision, found that 7.8% had their supervision revoked (re-arrest data were not available); of the 2.2% classified as high risk on the Federal Post-Conviction Risk Assessment (a measure not specific to WCC), the reoffending rate was around half. Goulette (2020) suggested that gender may play a role in recidivism risk, as women score lower on general risk assessment tools. However, it is unclear whether general risk assessment tools are valid in the assessment of WCOs and whether psychiatric factors are risk factors for recidivism.

In summary, the reasons for white-collar recidivism are not well understood, and risk factors have not been studied separately from factors common to all crime. Convicted WCOs (who represent a small and arguably atypical proportion of WCOs) may need higher post-release support than they receive, to prevent reoffending and improve their well-being and successful re-integration into society, an area where high-quality mental health support could play a significant role. There

may be risk factors beyond the common factors for criminal/violent reoffending that are relevant to WCC, such as anxiety-related disorders, cognitions related to offending including self-identity and neutralisation, a history of non-aggressive rule breaking, or financial responsibilities to dependents, although these are yet to be established.

Limitations

This study had several limitations. Due to the diverse terminology and non-medical academic focus of the literature, some publications may have been missed, along with non-published material and other potentially relevant grey literature. Given the breadth of the topic and the different aspects to WCC, there are undoubtedly many other topics relevant to forensic psychiatry that have not been included, such as wrongdoing at the level of the corporation (rather than by individuals) and legal aspects.

Implications

There are clearly many gaps in the understanding of WCC and WCOs, particularly with respect to factors of relevance to forensic psychiatry. We are of the view that forensic psychiatry can contribute to filling these research gaps in a number of ways, and therefore contribute to the multi-disciplinary understanding of WCC. Forensic psychiatrists also have a clinical role to play in the assessment and treatment of WCOs.

Research implications

A recent edited volume on forensic neuroscience (Beech et al., 2018) highlighted the significant contribution that neurobiology can make to understanding offending behaviours, the conditions that underpin such behaviours and interventions for these behaviours. However, WCC did not feature, and a chapter on deception (Vendemia & Nye, 2018) was of limited relevance to WCC, although

manipulation and deception seem to play a key role in WCC. The neurobiological understanding of psychopathy is quite well developed (Glenn & Raine, 2014). Research on the neurobiology of deception and psychopathy may inform the understanding of the genesis of WCC, and such research could be conducted on WCOs. Neurobiological research on WCOs is very rare compared to that on violent and sexual offenders.

Research on offenders with different trajectories and criminal careers has highlighted developmental and psychopathological differences between those who persist and those who desist (McGee & Moffitt, 2018). Such psychopathological differences may be relevant to WCOs, and research comparing one-off WCOs, recidivist WCOs, diverse offenders who commit non-WCC as well as WCC, and non-WCOs may help in the understanding of the personality and developmental factors predisposing to these different trajectories. Research ascertaining the rates of mental illnesses, personality disorders and psychopathy in WCOs could help with understanding such offenders but also to know what their mental health needs are. Violence may be linked to WCC in different ways. One important factor in understanding this relationship, given the relationship between various mental disorders and violence (Sariaslan et al., 2020), could be psychopathology. Studies of the psychopathology and mental health of WCOs both before and after sanctioning and subsequently would help with understanding the development of mental health difficulties seen in WCOs and their relationship to punishment, imprisonment, loss of status and other factors. Research on the relationship between mental health conditions and reoffending, and whether mental health treatment reduces reoffending, would help in understanding the potential role forensic mental health services could play in the rehabilitation of WCOs.

Given the impact of WCC and the recidivism rates, which are higher than those for sexual offenders and similar to those for violent

offenders, there is a need for methods of identifying offenders who are more likely to recidivate. There are a number of instruments that have been validated in the prediction of general and violent recidivism (Douglas & Otto, 2020). Research should be undertaken to ascertain whether such instruments have predictive validity for WCOs. Instruments for general recidivism emphasise antisociality and social instability and may not cover factors of relevance to WCC. There may be other factors that need to be considered as well as, or instead of, such factors. Some of these may be psychopathological in nature, for example Factor 1 psychopathy. To assess risk of recidivism it is likely that an approach considering both the uniqueness of WCC and commonalities with other offending will be required. This is analogous to what we know about risk assessment for sex offending, stalking and intimate partner violence (Douglas & Otto, 2020), where some factors are common to all types of interpersonal violence offending (e.g. history of violence and antisociality), while others (e.g. sexual deviance for sexual offenders) are unique to specific groups. Understanding the role of mental health as a dynamic factor in precipitating offending and in desistance could help determine the role of mental health in risk assessment and management.

Clinical implications

Forensic psychiatrists tend to focus on violent mentally disordered offenders, and most will be unaware of the aspects of WCC and WCOs summarised in this review. So forensic psychiatry as a clinical specialty has little to do with WCOs and little understanding of such cases. This lack of involvement and non-evidence-based assumptions about WCOs may perpetuate the notion that forensic psychiatry has little to offer. However, this review challenges this.

One fundamental clinical implication that arises from this review goes to the very nature of the practice of forensic psychiatry. Forensic psychiatrists focus their clinical work on

individuals with mental health conditions who commit interpersonal violence rather than 'general offenders'. Given the impact of WCC, the recidivism rates of WCOs, the link with violent crime and the similar rates of mental health conditions, it could be argued that forensic mental health services should be more involved in the treatment and management of WCOs.

Psychiatrists undertaking assessments for courts need to know that recidivism is no less common in WCOs, they are often not specialists, and psychopathology may be relevant to their offending. The countertransference of psychiatrists to WCOs may be different from that for other offenders as they are more likely to have similar demographics. This may impact judgments about the presence and role of psychopathology, perceptions of risk and approaches to intervention. The mental health of WCOs subsequent to sanctioning and/or release may be relevant to several outcomes including the well-being and social functioning of the WCO, risk of suicide and risk of recidivism.

Conclusions

Despite its fuzzy borders, and although it does not generate the same public outrage and opprobrium as violent or sexual offending, WCC falls squarely within the realms of criminal behaviour, mental health and the legal system, with a high cost to victims and society. There has been a general neglect of WCC in the field of academic forensic psychiatry. The relationship between psychopathology, personality factors, other psychological factors and WCC has been poorly studied, and needs further exploration. Even though the vast majority of WCOs may turn out to be psychiatrically 'well', this has yet to be established, and the post-release period may be one of particular vulnerability. Other areas that could benefit from further study include: predisposing factors for WCC (such as personality and psychopathy, a history of non-criminal unethical

behaviour/boundary violations), precipitating factors (psychosocial or financial stressors), and the role of notoriety and fear of retribution as barriers to reintegration to the community. Psychiatry has a particular role to play in understanding the role of psychopathology and mental health in predisposing to, precipitating, perpetuating and desisting from WCC.

Doctors share high levels of societal trust, respectability and similar socioeconomic and educational backgrounds with WCOs (including offenders within the medical profession itself), which may lead to bias in the average psychiatrist, as has been proposed for sentencing judges (Wheeler et al., 1988). There may be a reluctance to pathologise people with whom we can more easily identify, and to locate the causes of their offending in external factors. It is time to start grappling with these issues.

There are several ways in which forensic psychiatry may contribute meaningfully to the field of WCC. Forensic psychiatrists can offer valuable insights into the role of psychopathology in sentencing (particularly in jurisdictions where personality disorder is accepted as a mitigating factor, such as Victoria), treatment and management of WCOs, and understanding the meaning of WCC is helpful in clinical practice and assessment. It is surprising, given the degree of victimisation, societal harm and recidivism rates, that there are no validated risk assessment tools specific to WCC, and this is an area where forensic psychiatry may be able to provide expertise and guidance. In light of the growing public discourse about WCC and issues such as tax avoidance by wealthy individuals and banking irregularities, our understanding and response to this behaviour should be based on sound theory and evidence, rather than assumptions.

Ethical standards

Declaration of conflicts of interest

Rose Clarkson has declared no conflicts of interest

Rajan Darjee has declared no conflicts of interest

Ethical approval

This article does not contain any studies with human participants or animals performed by the authors.

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References

- Coleman, J. W. (2005). *The criminal elite: Understanding white-collar crime*. Macmillan.
- Ray, J. V., & Jones, S. (2011). Self-reported psychopathic traits and their relation to intentions to engage in environmental offending. *International Journal of Offender Therapy and Comparative Criminology*, 55(3), 370–391. <https://doi.org/10.1177/0306624X10361582>
- Adolphe, A., Khatib, L., van Golde, C., Gainsbury, S. M., & Blaszczynski, A. (2019). Crime and gambling disorders: A systematic review. *Journal of Gambling Studies*, 35(2), 395–414. <https://doi.org/10.1007/s10899-018-9794-7>
- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30(1), 47–88. <https://doi.org/10.1111/j.1745-9125.1992.tb01093.x>
- Agnew, R. (2001). An overview of general strain theory. *Explaining criminals and crime* (pp. 161–174). Roxbury.
- Agnew, R., Piquero, N. L., & Cullen, F. T. (2009). General strain theory and white-collar crime. In *The criminology of white-collar crime* (pp. 35–60). Springer.
- Aialehto, T. (2003). Economic crime: Does personality matter? *International Journal of Offender Therapy and Comparative Criminology*, 47(3), 335–355. <https://doi.org/10.1177/0306624X03047003007>
- Aialehto, T. (2015). White collar criminals: The state of knowledge. *The Open Criminology Journal*, 8(1), 28–35. <https://doi.org/10.2174/1874917801508010028>
- Aialehto, T., & Azarian, R. (2018). When white collar criminals turn to fatal violence: The impact of narcissism and psychopathy.

- Journal of Investigative Psychology and Offender Profiling*, 15(2), 215–226. <https://doi.org/10.1002/jip.1503>
- Apel, R., & Paternoster, R. (2009). Understanding “criminogenic” corporate culture: What white-collar crime researchers can learn from studies of the adolescent employment–crime relationship. In *The criminology of white-collar crime* (pp. 15–33). Springer.
- Arnulf, J. K., & Gottschalk, P. (2013). Heroic leaders as white-collar criminals: An empirical study. *Journal of Investigative Psychology and Offender Profiling*, 10(1), 96–113. <https://doi.org/10.1002/jip.1370>
- Australian Securities and Investment Commission (2016). *ASIC permanently bans Christopher John Griggs from providing financial services*. 16-413MR. <https://asic.gov.au/about-asic/news-centre/find-a-media-release/2016-releases/16-413mr-asic-permanently-bans-christopher-john-griggs-from-providing-financial-services/>
- Babiak, P., Hare, R. D., & McLaren, T. (2007). *Snakes in suits: When psychopaths go to work*. Harper.
- Banks, J., & Waugh, D. (2019). A taxonomy of gambling-related crime. *International Gambling Studies*, 19(2), 339–357. <https://doi.org/10.1080/14459795.2018.1554084>
- Beech, A. R., Carter, A. J., Mann, R. E., & Rotshtein, P. (Eds.). (2018). *The Wiley blackwell handbook of forensic neuroscience*, 2 Volume Set. John Wiley & Sons.
- Benson, M. L. (1984). The fall from grace: Loss of occupational status as a consequence of conviction for a white collar crime. *Criminology*, 22(4), 573–593. <https://doi.org/10.1111/j.1745-9125.1984.tb00316.x>
- Benson, M. L. (1985). White collar offenders under community supervision. *Justice Quarterly*, 2(3), 429–438. <https://doi.org/10.1080/07418828500088651>
- Benson, M. L. (2013). Editor’s introduction—White-collar crime: Bringing the offender back. *Journal of Contemporary Criminal Justice*, 29(3), 324–330. <https://doi.org/10.1177/1043986213496380>
- Benson, M. L., & Chio, H. L. (2019). Who commits occupational crimes? In *The handbook of white-collar crime* (pp. 95–112). Wiley.
- Benson, M. L., & Cullen, F. T. (1998). *Combating corporate crime: Local prosecutors at work*. UPNE.
- Benson, M. L., & Kerley, K. R. (2001). Life course theory and white-collar crime. In H. N. Pontell & D. Shichor (Eds.), *Contemporary issues in crime and criminal justice: Essays in honor of Gilbert Geis* (pp. 121–136). Prentice Hall.
- Benson, M. L., & Moore, E. (1992). Are white-collar and common offenders the same? An empirical and theoretical critique of a recently proposed general theory of crime. *Journal of Research in Crime and Delinquency*, 29(3), 251–272. <https://doi.org/10.1177/0022427892029003001>
- Biggerstaff, L., Cicero, D. C., & Puckett, A. (2015). Suspect CEOs, unethical culture, and corporate misbehavior. *Journal of Financial Economics*, 117(1), 98–121. <https://doi.org/10.1016/j.jfineco.2014.12.001>
- Binde, P. (2016). Gambling-related embezzlement in the workplace: A qualitative study. *International Gambling Studies*, 16(3), 391–407. <https://doi.org/10.1080/14459795.2016.1214165>
- Binde, P. (2017). Gambling-related employee embezzlement: A study of Swedish newspaper reports. *Journal of Gambling Issues*, 34(34), 12–31. <https://doi.org/10.4309/jgi.v0i34.3955>
- Black, W. K. (2005). “Control frauds” as financial super-predators: How “pathogens” make financial markets inefficient. *The Journal of Socio-Economics*, 34(6), 734–755. <https://doi.org/10.1016/j.socec.2005.07.026>
- Blickle, G., Schlegel, A., Fassbender, P., & Klein, U. (2006). *Some personality correlates of business white-collar crime* (pp. 220–233). Blackwell Publishing. <https://doi.org/10.1111/j.1464-0597.2006.00226.x>
- Bloomberg (2021). *Billionaire deemed competent for trial in record tax-fraud case*. <https://www.bloomberg.com/news/articles/2021-07-06/billionaire-competent-to-stand-trial-for-tax-crimes-experts-say>
- Boddy, C. R. (2011). Corporate psychopaths, bullying and unfair supervision in the workplace. *Journal of Business Ethics*, 100(3), 367–379. <https://doi.org/10.1007/s10551-010-0689-5>
- Boddy, C. R. (2015). Organisational psychopaths: A ten year update. *Management Decision*, 53(10), 2407–2432. <https://doi.org/10.1108/MD-04-2015-0114>
- Bonger, W. A. (1916). *Criminality and economic conditions*. Little, Brown.
- Brady, S., Rabin, E., Wu, D., Haque, O. S., & Bursztajn, H. J. (2016). Forensic psychiatric contributions to understanding financial crime. In *Financial crimes: Psychological, technological, and ethical issues*. *International library of ethics, law, and the*

- new medicine* (pp. 107–127). Springer International Publishing.
- Braithwaite, J. (1982). Challenging just deserts: Punishing white-collar criminals. *The Journal of Criminal Law and Criminology* (1973-), 73(2), 723–763. <https://doi.org/10.2307/1143113>
- Brody, R. G., & Kiehl, K. A. (2010). From white-collar crime to red-collar crime. *Journal of Financial Crime*, 17(3), 351–364. <https://doi.org/10.1108/13590791011056318>
- Brody, R. G., Knight, R. C., & Nunez, J. N. (2020). Born and raised to be a fraudster. *Journal of Investigative Psychology and Offender Profiling*, 17(1), 46–58. <https://doi.org/10.1002/jip.1535>
- Brottman, M. (2009). The company man: A case of white-collar crime. *The American Journal of Psychoanalysis*, 69(2), 121–135. <https://doi.org/10.1057/ajp.2009.3>
- Bucy, P. H., Formby, E. P., Raspanti, M. S., & Rooney, K. E. (2008). Why do they do it: The motives, mores, and character of white collar criminals. *St. John's Law Review*, 82, 401.
- Button, M., Lewis, C., & Tapley, J. (2009). *Fraud typologies and the victims of fraud: Literature review*. National Fraud Authority.
- Button, M., Shepherd, D., & Blackburn, D. (2018). “The higher you fly, the further you fall”: White-collar criminals, “special sensitivity” and the impact of conviction in the United Kingdom. *Victims & Offenders*, 13(5), 628–650. <https://doi.org/10.1080/15564886.2017.1405133>
- Casey, F., & Markopolos, H. (2010). *No one would listen: A true financial thriller*. John Wiley.
- Casten, J. A. A. (2013). *Further test of strain theory: Does gender discrimination contribute to theft by employees?* [Dissertation, Sociology & Criminal Justice]. Old Dominion University.
- Cleckley, H. (1976). *The mask of sanity*. Mosby.
- Cohen, M. A. (2016). The costs of white-collar crime. In *Oxford handbook of white-collar crime* (pp. 78–98). Oxford University Press.
- Collins, J. M., & Schmidt, F. L. (2006). Personality, integrity, and white collar crime: A construct validity study. *Personnel Psychology*, 46(2), 295–311. <https://doi.org/10.1111/j.1744-6570.1993.tb00875.x>
- Cottino, A. (2004). White-collar crime. In C. Sumner (Ed.), *The Blackwell companion to criminology* (pp. 343–358). Blackwell.
- Cox, J., Edens, J. F., Rulseh, A., & Clark, J. W. (2016). Juror perceptions of the interpersonal-affective traits of psychopathy predict sentence severity in a white-collar criminal case. *Psychology Crime and Law*, 22, 721–740.
- Craig, J. M. (2016). *The role of personality factors in predicting embezzlement, fraud, and shoplifting*. ProQuest Information & Learning.
- Craig, J. M., & Piquero, N. L. (2017). Sensational offending: An application of sensation seeking to white-collar and conventional crimes. *Crime & Delinquency*, 63(11), 1363–1382. <https://doi.org/10.1177/0011128716674707>
- Crank, B. R., & Payne, B. K. (2015). White-collar offenders and the jail experience: A comparative analysis. *Criminal Justice Studies*, 28(4), 378–396. <https://doi.org/10.1080/1478601X.2015.1060971>
- Croall, H. (2016). What is known and what should be known about white-collar crime victimization? In *The Oxford handbook of white-collar crime* (pp. 59–77). Oxford University Press.
- Curnow, D. (2021). *The psychology of Embezzlement: The art of control and intervention*. Palgrave.
- Daly, K. (1989). Gender and varieties of white-collar crime. *Criminology*, 27(4), 769–794. <https://doi.org/10.1111/j.1745-9125.1989.tb01054.x>
- De Vries, R. E., Pathak, R. D., Van Gelder, J.-L., & Singh, G. (2017). Explaining Unethical Business Decisions: The role of personality, environment, and states. *Personality and Individual Differences*, 117, 188–197. <https://doi.org/10.1016/j.paid.2017.06.007>
- DeLisi, M., Tahja, K. N., Drury, A. J., Elbert, M. J., Caropreso, D. E., & Heinrichs, T. (2018). De novo advanced adult-onset offending: New evidence from a population of federal correctional clients. *Journal of Forensic Sciences*, 63(1), 172–177. <https://doi.org/10.1111/1556-4029.13545>
- Dennison, C. R., Finkeldey, J. G., & Rocheleau, G. C. (2021). Confounding bias in the relationship between problem gambling and crime. *Journal of Gambling Studies*, 37(2), 427–418. <https://doi.org/10.1007/s10899-020-09939-0>
- Dhami, M. K. (2007). White-collar prisoners' perceptions of audience reaction. *Deviant Behavior*, 28(1), 57–77. <https://doi.org/10.1080/01639620600987475>

- Dodge, M. (2019). *Women and white-collar crime*. Oxford Research Encyclopedia of Criminology and Criminal Justice.
- Douglas, K. S., & Otto, R. K. (2020). *Handbook of violence risk assessment*. Routledge.
- Edwards, A., & Gill, P. (2002). Crime as enterprise?—The case of “transnational organised crime”. *Crime, Law and Social Change*, 37(3), 203–223. <https://doi.org/10.1023/A:1015025509582>
- Etgar, S., Blau, I., & Eshet-Alkalai, Y. (2019). White-collar crime in academia: Trends in digital academic dishonesty over time and their effect on penalty severity. *Computers & Education*, 141, 103621. <https://doi.org/10.1016/j.compedu.2019.103621>
- Faichney, D. (2014). Autocorrect: A proposal to encourage voluntary restitution through the white-collar sentencing calculus. *J Crim L & Criminology*, 104, 389.
- Farrington, D. P. (1986). Age and crime. *Crime and Justice*, 7, 189–250. <https://doi.org/10.1086/449114>
- Federal Court of Australia (2021). *ASIC v Melissa Caddick - online file*. <https://www.fedcourt.gov.au/services/access-to-files-and-transcripts/online-files/asic-v-caddick>
- Feeley, D. (2006). Personality, environment, and the causes of white-collar crime. *Law & Psychology Review*, 30, 201–213.
- Fenwick, M. (2006). *The mouse race before the rat race: Corporate crime and student ethics*. School of Criminology-Simon Fraser University.
- Ferrari, R. (2015). Writing narrative style literature reviews. *Medical Writing*, 24(4), 230–235. <https://doi.org/10.1179/2047480615Z.000000000329>
- Filone, S., Strohmaier, H., Murphy, M., & DeMatteo, D. (2014). The impact of DSM-5's alternative model for personality disorders on criminal defendants. *Behavioral Sciences & the Law*, 32(1), 135–148. <https://doi.org/10.1002/bsl.2097>
- Ford, M. A. (2008). White-collar crime, social harm, and punishment: A critique and modification of the sixth circuit's ruling in United States v. Davis. *St. John's Law Review*, 82, 383.
- Forte, G. Jr. (2018). Investigating physicians billing for services not rendered: Fraud detection, interviewing and referral to law enforcement. *Economic Crime Forensics Capstones*, 31, 1–26.
- Frank, N. K., & Lynch, M. J. (1992). *Corporate crime, corporate violence: A primer*. Harrow and Heston.
- Frankel, T. (2012). *The Ponzi scheme puzzle: A history and analysis of con artists and victims*. Oxford University Press.
- Freiberg, A. (2019). Researching white-collar crime: An Australian perspective. In *The handbook of white-collar crime* (pp. 418–436). Wiley.
- Friedrichs, D. O. (2009). *Trusted criminals: White collar crime in contemporary society*. Cengage Learning.
- Friedrichs, D. O. (2019). White collar crime: Definitional debates and the case for a typological approach. In M. Rorie (Ed.), *The handbook of white-collar crime* (pp. 16–31). Wiley.
- Fritzon, K., Bailey, C., Croom, S., & Brooks, N. (2016). Problem personalities in the workplace: Development of the corporate personality inventory. *Psychology and Law in Europe: Routledge*, 157–184.
- Fritzon, K., Brooks, N., & Croom, S. (2020). *Corporate Psychopathy: Investigating destructive personalities in the workplace*. Palgrave.
- Galvin, M. A. (2020). Gender and white-collar crime—theoretical issues. *Criminal Justice Studies*, 33(1), 61–69. <https://doi.org/10.1080/1478601X.2020.1709954>
- Galvin, M. A., & Simpson, S. S. (2019). Prosecuting and sentencing white-collar crime in US Federal courts: Revisiting the Yale findings. In *The handbook of white-collar crime* (pp. 381–397). John Wiley & Sons.
- Garfinkel, H. (1956). Conditions of successful degradation ceremonies. *American Journal of Sociology*, 61(5), 420–424. <https://doi.org/10.1086/221800>
- Glenn, A. L., & Raine, A. (2014). *Psychopathy: An introduction to biological findings and their implications*. NYU Press.
- Gordon, R. A. (1990). Attributions for blue-collar and white-collar crime: The effects of subject and defendant race on simulated juror decisions. *Journal of Applied Social Psychology*, 20(12), 971–983. <https://doi.org/10.1111/j.1559-1816.1990.tb00385.x>
- Gordon, R. A., Bindrim, T. A., McNicholas, M. L., & Walden, T. L. (1988). Perceptions of blue-collar and white-collar crime: The effect of defendant race on simulated juror decisions. *The Journal of Social Psychology*, 128(2), 191–197. <https://doi.org/10.1080/00224545.1988.9711362>
- Gottfredson M. R., & Hirschi T. (1990). *A general theory of crime*. Stanford University Press.

- Gottschalk, P. (2012). Gender and white-collar crime: Only four percent female criminals. *Journal of Money Laundering Control*, 15(3), 362–373. <https://doi.org/10.1108/13685201211238089>
- Gottschalk, P. (2017). *Organizational opportunity and deviant behavior: Convenience in white-collar crime* (pp. vii, 243–vii). Edward Elgar Publishing.
- Gottschalk, P. (2020). Gender and crime: Convenience for pink-collar offenders. *Deviant Behavior*, 1–15. <https://doi.org/10.1080/01639625.2020.1794270>
- Gottschalk, P. (2021). From crime convenience to punishment inconvenience: The case of detected white-collar offenders. *Deviant Behavior*, 42(8), 1021–1011. <https://doi.org/10.1080/01639625.2020.1717840>
- Gottschalk, P., & Glasø, L. (2013). Corporate crime does pay! The relationship between financial crime and imprisonment in white-collar crime. *International Letters of Social and Humanistic Sciences*, 5, 63–78. <https://doi.org/10.18052/www.scipress.com/ILSHS.5.63>
- Gottschalk, P., & Glasø, L. (2013). Gender in white-collar crime: An empirical study of pink-collar criminals. *International Letters of Social and Humanistic Sciences*, 4, 22–34.
- Gottschalk, P., & Gunnesdal, L. (2018). White-collar crime research. In *White-collar crime in the shadow economy: Lack of detection, investigation and conviction compared to social security fraud* (pp. 1–14). Springer International Publishing.
- Goulette, N. (2020). What are the gender differences in risk and needs of males and females sentenced for white-collar crimes? *Criminal Justice Studies*, 33(1), 31–45. <https://doi.org/10.1080/1478601X.2020.1709951>
- Green, B. N., Johnson, C. D., & Adams, A. (2006). Writing narrative literature reviews for peer-reviewed journals: Secrets of the trade. *Journal of Chiropractic Medicine*, 5(3), 101–117. [https://doi.org/10.1016/S0899-3467\(07\)60142-6](https://doi.org/10.1016/S0899-3467(07)60142-6)
- Green, S. P. (2004). Moral ambiguity in white collar criminal law. *Notre Dame JL Ethics & Pub Pol'y*, 18, 501.
- Harbinson, E., Benson, M. L., & Latessa, E. J. (2019). Assessing risk among white-collar offenders under federal supervision in the community. *Criminal Justice and Behavior*, 46(2), 261–279. <https://doi.org/10.1177/0093854818810317>
- Hare, R. D., Harpur, T. J., Hakstian, A. R., Forth, A. E., Hart, S. D., & Newman, J. P. (1990). The revised psychopathy checklist: Reliability and factor structure. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 2(3), 338–341. <https://doi.org/10.1037/1040-3590.2.3.338>
- Heath, J. (2008). Business ethics and moral motivation: A criminological perspective. *Journal of Business Ethics*, 83(4), 595–614. <https://doi.org/10.1007/s10551-007-9641-8>
- Hollinger, R. C., & Clark, J. P. (1982). Formal and informal social controls of employee deviance. *The Sociological Quarterly*, 23(3), 333–343. <https://doi.org/10.1111/j.1533-8525.1982.tb01016.x>
- Holtfreter, K. (2005). Is occupational fraud “typical” white-collar crime? A comparison of individual and organizational characteristics. *Journal of Criminal Justice*, 33(4), 353–365. <https://doi.org/10.1016/j.jcrimjus.2005.04.005>
- Holtfreter, K. (2013). Gender and “other people’s money”: An analysis of white-collar offender sentencing. *Women & Criminal Justice*, 23(4), 326–344. <https://doi.org/10.1080/08974454.2013.821015>
- Howe, J., Falkenbach, D., & Massey, C. (2014). The relationship among psychopathy, emotional intelligence, and professional success in finance. *International Journal of Forensic Mental Health*, 13(4), 337–347. <https://doi.org/10.1080/14999013.2014.951103>
- Huisman, W. (2019). Blurred lines: Collusions between legitimate and illegitimate organizations. In *The handbook of white-collar crime* (pp. 139–158). Wiley & Sons.
- Hunter, B. (2019). The correctional experiences of white-collar offenders. In *The handbook of white-collar crime* (pp. 297–313). Wiley.
- Jesilow, P., Pontell, H. N., & Geis, G. (1993). *Prescription for profit: How doctors defraud Medicaid*. University of California Press.
- Kapardis, A., & Krambia-Kapardis, M. (2004). Enhancing fraud prevention and detection by profiling fraud offenders. *Criminal Behaviour and Mental Health: CBMH*, 14(3), 189–201. <https://doi.org/10.1002/cbm.586>
- Kapardis, M. K. (1999). *Enhancing the auditor’s fraud detection ability: An interdisciplinary approach*. Peter Lang.
- Kendall, C. C. (2010). Rape as a violent crime in aid of racketeering activity. *Law & Psychol Rev*, 34(91), 107.
- Kender, K. S., Maes, H. H., Lönn, S. L., Morris, N. A., Lichtenstein, P., Sundquist, J., & Sundquist, K. (2015). A Swedish national

- twin study of criminal behavior and its violent, white-collar and property subtypes. *Psychological Medicine*, 45(11), 2253–2262. <https://doi.org/10.1017/S0033291714002098>
- Kerley, K. R., & Copes, H. (2004). The effects of criminal justice contact on employment stability for white-collar and street-level offenders. *International Journal of Offender Therapy and Comparative Criminology*, 48(1), 65–84. <https://doi.org/10.1177/0306624X03256660>
- Kleemans, E. R., & Van de Bunt, H. G. (2008). Organised crime, occupations and opportunity. *Global Crime*, 9(3), 185–197. <https://doi.org/10.1080/17440570802254254>
- Kolz, A. R. (1999). Personality predictors of retail employee theft and counterproductive behavior. *Journal of Professional Services Marketing*, 19(2), 107–114. https://doi.org/10.1300/J090v19n02_06
- Krokoszinski, L., Westenberger, A., & Hosser, D. (2018). Emotional responsiveness in convicted fraudsters: A study on baseline activation of the anterior insula and its influence on moral decision-making. *The Journal of Forensic Psychiatry & Psychology*, 29(4), 527–543. <https://doi.org/10.1080/14789949.2018.1425470>
- Langton, L., & Piquero, N. L. (2007). Can general strain theory explain white-collar crime? A preliminary investigation of the relationship between strain and select white-collar offenses. *Journal of Criminal Justice*, 35(1), 1–15. <https://doi.org/10.1016/j.jcrimjus.2006.11.011>
- Laursen, B., Plauborg, R., Ekholm, O., Larsen, C. V. L., & Juel, K. (2016). Problem gambling associated with violent and criminal behaviour: A Danish population-based survey and register study. *Journal of Gambling Studies*, 32(1), 25–34. <https://doi.org/10.1007/s10899-015-9536-z>
- Lee, A. R., & Chávez, K. (2020). Are women more averse to corruption than men? The case of South Korea. *Social Science Quarterly*, 101(2), 473–489. <https://doi.org/10.1111/ssqu.12768>
- Lee, J. J., Gino, F., Jin, E. S., Rice, L. K., & Josephs, R. A. (2015). Hormones and ethics: Understanding the biological basis of unethical conduct. *Journal of Experimental Psychology. General*, 144(5), 891–897. <https://doi.org/10.1037/xge0000099>
- Lind, K., Hellman, M., Obstbaum, Y., & Salonen, A. H. (2021). Associations between gambling severity and criminal convictions: Implications for the welfare state. *Addiction Research & Theory*, 1–12. <https://doi.org/10.1080/16066359.2021.1902995>
- Ling, S., Raine, A., Yang, Y., Schug, R. A., Portnoy, J., & Ho, M.-H. R. (2019). Increased frontal lobe volume as a neural correlate of gray-collar offending. *Journal of Research in Crime and Delinquency*, 56(2), 303–336. <https://doi.org/10.1177/00224278188802337>
- Lingnau, V., Fuchs, F., & Dehne-Niemann, T. E. (2017). The influence of psychopathic traits on the acceptance of white-collar crime: Do corporate psychopaths cook the books and misuse the news? *Journal of Business Economics*, 87(9), 1193–1227. <https://doi.org/10.1007/s11573-017-0864-6>
- Listwan, S. J., Piquero, N. L., & Van Voorhis, P. (2010). Recidivism among a white-collar sample: Does personality matter? *Australian & New Zealand Journal of Criminology*, 43(1), 156–174. <https://doi.org/10.1375/acri.43.1.156>
- Logan, M. W., Morgan, M. A., Benson, M. L., & Cullen, F. T. (2019). Coping with imprisonment: Testing the special sensitivity hypothesis for white-collar offenders. *Justice Quarterly*, 36(2), 225–254. <https://doi.org/10.1080/07418825.2017.1396488>
- Maesen, W. A. (1991). Fraud in mental health practice: A risk management perspective. *Administration and Policy in Mental Health*, 18(6), 421–432. <https://doi.org/10.1007/BF00707315>
- Mann, K. (1985). *Defending white-collar crime: A portrait of attorneys at work*. Yale University Press.
- Marriott, L. (2018). Pursuit of white-collar crime in New Zealand. *Journal of Australian Taxation*, 20, 35.
- Marriott, L. (2020). White-collar crime: The privileging of serious financial fraud in New Zealand. *Social & Legal Studies*, 29(4), 486–506. <https://doi.org/10.1177/0964663919883367>
- Mason, K. A. (2007). Punishment and paperwork: White-collar offenders under community supervision. *American Journal of Criminal Justice*, 31(2), 23–36. <https://doi.org/10.1007/s12103-007-9001-3>
- McCall, C. C., & Grogan, H. J. (1974). *Rehabilitating forgers* (pp. 263–268). Sage Publications. <https://doi.org/10.1177/001112877402000306>
- McGee, T. R., & Moffitt, T. E. (2018). The developmental taxonomy. In *The Oxford handbook of developmental and life-course*

- criminology* (p. 149). Oxford University Press.
- Menard, S., Morris, R. G., Gerber, J., & Covey, H. C. (2011). Distribution and correlates of self-reported crimes of trust. *Deviant Behavior*, 32(10), 877–917. <https://doi.org/10.1080/01639625.2010.514221>
- Murphy, K., & Harris, N. (2007). Shaming, shame and recidivism: A test of reintegrative shaming theory in the white-collar crime context. *British Journal of Criminology*, 47(6), 900–917. <https://doi.org/10.1093/bjc/azm037>
- Naso, R. C. (2012). When money and morality collide: White-collar crime and the paradox of integrity. *Psychoanalytic Psychology*, 29(2), 241–254. <https://doi.org/10.1037/a0024499>
- Naylor, R. T. (2017). 2. Predators, parasites, or free-market pioneers: Reflections on the nature and analysis of profit-driven crime. In *Critical reflections on transnational organized crime, money laundering, and corruption* (pp. 35–54.). University of Toronto Press.
- Nee, C., Button, M., Shepherd, D., Blackburn, D., & Leal, S. (2019). The psychology of the corrupt: some preliminary findings. *Journal of Financial Crime*, 26(2), 488–495. <https://doi.org/10.1108/JFC-03-2018-0032>
- Ogunbanjo, G. A., & van Bogaert, D. K. (2013). Ethics in health care: Healthcare fraud. *South African Family Practice*, 55(1), S10–S3. <https://doi.org/10.1080/20786204.2013.10874314>
- Passas, N. (2005). Lawful but awful: 'Legal corporate crimes. *The Journal of Socio-Economics*, 34(6), 771–786. <https://doi.org/10.1016/j.socec.2005.07.024>
- Paternoster, R., & Simpson, S. (1996). Sanction threats and appeals to morality: Testing a rational choice model of corporate crime. *Law & Society Review*, 30(3), 549–583. <https://doi.org/10.2307/3054128>
- Payne, B. K. (2003). *Incarcerating white-collar offenders: The prison experience and beyond*. Charles C Thomas Publisher.
- Perri, F. S. (2011). White-collar criminals: The 'kinder, gentler' offender? *Journal of Investigative Psychology and Offender Profiling*, 8(3), 217–241. <https://doi.org/10.1002/jip.140>
- Perri, F. S. (2015). Red collar crime. *International Journal of Psychological Studies*, 8(1), 61–84. <https://doi.org/10.5539/ijps.v8n1p61>
- Perri, F. S., & Brody, R. G. (2011). The Sallie Rohrbach story: Lessons for auditors and fraud examiners. *Journal of Financial Crime*, 18(1), 93–104. <https://doi.org/10.1108/13590791111098825>
- Perri, F. S., & Lichtenwald, T. G. (2008). The arrogant chameleons: Exposing fraud-detection homicide. *Forensic Examiner*, 17(1), 52–69.
- Perri, F. S., Lichtenwald, T. G., & Mieczkowska, E. M. (2014). Sutherland, Cleckley and beyond: White-collar crime and psychopathy. *International Journal of Psychological Studies*, 6(4), 71. <https://doi.org/10.5539/ijps.v6n4p71>
- Perri, F., & Lichtenwald, T. (2007). Fraud detection homicide: A proposed FBI crime classification. *Forensic Examiner*, 16(4), 18–29.
- Piff, P. K., Stancato, D. M., & Horberg, E. (2016). Wealth and wrongdoing: Social class differences in ethical reasoning and behavior. In J.-W. van Prooijen & P. A. M. van Lange (Eds.), *Cheating, corruption, and concealment: The roots of dishonesty* (pp. 185–207). Cambridge University Press.
- Piquero, N. L. (2012). The only thing we have to fear is fear itself: Investigating the relationship between fear of falling and white-collar crime. *Crime & Delinquency*, 58(3), 362–379. <https://doi.org/10.1177/0011128711405005>
- Piquero, N. L. (2018). White-collar crime is crime: Victims hurt just the same. *Criminology & Public Policy*, 17(3), 595–600. <https://doi.org/10.1111/1745-9133.12384>
- Piquero, N. L., Tibbetts, S. G., & Blankenship, M. B. (2005). Examining the role of differential association and techniques of neutralization in explaining corporate crime. *Deviant Behavior*, 26(2), 159–188. <https://doi.org/10.1080/01639620590881930>
- Piquero, N. L., Vieraitis, L. M., Piquero, A. R., Tibbetts, S. G., & Blankenship, M. (2013). The interplay of gender and ethics in corporate offending decision-making. *Journal of Contemporary Criminal Justice*, 29(3), 385–398. <https://doi.org/10.1177/1043986213496379>
- Pollack, H., & Smith, A. B. (1983). White-collar v. street crime sentencing disparity: How judges see the problem. *Judicature*, 67, 175.
- Ponzi v. Fessenden, 258 U.S. 254 (1922).
- Poortinga, E., Lemmen, C., & Jibson, M. D. (2006). A case control study: White-collar defendants compared with defendants charged with other nonviolent theft. *Journal*

- of the *American Academy of Psychiatry and the Law Online*, 34(1), 82–89.
- Pratt, T. C., Cullen, F. T., Sellers, C. S., Thomas Winfree, L., Madensen, T. D., Daigle, L. E., Fearn, N. E., & Gau, J. M. (2010). The empirical status of social learning theory: A meta-analysis. *Justice Quarterly*, 27(6), 765–802. <https://doi.org/10.1080/07418820903379610>
- Price, M., & Norris, D. (2009). White-collar crime: Corporate and securities and commodities fraud. *Journal of the American Academy of Psychiatry and the Law*, 37(4), 538–544.
- Price, M., & Norris, D. M. (2009). Health care fraud: Physicians as white collar criminals? *Journal of the American Academy of Psychiatry and the Law*, 37, 286–289.
- Ragatz, L. L., Fremouw, W., & Baker, E. (2012). The psychological profile of white-collar offenders: Demographics, criminal thinking, psychopathic traits, and psychopathology. *Criminal Justice and Behavior*, 39(7), 978–997. <https://doi.org/10.1177/0093854812437846>
- Ragatz, L., & Fremouw, W. (2010). A critical examination of research on the psychological profiles of white-collar criminals. *Journal of Forensic Psychology Practice*, 10(5), 373–402. <https://doi.org/10.1080/15228932.2010.489846>
- Raine, A., Laufer, W. S., Yang, Y., Narr, K. L., Thompson, P., & Toga, A. W. (2012). Increased executive functioning, attention, and cortical thickness in white-collar criminals. *Human Brain Mapping*, 33(12), 2932–2940. <https://doi.org/10.1002/hbm.21415>
- Rebovich, D. (2021). *The changing face of financial crime: New technologies, new offenders, new victims, and new strategies for prevention and control*. Taylor & Francis.
- Reiman, J., & Leighton, P. (2016). *The rich get richer and the poor get prison: Ideology, class, and criminal justice*. Taylor & Francis.
- Ribeiro, R., Guedes, I. S., & Cruz, J. N. (2019). White-collar offenders vs. common offenders: a comparative study on personality traits and self-control. *Crime, Law and Social Change*, 72(5), 607–622. <https://doi.org/10.1007/s10611-019-09844-7>
- Ross, E. A. (1907). *Sin and society: An analysis of latter-day iniquity*. Mifflin.
- Ruggiero, V. (2017). *Dirty money: On financial delinquency*. OUP Catalogue.
- Ruhland, E. L., & Selzer, N. (2020). Gender differences in white-collar offending and supervision. *Criminal Justice Studies*, 33(1), 13–30. <https://doi.org/10.1080/1478601X.2020.1709950>
- Sachs, M. V. (2001). Harmonizing Civil and Criminal Enforcement of Federal Regulatory Statutes: The Case of the Securities Exchange Act of 1934. *University of Illinois Law Review*, 2001(4), 1025.
- Sariaslan, A., Arseneault, L., Larsson, H., Lichtenstein, P., & Fazel, S. (2020). Risk of subjection to violence and perpetration of violence in persons with psychiatric disorders in Sweden. *JAMA Psychiatry*, 77(4), 359–367. <https://doi.org/10.1001/jamapsychiatry.2019.4275>
- Schoepfer, A., Piquero, N. L., & Langton, L. (2014). Low self-control versus the desire-for-control: An empirical test of white-collar crime and conventional crime. *Deviant Behavior*, 35(3), 197–214. <https://doi.org/10.1080/01639625.2013.834758>
- Senate Economics References Committee. (2017). *'Lifting the fear and suppressing the greed': Penalties for white-collar crime and corporate and financial misconduct in Australia* (Report No. 1760105449). Senate Economics References Committee.
- Severson, R. E., Kodatt, Z. H., & Burruss, G. W. (2019). Explaining white-collar crime: Individual-level theories. In *The handbook of white-collar crime* (pp. 159–174). Wiley & Sons.
- Shover, N., & Hochstetler, A. (2005). *Choosing white-collar crime*. Cambridge University Press.
- Simon, R. J. (1996). Types of criminal acts women are likely to commit. *Psychological Reports*, 79(2), 669–670. <https://doi.org/10.2466/pr0.1996.79.2.669>
- Simpson, S. S. (2019). Reimagining Sutherland 80 years after white-collar crime. *Criminology*, 57(2), 189–207. <https://doi.org/10.1111/1745-9125.12206>
- Simpson, S. S., & Piquero, N. L. (2002). Low self-control, organizational theory, and corporate crime. *Law & Society Review*, 36(3), 509–548. <https://doi.org/10.2307/1512161>
- Smith, R. G., & Budd, C. (2009). Consumer fraud in Australia: Costs, rates and awareness of the risks in 2008. *Trends and Issues in Crime and Criminal Justice*, (382), 1–6.
- Stadler, W. A., & Benson, M. L. (2012). Revisiting the guilty mind: The neutralization of white-collar crime. *Criminal Justice*

- Review, 37(4), 494–511. <https://doi.org/10.1177/0734016812465618>
- Stadler, W. A., Benson, M. L., & Cullen, F. T. (2013). Revisiting the special sensitivity hypothesis: The prison experience of white-collar inmates. *Justice Quarterly*, 30(6), 1090–1114. <https://doi.org/10.1080/07418825.2011.649296>
- Sutherland, E. H. (1983). *White collar crime: The uncut version*. Yale University Press.
- The Government of India v Nirav Deepak Modi (2021). <https://www.judiciary.uk/wp-content/uploads/2021/02/GOI-v.-Nirav-Modi-judgment.pdf>
- Timofeyev, Y., & Jakovljevic, M. (2020). Fraudster's and victims' profiles and loss predictors' hierarchy in the mental healthcare industry in the US. *Journal of Medical Economics*, 23(10), 1111–1122. <https://doi.org/10.1080/13696998.2020.1801454>
- Torrey, E. F., Jaffe, D., Director, M., Geller, J. L., & Lamb, R. (2015). *Fraud, waste and excess profits: The fate of money intended to treat people with serious mental illness*. Mental Illness Policy.
- Turner, M. J. (2014). *An investigation of big five personality and propensity to commit white-collar crime. Advances in accounting behavioral research, Vol 17. Advances in accounting behavioral research* (pp. 57–94). Emerald Group Publishing.
- United States Department of Justice (2020). *United States V. Bernard L. Madoff and related cases*. <https://www.justice.gov/usao-sdny/programs/victim-witness-services/united-states-v-bernard-l-madoff-and-related-cases>
- van Onna, J. H. R., & Denkers, A. J. M. (2019). Social bonds and white-collar crime: A two-study assessment of informal social controls in white-collar offenders. *Deviant Behavior*, 40(10), 1206–1225. <https://doi.org/10.1080/01639625.2018.1472936>
- Van Onna, J. H., Van Der Geest, V. R., Huisman, W., & Denkers, A. J. (2014). Criminal trajectories of white-collar offenders. *Journal of Research in Crime and Delinquency*, 51(6), 759–784. <https://doi.org/10.1177/0022427814531489>
- Van Slyke, S. R., & Bales, W. D. (2013). Gender dynamics in the sentencing of white-collar offenders. *Criminal Justice Studies*, 26(2), 168–196. <https://doi.org/10.1080/1478601X.2012.729707>
- Vendemia, J. M. C., & Nye, J. M. (2018). The neuroscience of deception. In A. R. Beech, A. J. Carter, R. E. Mann, & P. Rotshtein (Eds.), *The wiley blackwell handbook of forensic neuroscience* (2 Volume Set). John Wiley & Sons.
- Vieraitis, L. M., Piquero, N. L., Piquero, A. R., Tibbetts, S. G., & Blankenship, M. (2012). Do women and men differ in their neutralizations of corporate crime? *Criminal Justice Review*, 37(4), 478–493. <https://doi.org/10.1177/0734016812465745>
- Walters, G. D., & Geyer, M. D. (2004). Criminal Thinking and Identity in Male White-Collar Offenders. *Criminal Justice and Behavior*, 31(3), 263–281. <https://doi.org/10.1177/0093854803262508>
- Watkins, J. C. (1977). White-collar crime, legal sanctions, and social control. *Crime & Delinquency*, 23(3), 290–303. <https://doi.org/10.1177/00111287702300305>
- Weidenfeld, K., & Spire, A. (2017). Punishing tax offenders in France and Great Britain: two criminal policies. *Journal of Financial Crime*, 24(4), 574–588. <https://doi.org/10.1108/JFC-05-2016-0030>
- Weisburd, D., Waring, E., & Chayet, E. F. (2001). *White-collar crime and criminal careers*. Cambridge University Press.
- Weisburd, D., Waring, E., & Chayet, E. S. (1995). Deterrence in a sample of offenders convicted of white collar crimes. *Criminology*, 33(4), 587–607.
- Weisburd, D., Wheeler, S., Waring, E., & Bode, N. (1991). *Crimes of the middle classes: White-collar offenders in the federal courts*. Yale University Press.
- Wheeler, S., & Rothman, M. L. (1982). The organization as weapon in white-collar crime. *Michigan Law Review*, 80(7), 1403–1426. <https://doi.org/10.2307/1288554>
- Wheeler, S., Mann, K., & Sarat, A. (1988). *Sitting in judgment: The sentencing of white-collar criminals*. Yale University Press.
- Wheeler, S., Weisburd, D., & Bode, N. (1982). Sentencing the white-collar offender: Rhetoric and reality. *American Sociological Review*, 47(5), 641–659. <https://doi.org/10.2307/2095164>
- Wheeler, S., Weisburd, D., Waring, E., & Bode, N. (1987). White collar crimes and criminals. *American Criminal Law Review*, 25, 331.

Appendix.

Database search terms

The search terms for each database were as follows:

PsychNet search terms: ‘white collar crim*’ OR ‘financial crim*’ OR fraud OR Ponzi OR embezzlement OR bribery OR ‘wage theft’ OR racketeering OR laundering OR forgery AND Psych* OR mental OR personality AND demographics AND characteristics. This search generated 2174 results.

EbscoHost Health business elite, Psychology and Behavioral Sciences Collection search terms: ‘white collar crim*’ OR ‘financial crim*’ OR fraud OR Ponzi OR embezzlement OR bribery OR ‘wage theft’ OR racketeering OR laundering OR forgery AND Psych* OR mental OR personality OR

demographics OR characteristics. This search generated 397 results.

Pubmed search terms: (psychology OR psychiatry OR mental OR personality OR demographics OR characteristics) AND (white collar crime OR white collar criminal OR financial crime OR fraud OR ponzi OR embezzlement OR bribery OR racketeering OR laundering OR forgery). This search generated 744 results. In Pubmed, the following terms were also applied as exclusion terms, to reduce the large number of irrelevant results regarding industrial cleaning (from the search term ‘laundering’) and the psychological concept of imposter syndrome (from the search term ‘fraud’): NOT (microbial OR microbes OR bacterial OR clothing OR attire OR laundry OR impostor OR washing machine).