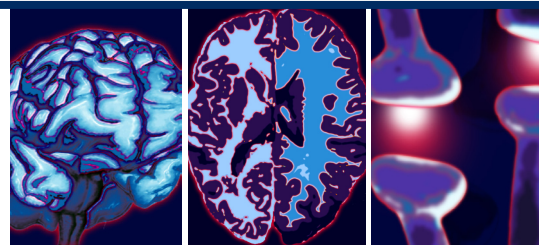


## REVIEW

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# Misconceptions regarding psychopathic personality: implications for clinical practice and research

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## Practice points

- Psychopathic personality (psychopathy) is a condition marked by a constellation of traits, including callousness, guiltlessness, dishonesty, superficial charm, egocentricity and poor impulse control.
- Psychopathy should not be confused with antisocial personality disorder, although these conditions overlap; the former is a largely personality-based condition, the latter a largely behavior-based condition.
- Most recent evidence suggests that psychopathy is not an all-or-none phenomenon, but rather falls on a continuum with normality. Moreover, psychopathy broadly construed appears not to be a homogeneous condition, but rather a heterogeneous category containing at least two potentially overlapping subtypes.
- Psychopathy is more common among males than females, but is not only a male disorder.
- Despite some clinical assertions to the contrary, psychopathy is not associated with a complete absence of emotional responsiveness.
- Although psychopathy is a risk factor for violence, this heightened risk appears to be modest. Psychopathy bears a negligible or negative association with psychosis, and is not presently an adequate basis for a 'not guilty verdict by reason of insanity' defense.
- Clinical lore notwithstanding, questionnaires can help to detect many of the core features of psychopathy.
- Psychopathy measures are not unique or unparalleled in their capacity to predict violence, although they are clinically useful in this regard. The association between psychopathy measures and future physical aggression appears to stem from their inclusion of past physical aggression rather than the unique features of psychopathy.
- The view that psychopaths are 'born, not made' is oversimplified, as environmental factors play a key role in the genesis of the condition. Physical abuse and neglectful parenting may contribute to risk for psychopathy, but the evidence for these assertions is equivocal.
- The longstanding clinical view that psychopaths are untreatable has not been supported by recent research; moreover, the claim that psychotherapy routinely makes psychopaths worse derives primarily from one methodologically limited study.

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**SUMMARY** Psychopathy is a serious condition comprising affective and interpersonal deficits, as well as potentially harmful behaviors. Nevertheless, it is also the subject of numerous myths and misconceptions, spanning etiology, assessment, treatment and even its very definition. These misunderstandings are prevalent among both laypersons and professionals, and propagate misguided attitudes toward individuals with this disorder. This article addresses seven major areas of misunderstanding regarding psychopathy and more specific mistaken beliefs within each domain. It also provides scientific evidence that reflects an up-to-date understanding of this condition with the aim of fostering more effective and evidence-based practice and treatment.

Psychopathic personality (psychopathy) is a widely misunderstood psychological disorder [1,2]. The confusion surrounding psychopathy may be fueled by media depictions of extraordinary violence or audacity. Consider Ted Bundy, one of the most infamous serial killers in history; or Bernard Madoff, the con-man extraordinaire who wreaked financial destruction on an unprecedented scale. Moreover, fictional personas exemplifying many of these flamboyant characteristics, such as psychiatrist Hannibal Lecter in the 1991 film ‘The Silence of the Lambs’, perpetuate the stereotype of the psychopath as a ruthless and fatally charming caricature.

In other cases, the media depict psychopaths as deranged and out of touch with reality. Such mischaracterizations have made their way into reference sources. Roget’s 21st Century Thesaurus lists ‘insane person’, ‘lunatic’, ‘mad person’, ‘maniac’, ‘mental case’, ‘nutcase’, ‘psycho’ and ‘psychotic’, among others, as synonyms for ‘psychopath’ [3]. Using the synonym search tool by Google [201], ‘psychopathy’ is defined as a ‘mental illness or disorder’, reflecting a confusion between psychopathy and psychopathology.

The article delineates the most prevalent myths, misconceptions and misunderstandings surrounding psychopathy, and their implications for clinical practice and research (Table 1). It does not intend to provide a comprehensive review of recent psychopathy research; for this purpose, we refer interested readers to two excellent edited texts [4,5]. Along the way, we supply readers with accurate information concerning this condition. Before doing so, we review key issues concerning the definition, clinical description and assessment of psychopathy.

### Psychopathy: definition, description & measurement

In his classic book, ‘The Mask of Sanity’, Cleckley described psychopaths as exhibiting a façade

of likeability that conceals profound deficits in social emotions, especially remorse, empathy and interpersonal attachment [6]. Cleckley also referred to psychopaths’ “failure to learn from experience,” but research indicates that psychopaths’ deficits are limited more specifically to a failure to learn from punishment [7]. Nevertheless, even psychopaths can learn from punishment when they are motivated to do so, such as by loss of money [8,9]. McCord and McCord later described guiltlessness and lovelessness as the two core features of psychopathy [10]. Today, researchers regard psychopathy as a constellation of traits encompassing emotional, interpersonal and behavioral realms, such as callousness, guiltlessness, dishonesty, superficial charm, egocentricity, poor impulse control and unmotivated antisocial behavior [11]. Although most psychopathy research focuses on adults, evidence suggests that a subset of behaviorally disordered children, especially those with callous/unemotional traits (e.g., lack of guilt and empathy), are at heightened risk for psychopathy in adolescence and perhaps adulthood [5].

Much or most of the early work on psychopathy focused on prison samples, which presumably consist largely of unsuccessful psychopaths [12]. Nevertheless, over the past two decades, some researchers have increasingly become interested in the possibility of ‘successful’ or ‘adaptive’ psychopaths, that is, individuals who display the characteristic interpersonal and affective features of psychopathy but who are functioning adequately in society [13–15]. Some authors have speculated that such individuals preferentially populate certain adaptive niches in society, such as law enforcement, the military, business and politics [16,17]. The existence of successful psychopathy remains controversial, however, and some authors have expressed doubts that the core features of psychopathy predispose to societal success [18].

Most factor analyses suggest that psychopathy is underpinned by two moderately correlated

**Table 1. Major misconceptions regarding psychopathic personality.**

<b>Fiction</b>	<b>Fact</b>
Psychopathy and antisocial personality disorder are synonymous	Psychopathy partly encompasses antisocial behavior, but is characterized by a greater degree of interpersonal and affective dysfunction
Psychopathy is an all-or-none entity	Psychopathy and its component traits appear to be dimensional
Psychopathy is a single condition	Psychopathy can be separated into at least two subtypes: primary and secondary
Psychopathy exists exclusively in males	Studies of PCL-R psychopathy among female inmates have reported prevalence rates ranging from 9 to 31%
All psychopaths are clever and conniving	Global psychopathy levels are not highly related to intelligence
Psychopaths do not know the difference between right and wrong	Psychopaths do understand the difference between right and wrong, but do not care
All psychopaths are violent	Psychopathy is only moderately related to violence
Psychopaths engage only in instrumental aggression	Although psychopathy is positively associated with instrumental aggression, psychopathic individuals are not exclusively instrumentally aggressive. In fact, reactive aggression is more frequent than instrumental aggression among psychopaths
Psychopathy and psychosis are closely related	Psychopathy and psychosis are negligibly or even negatively correlated
Psychopathy cannot be assessed via self-report instruments	Total scores on questionnaire indices of psychopathy, such as the PPI-R and Levenson Self-Report Psychopathy Scale, correlate moderately to highly with observer- and interview-based measures of psychopathy
Psychopathy scales are unparalleled predictors of violence	Meta-analytic studies reveal no significant difference between the PCL-R and actuarial measures of violence for forecasting physical aggression
Psychopaths are born, not made	The heritability of psychopathy is substantial, but far less than 100%, meaning that still undetermined environmental factors play a major causal role in psychopathy
Early abuse and inadequate parenting are causes of psychopathy	The link between child abuse and psychopathy is limited to antisocial behaviors, and does not extend to the distinctive affective and interpersonal traits of the disorder
Psychopaths display an absence of all emotions	Psychopaths appear quite capable of certain emotions, such as anger
Psychopaths are untreatable	Controlled studies raise the possibility of positive therapeutic outcomes in psychopathic individuals, especially youth, following intensive inpatient treatment
Treatment makes psychopathy worse	There is no well-replicated evidence that psychological treatment makes psychopaths worse; this claim derives primarily from one study marked by methodological limitations

PCL-R: Psychopathy Checklist-Revised; PPI-R: Psychopathic Personality Inventory-Revised.

dimensions. One is affective and interpersonal, and comprises the core personality features delineated by Cleckley [6], and McCord and McCord [10]. The second dimension comprises an antisocial and impulsive lifestyle [19,20]. Some researchers further postulate narrower facets within these dimensions [21,11]. A more recent ‘triarchic’ conceptualization posits disinhibition (poor impulse control), boldness and meanness as the three overarching dimensions that combine to generate the full condition of psychopathy [22].

Several theoretical models have been proposed to explain the causes of psychopathy; we describe two here. The fearlessness model proposes that psychopathy stems from deficits in responsiveness to fear-provoking stimuli [17]. These deficits ostensibly give rise to the other features of the condition, including charm, guiltlessness and poor impulse control. By contrast, the response modulation model posits that when primed with a dominant response set,

especially reward, psychopaths are largely oblivious of external cues, including punishment [23].

A number of well-validated scales are available to assess psychopathy in clinical and research settings. The Psychopathy Checklist-Revised (PCL-R) consists of 20 items designed to measure psychopathy in criminal samples [11]; it makes use of a semi-structured interview and review of institutional files [24]. Several variations of the PCL-R have been developed, including an adolescent version, the Psychopathy Checklist-Youth Version [25]. The Psychopathic Personality Inventory-Revised (PPI-R) [26], Self-Report Psychopathy measure [27] and Levenson Self-Report Psychopathy Scale [28] are well-validated self-report tools developed to detect psychopathy in both noncriminal and criminal samples. Because they can be easily administered outside of prison walls, these self-report indices have facilitated research on the manifestations of psychopathy in community and student samples.

### Classification of psychopathy: fiction & fact

The classification of psychopathy is a persistent source of misunderstanding. The relation of psychopathy to its ostensible DSM-IV counterpart, antisocial personality disorder (ASPD), is a cause of particular confusion [29]. Many authors presume that these constructs are essentially interchangeable, an error compounded by the text of DSM-IV, which avers that “ASPD has also been referred to as psychopathy” [30].

In fact, although psychopathy and ASPD are overlapping conditions, they differ operationally and empirically. Nevertheless, there is ongoing debate regarding the extent of these differences [31]. Operationally, ASPD is characterized primarily by a chronic pattern of violation of social norms, such as lying, stealing and cheating, although to a lesser extent it also includes personality traits, such as lack of remorse [30]. By contrast, psychopathy, although typically encompassing certain antisocial behaviors, involves a greater degree of interpersonal and affective dysfunction, such as egocentricity and lack of empathy [32]. In other words, ASPD is defined largely by overt behaviors, especially antisocial and criminal actions, whereas psychopathy is defined largely by personality traits. Empirically, categorically measured psychopathy and ASPD overlap only moderately [11]. For example, in prison settings, ASPD is approximately two- to three-times as common as PCL-R psychopathy [33]. Recent research also suggests that individuals with ASPD and the affective traits of psychopathy exhibit differences in brain structure (specifically, reduced gray matter volume in certain regions) compared with individuals with ASPD alone [34]. The originally proposed DSM-5 diagnosis of antisocial/psychopathic personality disorder was expected to bring the operationalization of the disorder more closely in line with those of Cleckley [6], and McCord and McCord [10], by emphasizing deficits in affective features, such as empathy and interpersonal intimacy, as well as traits within the domains of antagonism and disinhibition [202]. Nevertheless, this proposed new diagnosis has since been removed from the main text of the manual.

The terminological confusion does not end there. Partridge coined the term ‘sociopathy’ to underscore what he believed to be the environmental etiology of the disorder [35]. Today, some authors refer to psychopathy and sociopathy as equivalent, whereas others reserve the

former term for a pattern of antisocial behavior produced primarily by genetic factors and the latter term for a pattern of antisocial behavior produced primarily by social disadvantage [17]. Still, others use the term sociopathy to designate a condition, such as ASPD, marked by chronic antisocial behavior [36,37]. Nevertheless, sociopathy is not a formal psychiatric or psychological term, and its indiscriminate use appears to have engendered little more than conceptual confusion.

### ■ Clinical & research implications

Mental health professionals should understand that psychopathy and ASPD, although overlapping moderately, are not isomorphic. Moreover, psychopathy is aligned more closely with the core affective and interpersonal deficits outlined by Cleckley and others [6,10,11].

### Psychopathy or psychopathies?

#### Fiction & fact

Most authors presume that psychopathy is an all-or-none entity. Some initial findings suggested that psychopathy, or at least its associated antisocial behaviors, is underpinned by a taxon: a category in nature [38–40]. The existence of a taxon implies that individuals with a condition differ in kind rather than degree from other individuals. Yet researchers have generally not replicated these results, instead finding that psychopathy and its component traits, whether measured by the PCL-R or the PPI-R, are dimensional [41–43]. These findings could indicate that psychopathy is underpinned by one dimension or by multiple dimensions. A growing cadre of researchers advocate a dimensional approach to psychopathy in light of converging evidence that personality disorders in general can be conceptualized in terms of extremes on one or more higher-order dimensions, such as disinhibition and antagonism [44,45].

An allied question is whether psychopathy is a homogeneous or heterogeneous disorder. Many researchers assume the former [46]. This presumption runs counter to longstanding clinical writings that separate psychopathy into two subtypes (which may be densifications of several personality dimensions): primary and secondary [47–49]. Primary psychopathy is associated with low levels of fear and high levels of guiltlessness, callousness and other affective deficits. Compared with nonpsychopaths, primary psychopaths exhibit lower fear and startle

reactions in response to conditioned aversive stimuli [50,751]. By contrast, secondary psychopathy is associated with impulsivity, anxiety and aggressive behavior; individuals with this condition lack the calm demeanor and deep-seated absence of remorse observed in primary psychopaths. Moreover, they do not typically demonstrate the diminished fear responses of primary psychopaths [17,52]. Importantly, these subtypes may not be mutually exclusive, as many psychopaths display personality traits typical of both primary and secondary psychopathy, potentially consistent with dimensional models of the disorder.

Cluster analyses support the primary/secondary psychopathy distinction. Using the PCL-R, Hicks *et al.* identified two subtypes of psychopathic offenders: an emotionally stable subtype akin to primary psychopathy and an aggressive subtype akin to secondary psychopathy [53] (for similar results see [54]). Hence, research suggests that psychopathy, at least as operationalized by the PCL-R and other global measures, is not a monolithic condition [52]. Instead, psychopathy broadly construed appears to be a heterogeneous construct that subsumes at least two subtypes.

### ■ Clinical & research implications

Psychopathy appears to differ from nonpsychopathy in degree rather than kind, so researchers and clinicians should avoid drawing qualitative cutoffs between psychopaths and nonpsychopaths. In addition, practitioners and researchers should recognize that not all high PCL-R scorers are similar, because global psychopathy is underpinned by at least two subtypes that bear different clinical implications.

### Clinical & demographic features of psychopathy: fiction & fact

Considerable mythology surrounds the psychopath's clinical portrait. For example, media portrayals of psychopathy focus primarily or exclusively on males. Although psychopathy is less prevalent among females than males in college and prison samples [55], studies of PCL-R psychopathy among female inmates have reported prevalence rates ranging from 9 to 31% [56–58]. These data demonstrate that psychopathy is hardly confined to males. Gender differences in psychopathy may reflect biases in the criteria and items used to assess psychopathy. Most psychopathy scales focus on physical aggression, which is more typical of males,

rather than on relational aggression (indirect aggression, such as rumor-mongering, instigated to cause harm to others' social standing or relationships), which may be more typical of females [59,60]. Alternatively or in addition, these differences may reflect genuine gender differences in psychopathy levels stemming from unidentified genetic or environmental influences [61,62].

One widespread clinical portrayal of the psychopath is that of a clever and conniving individual. Indeed, this view has been termed the 'Hannibal Lecter myth,' after the fictional serial killer who seduced his victims with his intellect [63]. For example, Cleckley viewed psychopaths as possessing at least average or superior intelligence [6]. In a survey of 228 laypersons, Furnham *et al.* found reasonably high agreement (4.86 on a 0–7 scale) with the assertion that "psychopaths are often highly intelligent" [64]. Yet research typically reveals a negligible or inconsistent association between psychopathy and intelligence [24,65–68]. Although global psychopathy does not relate highly to intelligence, the story becomes more complex when we examine its constituent dimensions. Vitacco *et al.* found that the interpersonal traits of psychopathy were positively associated with IQ [69] (see also [68]). By contrast, the affective and behavioral traits of psychopathy were negatively associated with IQ [70,71].

Laboratory studies have consistently demonstrated that psychopaths display deficits in passive-avoidance learning, that is, the ability to withhold responses that can lead to punishment. Nevertheless, these studies also show that psychopaths do not exhibit generalized learning deficits and can learn from a variety of nonpunishing experiences [7–9].

Because of their often outrageous antisocial behavior, many writers contend that psychopaths possess deficits in moral knowledge [72]. However, studies using measures of abstract moral reasoning, such as Kohlberg's vignette methodology [73], have typically found that psychopaths exhibit equally advanced [74] or more advanced [75] moral thinking compared with nonpsychopaths. Other research suggests that psychopaths display more utilitarian (pragmatic) patterns of moral decision-making than nonpsychopaths [76,77]. In aggregate, these findings suggest that "psychopaths know the difference between right and wrong but don't care" [74].



### ■ Clinical & research implications

Although psychopathic traits are more pronounced in males than in females, many female inmates meet research criteria for psychopathy. Psychopaths are not more globally intelligent than nonpsychopaths, although the relation between psychopathy and intelligence depends on the dimension of psychopathy examined. Psychopaths can typically think rationally about abstract moral problems, although this reasoning does not translate into their real-world behavior.

### Psychopathy, violence risk & psychosis: fiction & fact

In the eyes of some laypersons, psychopathy is often tied to violence. In their survey of the public, Furnham *et al.* reported moderate agreement (mean of 4.42 on a 0–7 scale) with the proposition that “psychopaths are usually violent and aggressive” [64]. This view may extend to some mental health professionals; one expert witness testified on several occasions that severe psychopaths are 100% likely to reoffend [1,78]. This stereotype is potentially reinforced by media attention surrounding violent psychopathic individuals, such as notorious serial killers John Wayne Gacy and Dennis Rader. In addition, this stereotype may be fueled by phrases such as ‘psychopathic killer’ in popular parlance [2], perhaps mirroring the original meaning of ‘psychopath’ as ‘diseased mind.’ Some popular books also imply erroneously that most, if not all, serial killers are psychopathic, sometimes referring to the two concepts as interchangeable [79].

Although psychopathy is a modest risk factor for future violence and criminal recidivism [80,81], most psychopaths have no history of serious physical aggression. Growing evidence even suggests that a nontrivial minority of psychopaths function with reasonable success in society, free of serious criminal behavior [13,15,18].

An allied misconception is that psychopaths typically engage in instrumental aggression: calculating and emotionless violence performed as a means to an end, such as monetary gain [82–84]. Instrumental aggression differs from reactive aggression: emotionally-laden violence performed in response to provocation (e.g., insults). Although psychopathic traits are positively associated with instrumental aggression, psychopathic individuals are not exclusively instrumentally aggressive [82]. To the contrary, reactive aggression is more frequent than instrumental aggression among psychopaths [85].

Much like psychopathy and violence, the media routinely confuses psychopathy with psychosis. Mass murderers such as Jared Lee Loughner, the 2011 shooter of Arizona Congresswoman Gabrielle Giffords, and 2007 Virginia Tech shooter Seung-Hui Cho, were probably psychotic, but are frequently deemed psychopathic by the media [86–88,203]. Psychosis, an umbrella term denoting a disconnection from reality, differs markedly from the rationality typically exhibited by psychopathic individuals. Indeed, Cleckley regarded delusional and irrational thinking as an exclusion criterion for psychopathy [6]. Although psychopathy and psychosis may occasionally co-exist, measures of the two constructs are negligibly or even negatively correlated [89,90].

A small percentage of psychotic individuals who have committed crimes qualify for not guilty by reason of insanity (NGRI) verdicts, perhaps perpetuating the misconception that psychopathy provides grounds for an NGRI defense [91]. Yet because psychopaths understand the difference between right and wrong, psychopathy has not been regarded by US courts as justifying an NGRI defense (although some legal scholars contend that it should be) [92]. Moreover, psychopathy has more often been viewed as an aggravating than mitigating factor in criminal sentencing [93,94].

### ■ Clinical & research implications

Clinicians who work in forensic settings should recognize that psychopathy is associated with only moderately heightened risk for violence, and that psychopathic individuals, in contrast to psychotic individuals, are almost always rational. Clinicians should also be aware that marked reactive aggression is not inconsistent with the presence of psychopathy.

### Assessment of psychopathy: fiction & fact

Untruthfulness and absence of insight are hallmarks of psychopathy [6]. As a consequence, some authors have concluded that self-report scales are of limited utility for detecting psychopathy [95,96]. Research does not bear out this pessimistic view. Total scores on questionnaire indices of psychopathy, such as the PPI-R and Levenson Self-Report Psychopathy Scale, correlate moderately to highly with observer measures of psychopathy [97] and with the PCL-R [98,99].

In addition, a meta-analysis revealed that scores on most self-report psychopathy scales are

negatively related to social desirability response styles, such as the tendency to make a favorable impression on questionnaire items [100]. This finding suggests that psychopathic individuals are often willing to admit to socially undesirable attributes on self-report instruments. At the same time, because psychopaths sometimes lie on questionnaires, such measures should not be used by themselves to detect psychopathy in clinical or forensic settings, and should be supplemented by file or other corroborative data [101].

Some authors have touted measures of psychopathy, especially the PCL-R and its derivatives, as ‘unparalleled’ predictors of violence [57,102]. The PCL and its progeny are indeed moderately good predictors of violence and recidivism [57]. Nevertheless, meta-analytic evidence often reveals no significant difference between the validity of the PCL-R and alternative measures of violence risk (most of which focus on past history of physical aggression) for forecasting physical aggression [81,103,104]. The latter measures are empirically derived composites of previous violence, suggesting that the PCL-R’s ability to predict violence may stem from its inclusion of past antisocial and criminal behaviors rather than psychopathic traits *per se*. Hence, the PCL-R’s predictive validity for violence may have little to do with the distinctive affective and interpersonal traits of the disorder.

### ■ Clinical & research implications

Contrary to substantial clinical and research lore, questionnaires often yield useful information regarding psychopathic traits, although scores on these instruments should be corroborated by other information such as file evidence. Psychopathy scales are helpful in predicting violence but are not unique in this regard; moreover, distinctively psychopathic traits, such as lack of guilt and empathy, may bear few implications for violence risk.

### The etiology of psychopathy: fiction & fact

The causes of psychopathy are shrouded in myth. One misconception, sometimes perpetuated by the media [105], is that psychopaths are born, not made [52]. Several twin studies have examined genetic and environmental influences on psychopathy in adults and children, in the latter case using measures of callous/unemotional traits [106–108]. Meta-analyses of these

studies reveal considerable (29–56%) genetic influence on psychopathic traits, although they leave unanswered the exact nature of this influence [109]. Various neurobiological deficits have been proposed as potential mediators of the genetic influence on psychopathy, including diminished amygdala and ventromedial prefrontal activity [110]. In summary, the heritability of psychopathy is substantial but far less than 100%, meaning that environmental factors play a major causal role in psychopathy.

The most commonly posited environmental influences are early abuse and inadequate parenting. Some prospective and retrospective data link a history of childhood abuse and maltreatment to elevated scores on the PCL-R [111–113] and Psychopathy Checklist-Youth Version [114]. Nevertheless, these studies are based largely on participants whose PCL scores do not meet standard research criteria for psychopathy. In addition, the link between child abuse and psychopathy is limited to antisocial behaviors, and does not extend to the distinctive affective and interpersonal traits of the disorder [115].

Although certain parenting practices, such as harsh or inconsistent discipline and low parental monitoring, have been tied to criminality and ASPD, the evidence linking them to psychopathy has not been entirely consistent [116–119]. Marshall and Cooke found that psychopathic offenders experienced more parental neglect compared with nonpsychopathic offenders [120]. Harsh parental discipline predicted both high Factor 1 and 2 scores, but poor parental supervision only predicted high Factor 2 scores. Another research team found that inconsistent discipline and poor parental monitoring were associated with the narcissism and impulsivity dimensions of child psychopathy [121]. It is unclear, however, whether these parenting practices contribute to psychopathy, reflect parental reactions to childhood behavior or reflect genetic influences on personality traits (e.g., poor impulse control) shared between parents and children.

Emotional deficits are central to many models of the causes of psychopathy [12], and some authors (e.g., [6]) regard psychopaths as possessing a generalized deficiency in all emotions. Nevertheless, psychopaths experience both positive and negative emotions, especially anger and, occasionally, even anxiety [122,123]. Moreover, psychopaths’ difficulty in detecting others’ emotions appears not to be generalized, and to

be limited largely to fear, sadness and perhaps disgust [124,125]. The misperception that psychopaths do not experience emotions has led to the false belief that they can routinely pass the polygraph ('lie detector') test. Nevertheless, research on psychopaths' ability to beat the lie detector when they are guilty is equivocal [126]. Although some psychopathic traits (e.g., callousness and lack of guilt) may lessen the likelihood or intensity of depression and anxiety, others (e.g., poor impulse control) are associated with heightened risk for these emotions [127–130].

#### ■ Clinical & research implications

The notion that psychopaths are 'born' is oversimplified, as still undetermined environmental influences play a crucial etiological role. Widespread claims to the contrary, the causal role of early abuse and poor parenting in the genesis of psychopathy remain undemonstrated. Clinicians should be aware that psychopaths are not devoid of all feelings, especially anger and other negative emotions.

#### Treatment of psychopathy: fiction & fact

The claim that psychopaths do not improve following treatment has attained the status of a virtual 'truism' in the eyes of many commentators [6,10,11]. This nihilistic attitude has become so deeply entrenched that on the US television show 'The Sopranos', the main character (Tony Soprano) was terminated from therapy because he was diagnosed as a psychopath and hence presumed to be untreatable.

Nevertheless, data supporting the untreatability of psychopathy are sparse and unconvincing [131]. Although psychopaths' personality traits may be difficult or impossible to change, this does not necessarily mean that their antisocial behaviors are unmalleable. Skeem *et al.* found that levels of psychopathy did not predict negative treatment outcomes, such as future violence, even after controlling for a host of potential confounds, including predictors of treatment adherence [132]. In addition, controlled studies have revealed positive therapeutic outcomes in psychopathic individuals, especially youth, following intensive inpatient treatment [133,134]. Still, these results are preliminary and require replication.

Some researchers argue that psychotherapy typically makes psychopaths worse. This belief stems largely from the well-known research of Harris *et al.* [135,136], who evaluated recidivism

rates retrospectively in a therapeutic community for mentally disordered offenders. Harris *et al.* found that psychopaths who received treatment were more likely than other psychopaths to recidivate violently. Nevertheless, this intervention confined nude patients together for 2 weeks in a windowless room, fed them through the tubes in the wall, and administered them lysergic acid diethylamide. Needless to say, the results of this study cannot be generalized to other treatments. Moreover, in a review of 24 treatment studies of psychopathy, most of which are marked by serious methodological limitations, D'Silva *et al.* found the evidence for adverse effects from interventions other than those used by Harris *et al.* to be lacking [135,137].

#### ■ Clinical & research implications

Although the personality traits of psychopaths, especially callousness and lack of insight, surely pose challenges for practitioners, there is little evidence that psychopaths cannot respond to treatment, let alone that treatment makes them worse. At the same time, although preliminary findings suggest that some psychopaths respond positively to treatment, this evidence requires independent replication.

#### Conclusion & future perspective

Myths and misconceptions regarding psychopathy, if perpetuated, have the potential to impede clinical intervention and research. Misunderstanding of the disorder has contributed to diagnostic confusion, stigma, and perhaps misguided treatment.

Clinicians and researchers need to not only understand the key facts concerning psychopathy, but also to dispel prevalent fictions among colleagues and laypersons to pave the way for more effective and evidence-based practice and research. Educational psychology research conducted across numerous domains suggests that unless misconceptions are explicitly raised and dispelled in coursework, they are likely to persist following standard instruction [138]. Hence, students who have taken undergraduate, graduate and medical courses that expose them to accurate information concerning psychopathy may still emerge from these classes with their misconceptions intact. For the forthcoming decade, we therefore recommend that formal exposure to erroneous views regarding psychopathy become a standard component in the training of mental health professionals.



## Disclaimer

The contents of this manuscript are exclusively the responsibility of the authors.

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