



Psychopathy and instrumental aggression: Evolutionary, neurobiological, and legal perspectives

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ABSTRACT

In the study of aggression, psychopathy represents a disorder that is of particular interest because it often involves aggression which is premeditated, emotionless, and instrumental in nature; this is especially true for more serious types of offenses. Such instrumental aggression is aimed at achieving a goal (e.g., to obtain resources such as money, or to gain status). Unlike the primarily reactive aggression observed in other disorders, psychopaths appear to engage in aggressive acts for the purpose of benefiting themselves. This is especially interesting in light of arguments that psychopathy may represent an alternative life-history strategy that is evolutionarily adaptive; behaviors such as aggression, risk-taking, manipulation, and promiscuous sexual behavior observed in psychopathy may be means by which psychopaths gain advantage over others. Recent neurobiological research supports the idea that abnormalities in brain regions key to emotion and morality may allow psychopaths to pursue such a strategy—psychopaths may not experience the social emotions such as empathy, guilt, and remorse that typically discourage instrumentally aggressive acts, and may even experience pleasure when committing these acts. Findings from brain imaging studies of psychopaths may have important implications for the law.

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1. Introduction

Psychopathy is a disorder involving a pronounced lack of guilt, remorse, and empathy (Hare, 2003). Psychopaths are said to be impervious to the distress of others. They also lack fear of negative consequences of risky or criminal behavior and demonstrate insensitivity to punishment (Patrick, 1994). In addition, psychopaths are often described as superficially charming, glib, manipulative, conning, and grandiose (Cleckley, 1941); they are often able to take advantage of others because they first present as likeable and well-meaning. However, these individuals often display severe aggression and high rates of criminal recidivism (Hare, 2003), making the study of psychopathy an especially important issue for the criminal justice system.

2. Psychopathy and instrumental aggression

A unique feature of psychopathy is that it is associated with an increased risk for instrumental aggression (Blair, 2007b). *Instrumental aggression*, also referred to as proactive or predatory aggression, is controlled, purposeful, and used to achieve a desired external goal

(e.g., to obtain money or drugs). Injury to others is typically secondary to the acquisition of some other goal. Instrumental aggression tends to be premeditated and is not preceded by a strong emotional reaction. In other disorders such as schizophrenia or bipolar disorder, increases in aggression tend to be relatively more *reactive* in nature. Reactive aggression is impulsive and emotion-driven acts in response to threat or provocation (e.g., in the context of a heated argument) (Meloy, 1988, 1997). The classification of individuals or acts as reactively and instrumentally aggressive is not mutually exclusive — individuals may engage in both types of aggression, and singular acts may contain elements of both types of aggression. Psychopathic individuals demonstrate reactive aggression in addition to instrumental aggression (Flight & Forth, 2007; Hare, 2003; Reidy, Zeichner, Miller, & Martinez, 2007); however, it is their proneness to instrumental aggression that may distinguish them from other antisocial individuals, and may have the most serious implications.

Several studies have demonstrated that psychopathic criminals are more likely to engage in predatory violence, while non-psychopathic violent criminals are more likely to engage in reactive violence (Meloy, 1988, 1995; Serin, 1991; Williamson, Hare, & Wong, 1987). This is especially true for what are typically considered more serious types of offenses, such as serious sexual assault or homicide. Less serious offenses, such as theft or burglary, are likely to be committed at similar rates by non-psychopathic individuals. Williamson et al. (1987) examined characteristics of violent offenses and found that psychopathic offenders were much more motivated by material gain or revenge (45.2% of violent acts) than non-psychopathic offenders

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(14.6% of violent acts). Furthermore, psychopaths were less likely to have experienced emotional arousal during their crimes than non-psychopaths (2.4% compared to 31.7% of violent acts). [Woodworth & Porter \(2002\)](#) found that psychopathic individuals were about twice as likely to have committed primarily instrumental homicides as non-psychopathic offenders. In fact, 93.3% of homicides committed by psychopathic offenders were instrumental in nature, compared with 48% of those by non-psychopathic offenders; again, psychopaths were found to rarely commit violent crimes under intense emotional arousal. [Cornell et al. \(1996\)](#) found that offenders who had committed at least one act of instrumental violence were more psychopathic, specifically with respect to pathological lying, manipulateness, superficiality, lack of empathy, exhibiting a parasitic lifestyle, irresponsibility, and criminal versatility. In addition, instrumental offenders demonstrated more violent criminal behavior. A higher proportion of spousal abusers who were classified as instrumentally aggressive were found to be psychopathic compared to spousal abusers classified as being reactively aggressive ([Chase, O'Leary, & Keyman, 2001](#)). Based on these studies, it appears that violent aggression committed by psychopathic individuals is more likely to be instrumental in nature.

There is some evidence that psychopathic traits in non-incarcerated populations may also be associated with increased instances of unprovoked aggression. In a study by [Nouvion, Cherek, Lane, Tcheremissine, and Liewing \(2007\)](#), subjects recruited from a large, urban community participated in a laboratory-based computer task that involved opportunities to subtract points from a partner in provoked and unprovoked conditions. Participants were classified as instrumental, reactive only, or nonaggressive. The study found that individuals who demonstrated instrumental aggression scored higher in psychopathy than individuals in the other two groups (nonaggressive and reactive only). However, it should be noted that the instrumental group may have also exhibited reactive aggression; this was not measured. In a different study, [Rilling et al. \(2007\)](#) examined the behavior of undergraduates playing an iterated Prisoner's Dilemma game, in which a player has the option to cooperate with a partner to earn money, or to defect, and attempt to benefit at the partner's expense. Undergraduates scoring higher on a psychopathy measure were more likely to disrupt patterns of mutual cooperation by defecting; such unprovoked defection allowed these individuals to earn money at the expense of their partner and could be viewed as a form of instrumental aggression. These studies provide some evidence that variation in psychopathic traits within community samples may also be associated with quantifiable increases in instrumentally aggressive acts.

Several studies of youth with psychopathic traits have also found increased rates of instrumental aggression. Adolescent offenders who had committed instrumentally motivated violence were found to score higher in psychopathic traits ([Loper, Hoffschmidt, & Ash, 2001](#)). Similarly, instrumentality of prior violence was significantly correlated with psychopathy scores in another group of adolescent offenders ([Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2004](#)). [Kruh, Frick, and Clements \(2005\)](#) found that young adults with any history of unprovoked violence had higher psychopathy scores than participants who had a history of reactive violence only. Finally, delinquent adolescents who had engaged in prior instrumental violence scored significantly higher in psychopathy than those classified as never instrumental. Furthermore, psychopathy scores were found to be significantly associated with the amount of instrumental violence of an individual ([Flight & Forth, 2007](#)). However, it should be emphasized that psychopathy scores were also associated with increased reactive aggression. These studies suggest that instrumental aggression is evident in youth with psychopathic traits, and therefore may result from factors early in life.

Psychopathy is comprised of a constellation of features which have been grouped into two inter-related factors, one describing interpersonal and affective features, and a second describing the impulsive and antisocial features ([Hare, 2003](#)). These factors can be further divided into four subfacets: Interpersonal (Facet 1), including super-

ficial charm, manipulateness, and pathological lying; Affective (Facet 2), including a lack of guilt and empathy, blunted emotions, and callousness; Impulsive Lifestyle (Facet 3), including stimulation-seeking and impulsivity; and Antisocial (Facet 4), including criminal behavior ([Hare, 2003](#)). Some studies have found instrumental aggression to be more strongly associated with the Interpersonal/Affective factor of psychopathy, whereas reactive aggression demonstrates stronger relationships with the Impulsive/Antisocial features. [Woodworth and Porter \(2002\)](#) found significant relations for both psychopathy factors with instrumental aggression; however, partial correlations revealed a unique relationship only with the Interpersonal/Affective factor. [Porter, Birt, and Boer \(2001\)](#) found that psychopathic murders scored higher on the Interpersonal/Affective factor, whereas non-psychopathic murders showed higher scores on the Impulsive/Antisocial factor. In adolescent offenders, the Interpersonal/Affective factor, but not the Lifestyle/Antisocial factor, was found to be associated with increased likelihood of instrumental violence ([Flight & Forth, 2007](#)). Similarly, in incarcerated youth with psychopathic traits, the interpersonal facet was found to relate most strongly to instrumental violence ([Vitacco, Newmann, Caldwell, Leistico, & Van Rybroek, 2006](#)). In male undergraduates, [Reidy et al. \(2007\)](#) found that instrumental aggression on a laboratory aggression task was uniquely related to the Interpersonal/Affective factor of psychopathy. In contrast, reactive aggression was associated with both the Interpersonal/Affective factor and the Impulsive Lifestyle/Antisocial factor. Together these studies suggest that instrumental aggression is not exclusively related to the Interpersonal/Affective factor of psychopathy, but is more strongly associated with that factor.

A notable feature of the instrumental aggression of psychopaths is that the ultimate goal is for personal gain. [Woodworth and Porter \(2002\)](#) provide an example of one psychopathic inmate who carefully planned and murdered his wife in order to benefit financially from her insurance policy. Psychopaths have been described as individuals who prey on others across the lifespan ([Hare, 1998](#)). The use of aggression to serve a selfish function could be thought of as evidence for the idea that psychopathy is an evolutionarily adaptive strategy.

3. Psychopathy as an evolutionary strategy

Several researchers have explored the idea that psychopathy represents an alternative evolutionary strategy consisting primarily of "cheating" behaviors ([Barr & Quinsey, 2004](#); [Crawford & Salmon, 2002](#); [Mealey, 1995](#); [Raine, 1993](#)). In this view, the emotional, cognitive, and behavioral features of psychopaths are seen as specified, organized mechanisms which facilitated a viable reproductive social strategy during human evolutionary history ([Crawford & Salmon, 2002](#)). Instrumentally aggressive behaviors such as serious theft, rape, and homicide are all means by which psychopaths may cheat, taking advantage of others in order to gain status, resources, and to pass on genes with minimal effort ([Raine, 1993](#)). Psychopathic traits such as glibness and superficial charm may allow them to take advantage of others through manipulation and conning. Some evidence suggests that psychopaths may maximize reproductive fitness by pursuing a strategy involving early and high mating effort involving short-term, uncommitted relationships with multiple partners. Psychopathy has been associated with an increased number of sexual partners ([Halpern, Campbell, Agnew, Thompson, & Udry, 2002](#); [Lalumiere & Quinsey, 1996](#)), engaging in sexual behavior at an earlier age ([Harris, Rice, Hilton, Lalumiere, & Quinsey, 2007](#)), an uncommitted approach to mating, increased mating effort and sexual coercion ([Lalumiere & Quinsey, 1996](#)), many short marital relationships, sexual promiscuity ([Hare, 2003](#)), and poor performance as parents ([Cleckley, 1976](#)).

At low frequencies in the population, psychopaths may be able to successfully maintain cheating as an evolutionarily adaptive strategy. [Harpending and Sobus \(1987\)](#) used game theory research to show

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