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Predatory Violence and Psychopathy

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If Etain is hunting you,
You might as well be dead already.
Her soul is an empty vessel,
Only Roman blood can fill it.

“Centurion”

When Richard Allen Davis entered a Petaluma, California home on October 1, 1993, he quietly ascended the stairs to the bedroom of 12 year old Polly Klaas. He reached the bedroom where she and two friends were having a slumber party, awakened the girls, and brandished a knife. He covered two of their heads with pillow cases, threatened to kill them if they did not remain quiet and lie on the floor, and left the room with Polly. Within moments, she was in his car. Within hours she had been sexually assaulted, killed, and her body thrown by a tree near Cloverdale, California, 80 miles from her home. Davis, a habitual criminal since early adolescence, and recently paroled from the California Department of Corrections, was eventually placed at the scene of the crime because he left one palm print on the railing of the stairs which he climbed to her bedroom. He confessed to her murder on December 3, and was eventually tried and sentenced to death. When the jury read the verdict, he made an obscene gesture with both hands in the courtroom. At sentencing, he stated that Polly Klaas said to him, “don’t do me like my dad,” implying her father was a child molester. Davis remains on death

row at San Quentin State Prison, and his case ushered in California's "three strikes" law, which has been a model throughout the U.S., and essentially incarcerates for life individuals who commit three violent felonies—a legislative recognition based upon empirical evidence that a small proportion of habitually violent criminals commit most of the violent crimes (Hare, 2003).

This act of violence is every parent's worse nightmare, committed by a psychopath who selected his victim arguably at random. It illustrates a particular *mode* of violence, predatory violence, which is planned, purposeful, and emotionless. The evolutionary basis of predation is hunting, and in this case the target was a vulnerable victim and the goal was to sexually assault and perhaps kill.¹ Predation by our ancestors was utilized to hunt for food. Now hunting by humans is mostly done for other reasons, including pleasure, and in some cases sadistic pleasure.

There is another *mode* of violence which is impulsive, reactive, and emotional. In the research it is referred to as affective violence, and is both more common, and in a sense less dangerous than predatory violence. The provenance of the study of affective violence reaches back into the animal research of the first half of the twentieth century (Hess & Brugger, 1943), while the study of predatory violence originated twenty years later (Wasman & Flynn, 1962; Egger & Flynn, 1963). Both modes of violence are now considered anatomically and neurochemically distinctive. They are central to the understanding of aggression in mammals, including our species, and have been

¹ Davis had unsuccessfully attempted to rape at least three young adult women fifteen years earlier. It appears he changed his potential victim pool to increase the probability of his tactical success.

extensively reviewed (Gregg & Siegel, 2001; McEllistrem, 2004; Meloy, 2006; Siegel & Victoroff, 2009; Weinshenker & Siegel, 2002).²

Although the study of predatory violence in humans is in its infancy—and in some more humanistic circles is even denied as a reality—a curious finding has emerged in the research over the past twenty years: *psychopathic individuals are much more likely than other criminals to engage in predatory violence, and appear to be particularly suited to do so.* In this chapter I will discuss the young science of predatory violence, the relationship between psychopathy and predatory violence, relevant legal and judicial issues, and future directions for both research and practice.

The Science of Predatory Violence

A Brief History

Scientific discoveries usually begin with observations, and the distinction between affective and predatory violence is no exception. When a cat is cornered by the neighbor's dog, it will evidence behaviors indicative of affective violence: piloerection (hair standing on end), arched back, pupil dilation, hissing and screeching noises, teeth and claws exposed, and ears tilted back. It is a defensive posture, and the evolutionary basis of such an instinctual behavior is survival against an imminent threat. When the threat is first sighted, he freezes; as the threat approaches, he flees; if this is not possible, he fights. Predatory violence is quite different. The same cat is observed stalking a wounded bird. It is crouched low to the ground, there is no sound, its ears are tilted

² Affective violence is also referred to as defensive, impulsive, emotional, and reactive violence in the world research. Predatory violence is referred to as instrumental or premeditated (Meloy, 2006). I prefer the terms affective and predatory given the half century of scientific research with humans and other mammals that have utilized these terms.

forward, teeth and claws remain retracted, and there is no piloerection or arched back. It is an attack posture, and the evolutionary basis is hunting for food, again in the service of survival—or in the words of the evolutionary biologists, genetic viability or reproductive success (Hinde, 1966; Gregg & Siegel, 2001). These behaviors were intensively studied in the laboratory, beginning with the “affective defense” of Hess & Brugger (1943), and expanding to include a careful study of predation, or “quiet biting attack” in laboratory cats (Flynn, Vanegas, Foote & Edwards, 1970). The essential approach was the electrical stimulation of an area of the cat’s brain called the hypothalamus which then elicited predatory violence toward a target, usually a rodent. Reis (1971, 1974) organized these findings into the categories of predatory and affective aggression, the latter involving sympathetic arousal of a variety of neuroanatomical pathways, while the former did not.

The central finding of this work during the middle of the twentieth century was that aggression and violence, although occurring in a variety of situational contexts, could be distilled into *two biologically distinctive modes of aggression*. The meaning of the violence could be further delineated by studying the environmental and relational details of the context in which it occurred, but fundamentally it was either affective or predatory. Although sympathetic (autonomic) arousal was absent in predation, certain neuroanatomical pathways were distinctive, and the neurochemicals (neurotransmitters) that pulsed along those pathways, such as dopamine, serotonin, gamma-aminobutyric acid (GABA), acetylcholine, and norepinephrine, had differential effects on the elicitation of affective or predatory violence (Gregg & Siegel, 2001; McEllistrem, 2004; Meloy, 2006).

The bridge to human subjects, first suggested by Feshbach (1964), was constructed by Eichelman in a series of elegant papers which spelled out for psychiatrists and other clinicians the different pathways and neurotransmitters, and suggested distinctive psychopharmacological approaches to treatment for those who exhibited the two modes of violence in hospital settings (Eichelman, 1988, 1992). This model has also been advocated for the treatment of antisocial personality disorder (Meloy, 2007).

Contemporary Findings

Most aggression research in the psychology and psychiatry literature, however, continues to focus only upon affective violence. Two recent reviews of the research which both advance elaborate and elegant neurobiological theories of aggression in humans do not mention predation (Seo, Patrick & Kennealy, 2008; Gilbert & Daffern, 2010). Researchers in psychoanalytic and attachment theory have been inattentive to predatory violence among humans (Fonagy, 2003) with only a few exceptions (Glasser, 1998; Yakeley & Meloy, in press).

Nevertheless, a few research groups have substantiated the presence of predatory violence and its distinctive aspects in relationship to affective violence. The neurochemistry research has found that a number of neurotransmitters regulate aggression, including acetylcholine, GABA, dopamine, norepinephrine, serotonin, along with some neuropeptides (opioid peptides, substance P, and cholecystokinin). Some potentiate, and others inhibit the two modes of aggression (Siegel, Bhatt, Bhatt & Zalcman, 2007). Predatory attack behavior in cats can be elicited most easily by electrical stimulation of the perifornical lateral hypothalamus, ventrolateral aspect of the

periaqueductal gray (PAG), and ventral tegmental area. One of the most intriguing findings is that there are reciprocal inhibitory pathways between the medial (activated during affective violence) and lateral hypothalamus (activated during predatory violence) that suppress an affective response when predation is occurring, and likewise suppress a predatory response when affective rage is occurring. GABA appears to be the inhibiting neurotransmitter in both cases (Cheu & Siegel, 1998; Han, Shaikh & Siegel, 1996). The evolutionary adaptation should be obvious: during predation, the mammal needs to inhibit autonomic arousal as well as any disruptive display of emotional states to be tactically successful and kill his prey. During affective violence, he needs to marshal a high degree of autonomic and emotional arousal to fend off the threat—stealth has no purpose. The mammals whose evolved biology did this the best were the ones who survived to live another day, defend themselves, and raise their young. It is quite plausible, although not directly measured, that the observed absence of emotions when humans are engaging in acts of predation is also a result of GABA inhibition of the medial hypothalamic response while the lateral hypothalamus is activated. This emotional absence has been documented in behavioral studies of both adolescent and adult mass murder cases, an example of criminal violence that is virtually always predatory (Hempel, Meloy & Richards, 1999; Meloy et al., 2001; Meloy et al., 2004).

Neuropsychological studies have also found that increased affective aggression is associated with decreased executive functioning, while few cognitive deficits have been found in those who are predatory in their behavior (Houston et al., 2003). Stanford et al. (2003) found no significant differences between predatory subjects and controls on a

variety of neuropsychological tests, except for a single subscale of the Wisconsin Card Sorting Task.

Psychophysiological studies are also promising. Children who were classified as reactive (affective) in their aggression accelerated their heart rates during a challenging task, while proactive (predatory) children did not (Pitts, 1997). EEG abnormalities are ubiquitous among adults who engage in affective violence, while those who are predatory show fewer brain electrical activity differences from non aggressive controls (Stanford et al., 2003).

While it still remains the only neuroimaging study comparing predatory and affective murderers, Raine et al. (1998) utilizing PET (positron emission tomography, a measure of glucose metabolism in the brain) compared the two murderers' groups and a control group following a continuous performance task. The affective murderers showed significantly reduced lateral and medial prefrontal activation when compared to the controls, while the predatory murderers did not differ from the controls. Right subcortical measures, a source of negative emotion, were significantly greater in both groups of murderers when compared to controls. Meloy (2006) wrote,

“despite the negative emotionality of the predatory murderers, their executive function facilitated premeditation and planning of their killings (a portion of these individuals were serial murderers); while the negative emotionality of the affective murderers was not effectively managed because of their hypofrontality, resulting in impulsive killing (p. 541).”

Although there are now in excess of forty published neuroimaging studies involving psychopathic, antisocial, or habitually violent criminals, many of them utilizing other functional approaches such as fMRI (functional magnetic resonance imaging, a noninvasive measure of blood oxygenation inferring brain activity), more imaging studies to investigate differences between affectively and predatorily violent subjects need to be done (Yang, Glenn & Raine, 2008).

Genetic and heritability researchers have also noted the distinction between affective and predatory violence, and bemoaned the fact that most research on aggression and violence does not demarcate the two modes (Viding & Frith, 2006). There is also a wealth of twin and adoption studies, moreover, that confirms that individual differences in violence are heritable. Such heritability should be considered as a predisposition, the behavioral expression of which is influenced by the environment. For example, a genetic predisposition to be violent might manifest only in the midst of maltreatment during which affect cannot be modulated (Viding & Frith, 2006).

Measurement

How does one measure predatory and affective violence in human subjects? There are currently two observational measures and one self report measure which hold promise for both research and applied forensic work.

Meloy developed 10 criteria for forensic practice to distinguish between affective and predatory violence (1988, 1997, 2000, 2006). These criteria are listed in table 1, and were used in an abbreviated manner to distinguish between predatory and affective murderers in Raine et al. (1998) with excellent interrater reliability ($Kappa = 0.86$).

Insert Table 1 here

These criteria have been extensively discussed elsewhere (Meloy, 1988, 1997, 2000, 2006) and will not be defined here. However, a few points of elaboration are useful. Autonomic arousal (criterion 1) has emerged as a very important empirical discriminator between the two modes (Barratt et al., 1997; Stanford et al., 2003b), with its absence noted during predation, often forensically evident in accuracy of marksmanship or the precisely timed discharge of a single round during a killing. The absence of emotion (2) has been naturalistically observed and documented by surviving witnesses of a subject engaging in predatory violence (Meloy et al., 2004), and anecdotal self-reports of incarcerated predators made during forensic psychological evaluations: when asked what they felt, the typical answer is “nothing.” This is also consistent with the GABA inhibition of the medial hypothalamus by the lateral hypothalamus during predatory violence (Siegel & Victoroff, 2009). Planning and preparation (3) are also ubiquitous. For example, public figure attackers and assassins invariably engage in predatory violence and have histories replete with researching, planning, and preparing for their act (Meloy, Sheridan & Hoffmann, 2008). Goals for predatory violence (5) vary widely, and include revenge, sexual gratification, money, power, dominance, territorial control, honor, and the promulgation of certain religious or political beliefs.

Predators also have a remarkable ability to stay focused upon their target and not be distracted by other stimuli (6, 10) (Hernandez-Peon, Scherrer & Jouvett, 1956). Often

forensic clinicians will confuse opportunism (deliberately taking advantage of an opportunity) with impulsivity (loss of control) in the predatory subject, and not recognize that a sudden attack can be carefully planned for days, weeks, or months. The attack is behaviorally explosive but deliberate. The FBI noticed this in their early research concerning serial rapists and labeled it a “blitz” attack—the sudden and overpowering use of force to disable the victim (Hazelwood, 1995)--in contrast to a “surprise” or “con” approach to the chosen victim.

Even though predatory violence may be stunning in its power and acceleration, this does not mean that it is emotionally driven³. In fact, predation in humans is largely a cognitive enterprise (9) that may also involve an extensive amount of fantasy preparation (Meloy, 2000b); this is not apparent in affective violence, where higher cortical centers are typically only utilized to inhibit the largely affective-emotional-reactive response to a threat (Siegel & Victoroff, 2009). Most humans do not engage in predatory violence toward other humans due to higher cortical inhibitions (Blair, 2007a), what are psychodynamically referred to as products of conscience or superego.

The other behavioral measure was developed by Woodworth and Porter (2002) in their study of psychopaths and homicide. They devised a 4-point scale according to degree of instrumentality (predatory) or reactivity (affective) for each intentional killing. The purely reactive cases showed evidence of rapid and powerful emotion and no external goal other than to injure the victim. Purely instrumental cases indicated homicides that were goal-oriented without evidence of situational or emotional provocation. All cases were also scored for instrumental gain, impulsivity, and level of

³ One can regularly witness such acts by mammals and reptiles on a number of cable television channels, including Nature Discovery, National Geographic, and Animal Kingdom.

antecedent affective arousal, with excellent interrater reliability. The practicality of the Woodworth and Porter coding scheme shows promise for use in applied forensic work.

The best self report measure—if one is careful to rule out subject distortion and fabrication—is the Impulsive/Premeditated Aggression Scale (IPAS) developed by Stanford et al. (2003), a 30 item questionnaire with each item scored on a 5-point scale. Half of the items describe impulsive aggression (“when angry I reacted without thinking”), and half the items describe premeditated aggression (“I planned when and where my anger was expressed”). The IPAS has been used in several studies as both an independent and dependent variable to measure treatment nonresponse and noncompliance, as well as other correlates of these two modes of violence (Stanford et al., 2001; Villemarette-Pittman et al., 2003; Stanford et al., 2003a; Kockler et al., 2006).

Predatory Violence and the Psychopath

A hypothesis that has received strong empirical support over the previous three decades is that psychopathic individuals⁴ engage in more frequent affective and predatory violence than other criminals, and appear to be psychobiologically suited to do so (Cornell, Warren, Hawk, Stafford, Oram & Pine, 1996; Serin, 1991; Hare & Jutai, 1983; Serin & Amos, 1995; Williamson, Hare & Wong, 1987). Precursors for psychopathy are often apparent in children in the form of callous and unemotional traits, and these “fledgling psychopaths, “ representing only a small proportion of conduct disordered children, predict a pattern of serious antisocial and violent behavior when they grow up (Frick, 1998; Lynam, 2002). Adolescent psychopaths are associated with more

⁴ A psychopathic individual is one who scores ≥ 30 on the Psychopathy Checklist-Revised, a reliable, well validated, standardized and normed behavioral measure of the construct developed by Hare (2003) and now widely used throughout the world.

convictions for violent offenses (Campbell, Porter & Santor, 2004; Forth & Mailloux, 2000) and increased recidivism for violent felonies (Gretton et al., 2001).

The greater *frequency* of both affective and predatory violence among psychopaths, however, begs a more intriguing question: why are they significantly more predatory, even when compared to other violent criminals? Meloy (1988) theorized a quarter century ago that a predisposition to engage in predatory violence would be due to their low levels of autonomic arousal and reactivity, their disidentification with the victim, their perceived malevolence in others, their grandiosity, their emotional detachment, and their lack of empathy. He speculated that they would be “hard wired” to be the consummate predators. Subsequent research has supported some of these hypotheses. David Berkowitz, a serial murderer labeled by the press as “Son of Sam” as he killed in the New York City boroughs in 1977, described his activity in his own words with his last female victim, Stacy Moskowitz:

I watched Stacy on the swing and then they stopped swinging.
Her and her date then started to kiss passionately for several minutes.
At this time, I too, was sexually aroused. I had an erection. Shortly after their deep kissing, they went back to the car...I had my gun out, aimed at the middle of Stacy's head and fired. One bullet struck her head and another nicked her. I didn't even know she was shot because she didn't say anything nor did she moan. Then I got in my car and drove off (Abrahamsen, 1985, pp. 176-177).

In the first empirical study of this phenomenon, Williamson et al. (1987) found in a sample of adult Canadian psychopaths that they were more likely to be motivated to be violent by an external goal, and less likely to experience emotional arousal than nonpsychopathic criminals. Cornell et al. (1996) found that psychopaths were more likely to have committed instrumental violence in their history than nonpsychopaths, and their violence was associated with a lack of emotional arousal during the violent act. Gottman et al. (1995) similarly found that a small subgroup of domestic batterers evidenced heart rate *deceleration* in the laboratory when discussing conflict-laden issues with their spouses which had previously led to violence. They referred to these batterers as “cobras,” while the reactive batterers were called “pitbulls,”—although psychopathy in these subjects was not directly measured.

These early studies led Porter and Woodworth (2006) to conclude that despite the greater likelihood of an “instrumental component” among psychopaths, since there was no evidence of an external goal in many of these cases, this “supports the idea that poor behavioral controls or impulsivity in psychopaths contributes to their violence” (p. 484). There is, however, a much more plausible explanation. Psychopaths engage in a “prey-predator” dynamic with their objects (Meloy, 1988). In other words, they behave as all predators do toward their prey, and their meta-goal is to dominate their objects. They don’t relate to others on the basis of reciprocal affection, which assumes the presence of affect and a relative parity of emotional exchange, but operate from within a dominance-submission relational framework, as all predators do. Hence, oftentimes there will be no obvious external goal, *because the gratification is internal: to dominate the object*. Among animals, hunting, predation, and domination means a food source. Among

psychopathic subjects, it can mean a variety of internal states which are rewarding—and lead to physical or psychological dominance of another person or the environment--, from sadism⁵ (Holt, Meloy & Strack, 1999), to thrill-seeking (Porter, Campbell, Woodworth & Birt, 2001), to grandiose inflation (Meloy, 2001, 2003). In order to fully understand the psychopath, one must understand his psychodynamics (Meloy & Shiva, 2007), the psychological bridge between his neurobiology (Blair, 2010) and his observable behavior (Hare, 2003).

More recent research on homicides has continued to find a significant relationship between predation and psychopathy. Porter, Birt & Boer (2001) found that psychopaths who killed showed higher factor 1 scores (affective and interpersonal deficiency)⁶ than other psychopathic offenders. Woodworth and Porter (2002) found that psychopaths were twice as likely (93.3%) to commit a primarily instrumental homicide than nonpsychopaths (48.4%). They proposed in the same study that the “psychopaths’ impulsive aggression in other contexts may not be as uncontrollable as it appears” (p. 485). This was quite similar to a finding reported by Gacono and Meloy (1994) based upon several hundred Rorschachs of various antisocial and psychopathic subjects that they will deliberately use (AdjD) their unmodulated affect (FC:CF+C) to control objects in their environment. This is often seen naturalistically in custody settings wherein staff members will “walk on eggshells” around so-called explosive inmates so as not to trigger their rage. Such obsequious behavior, of course, would be noted by the psychopathic inmate with a consequential increase in both his sense of grandiosity and specialness.

⁵ The central component of sadism is pleasure through dominance of the object. It is therefore no surprise that recent research has supported a strong correlation between sadism and psychopathy (Porter, Woodworth, Earle, Drugge & Boer, 2003).

⁶ This factor was previously called a “callous and remorseless disregard for the rights and feelings of others” (Hare, 1991) and “aggressive narcissism” (Meloy, 1992).

The research on instrumental (predatory) aggression and psychopathy has continued to confirm the finding that psychopaths are more frequently predatory than nonpsychopathic criminals; and that both reactive (affective) aggression and instrumental (predatory) aggression have distinctively activated neuroanatomical pathways, solidifying the link between animal and human research (Blair, 2010).

The research interprets these findings concerning predation and psychopathy, however, as deficiency, dysfunction, disturbance or developmental pathology. The degree to which the psychopath's internal architecture *enhances* predatory violence—despite the social costs—are rarely interpreted through the lens of adaptation as a predator. Some examples will illustrate this argument: psychopaths are less responsive to environmental threats (Blair, 2007); they do not *process* sadness and fear in victims the way normals do (Blair, 1995); psychopaths show no deficits in cognitive empathy—the ability to know what the other person is feeling—but do show less emotional empathy (Blair & Blair, 2008); they are less easily conditioned by punishment (Flor et al., 2002); they generally show less affect-related activity than normals in subcortical areas, but appear to do more “emotional” processing in higher cortical, rational, controlled areas of the brain (Kiehl, Smith, Hare, Mendrick, Forster, Brink & Liddle, 2001); they are reward oriented, tend to be risk takers, and are less fearful (Hare, 2003); psychopaths have been shown to have an enhanced ability to judge vulnerability in others, particularly fearful faces (Book, Quinsey & Langford, 2007; Woodworth & Waschbusch, 2007); and psychopathic traits are associated with greater accuracy in assessing victim vulnerability (history of victimization) after watching videos of them walking (Wheeler, Book & Costello, 2009). Such characteristics of the psychopath as adaptive predator, although

downplayed in the research with few exceptions (Book et al., 2007), are often highlighted in the cinema, such as the series which began with the 1987 film “Predator” directed by John McTiernan, and continued most recently with “Predators” in 2010.

These scientific findings, moreover, strongly suggest a *predatory acuity* in psychopaths: a brain particularly wired (more functionally than structurally different)—whether we find it socially acceptable or not—to be free of the normal emotional and social constraints that would interfere with successful predation. They are especially keen observers of others as prey. Imagine the accuracy of observation of others within the social milieu if one is unfettered by the quotidian emotions, anxieties, inhibitions, fears, empathic understanding, and attachments of everyday life. Imagine predation without moral interference from a conscience, superego, or internalized value system. Such a state of mind brings to the table more resources for the task at hand--to successfully prey on others.

Such a reinterpretation of the empirical findings does not preclude the likelihood that psychopathy is a severe personality disorder; but it does address the bias inherent in most psychopathy research and forensic work that all psychopathic anomalies, when compared to other subjects who are not psychopathic, are maladaptive and do not confer an advantage. This is clearly not true.

Legal and Judicial Issues

The distinction between affective and predatory violence is generally scientifically unknown, but often judicially applied, by both judges and juries in matters of the law. Legal defenses which are based upon passion, and often litigated with great

zest, typically fall within the bailiwick of affective violence, wherein the argument is made that the defendant has been swept away by his own emotion in the face of an insurmountable stress or threat. Various permutations of homicide, such as voluntary manslaughter, are often defined by intense emotion and autonomic arousal despite the presence of intent to kill. Such legal arguments are substantially supported by the extant scientific evidence of the predominance of subcortical activation in affective violence.

On the other hand, the more predatory or instrumental the violence, the greater the likelihood that both the prosecuted offense and punishment will be more severe, and primary attribution will be correctly assigned to the higher cortical functions of organization, control, and conscious decision-making, which likewise are supported by the extant science. In these cases, predatory violence is often assumed by the trier of fact, and opaque legal terms such as premeditation, deliberation, and malice aforethought take on new neurobiological meaning (Blair, 2007a). I have found that analysis of a violent crime such as homicide, when framed by the mode of violence and dissected according to forensic criteria (see table 1), provides a substantial scientific foundation to help the trier of fact determine the exact crime that has been committed.

On occasion, however, cases will appear which have elements of both affective and predatory violence. Often referred to as “mixed” (Porter et al., 2003), there is some scientific merit to treat predatory and affective violence as bimodally distributed on a dimension, rather than completely separate categories (Meloy, 2006; Siegel & Victoroff, 2009). Sometimes, however, so-called mixed cases, upon careful analysis by the forensic psychologist or psychiatrist, will turn out to be a *sequencing* of affective and predatory violence, or vice versa. This can only be determined by a detailed study of the moments

before, during, and after the violence through the self-report of the defendant, the self-report of the victim—if still alive--and a review of all other evidence in the case.

Here is an example of the sequencing of affective to predatory violence, the former motivated by the presence of a narcissistic and psychopathic personality disorder combined with the use of amphetamines in the form of diet pills, and the latter motivated by the desire to eliminate the last witness to a familial homicide:

In February, 1970, Jeffrey MacDonald, a Captain in the U.S. Army Green Berets and a physician, murdered his wife, Collette, and his two daughters, Kristen and Kimberley, aged 3 and 5 respectively. Reconstruction of the case at trial suggested that MacDonald and his wife may have fought in the bedroom over the youngest daughter urinating in bed, resulting in a physical altercation that escalated to homicide of his wife and his older daughter, who may have been killed by accident while entering the bedroom. He then went down the hallway and stabbed Kristen 48 times in her crib. MacDonald then stabbed himself once, and staged the crime scene to look like a “Manson style” massacre⁷, including writing the word “pig” in blood on the headboard. MacDonald was eventually convicted of two counts of second degree murder in the deaths of his wife and Kimberley, and one count of first degree murder in the killing of Kristen (McGinniss, 1983).

⁷ The mass murder of Sharon Tate and four others was carried out by the followers of Charles Manson on August 8, 1969, six months before the MacDonald killings. A magazine describing this massacre was found underneath the overturned coffee table in the living room of the MacDonald home.

Here is an unusual example of sequencing (predatory>affective>predatory) by a psychopath (PCL-R= 33, Factor 1=16) and serial murderer as reported by a forensic psychologist who evaluated him for the court:

One serial murderer's pattern across 12 known victims over sixteen years (4 survivors, 8 homicides) was to plan and initiate contact, and to be well organized as he began carrying out the assaults. All the victims were young or youthful women and athletic appearing; and all but one were strangers to him. He would meet them in the company of friends, follow them home, or take them to a remote area. During the assaults, he would become more regressed, displaying extreme anger and fury; he would bite the breasts, mutilate the genitals, and brutally beat the face--all reflecting a very personalized rage. This behavior went far beyond what was needed to control the victim or kill her. More than one method of killing was seen in three of five litigated cases. After the assaults, he would become more organized again, leaving victims naked and posed in six or seven of the killings. His pattern began as predatory and instrumental, and became more affective or reactive (McEllistrem, 2004; Meloy, 2006). He likely responded to resistance on the part of victims with rage and fury, eventually bringing the victim back under his control; two early surviving victims fit this hypothesis and were templates for later victims. He recovered before leaving the scene, appeared more compulsive and organized, and left them naked and posed; however, he left behind at least one weapon in over half of the killings (M. Rogers, personal communication, March, 2011).

It is belaboring the obvious to note that most criminal defense attorneys would like their defendants to have committed acts of affective violence, and most prosecutors would like the defendants to have committed acts of predatory violence. It is the task of the forensic expert to discern the truth, regardless of who retains her. It is less obvious that psychopathic defendants will redefine their acts of homicide as affective violence to a greater degree than nonpsychopathic defendants. Porter and Woodworth (2007) found in a comparative sample of 50 psychopathic murderers and 50 nonpsychopathic murderers that the former were more likely to have committed a predatory killing, and

although both groups tended to exaggerate the affective nature of their acts, the psychopaths did so to a greater degree. Psychopaths were also more likely to omit major details of their crimes.

The Way Forward: Future Research and Applications

There are many research avenues that invite further exploration concerning both predatory violence and psychopathy. The applied forensic measures to discern the two modes of violence in criminal cases need to be further tested for both reliability and validity (Meloy, 2006). The study of affective and predatory violence in humans needs to continue through the various scientific domains and their related technologies in neuropsychology, psychophysiology, neurochemistry, neuroimaging, and behavioral genetics. Specifically, more studies need to be done utilizing fMRI (functional magnetic resonance imaging) and/or neurochemical measures in the comparison of subjects with histories of affective and predatory violence; for example, are there ways in which the reciprocal suppression by GABA within the hypothalamus in cats, depending on the mode of violence, can be shown to exist within humans (Siegel & Victoroff, 2009)?

Predatory violence among psychopaths has significant social policy implications, and this line of research also needs to continue. To what degree is such habitual behavior psychopathological or adaptive? How realistic is it to continue to search for a treatment for psychopathy and its most dangerous manifestation, predatory violence? Should such research be interpreted through the lens of dysfunction, or should studies interpret from both a psychopathological and adaptive perspective? For example, is the absence of care-based moral reasoning in psychopaths due to the amygdala not providing aversive

reinforcement expectancy to the decision-making of the ventromedial prefrontal cortex a positive adaptation which supports predatory acuity or an emotional dysfunction which can be ameliorated (Blair, 2007a)?

From a philosophical perspective, to what degree does the different neurobiology of the psychopath limit, or enhance, his free will (Blair, 2007; Meloy, 2001; Morse, 2007)? And within a legal context, is psychopathy an aggravating or mitigating factor?

In conclusion, more than eighty years ago Sigmund Freud captured the core personality of the psychopath and his predatory nature which still rings true today: “Two traits are essential in a criminal: a boundless egoism and a strong destructive urge. Common to both of these, and a necessary condition for their expression, is the absence of love, the lack of an emotional appreciation of (human) objects” (Freud, 1961 [1928], p. 178). The psychopathic individual continues to walk the earth.

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Table 1. Forensic criteria for determining affective or predatory violence (Meloy, 1988, 1997, 2000, 2006)

Affective violence	Predatory violence
<ol style="list-style-type: none">1. Intense autonomic arousal2. Subjective experience of emotion3. Reactive and immediate violence4. Internal or external perceived threat5. Goal is threat reduction6. Possible displacement of the target7. Time-limited behavioral sequence8. Preceded by public posturing9. Primarily emotional/defensive10. Heightened and diffuse awareness	<ol style="list-style-type: none">1. Minimal or absent autonomic arousal2. No conscious emotion3. Planned and purposeful violence4. No imminent perceived threat5. Variable goals6. No displacement of the target7. No time limited sequence8. Preceded by private ritual9. Primarily cognitive/attack10. Heightened and focused awareness
