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Psychopathic personality or personalities? Exploring potential variants of psychopathy and their implications for risk assessment

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Abstract

Although psychopathy typically has been construed as a relatively uniform construct, seminal theories and contemporary research suggest that it may be heterogeneous. In this article, the most promising literature is distilled to distinguish among potential variants of antisocial personality disorder (APD) that can be derived from, and informed by, modern conceptions of psychopathy. This analysis suggests that there are primary and secondary variants of psychopathy, which may be distinguished based on the extent to which they are heritable and are characterized by affective deficits, impulsivity, trait anxiety, and characteristics of borderline and narcissistic personality disorders (NPD). These variants also may differ in their patterns of violence and responsivity to treatment. If variants of psychopathy can be identified reliably and supported empirically, psychopathy may be transformed from a global label to a set of more specific constructs that improve our ability to understand, manage, and treat individuals who have largely been regarded as dangerous and untreatable.

Keywords: Psychopathy; Subtypes; Variants; Primary psychopathy; Secondary psychopathy; Anxiety

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1. Introduction

In the Diagnostic and Statistical Manual of Mental Disorders—4th Edition (DSM-IV; American Psychiatric Association, 1994), longstanding patterns of antisocial and violent behavior are captured by a single category, antisocial personality disorder (APD). However, chronic antisocial behavior likely is a function of a host of factors other than personality deviation (Blackburn, 1998a). Moreover, there is preliminary evidence that individuals classified with APD can differ substantially from one another both behaviorally and characterologically (Cunningham & Reidy, 1998; Rogers & Dion, 1991). The probable over-inclusiveness of the APD diagnosis (Lilienfeld, 1994) is reflected in the finding that this "disorder" tends to be the rule rather than the exception in correctional settings, with 50–80% of offenders typically meeting diagnostic criteria (Hart & Hare, 1997; Widiger & Corbitt, 1997). A large body of research conducted over the past two decades indicates that the construct of psychopathy captures individual differences among those with APD and that this construct bears critical implications for clinical and legal decisions about violence risk and treatment (see Edens, Petrila, & Buffington-Vollum, in press; Hart & Hare, 1997; Hemphill, Hare, & Wong, 1998; Rice, 1997; Salekin, Rogers, & Sewell, 1996).

Unlike the more behaviorally focused diagnosis of APD, psychopathy can be understood as a constellation of personality features that generally includes remorselessness, callousness, deceitfulness, egocentricity, failure to form close emotional bonds, low anxiety proneness, superficial charm, and externalization of blame (Lilienfeld, 1998). The most widely accepted measure of psychopathy is the Psychopathy Checklist-Revised (PCL-R; Hare, 1991), which assesses a set of interpersonal, affective, and behavioral features that are based largely on Cleckley's (1941) seminal description of psychopathy (see Rogers, 1995). In contrast to the APD criteria, only about 15–30% of correctional offenders in North America typically are classified as psychopathic, based on standard PCL-R cut-off scores (Hart & Hare, 1997). More important, the narrower class of individuals identified as psychopathic in correctional, forensic, and psychiatric samples appears to be at disproportionate risk for a variety of negative outcomes. Psychopathic traits have been associated with higher rates of community violence, violent and nonviolent criminal recidivism, institutional management difficulties, and poor treatment outcomes, and generally have proven more useful for predicting these outcomes than has APD (see reviews by Edens, Buffington-Vollum, et al., in press; Edens, Petrila, et al., in press; Edens, Skeem, Cruise, & Cauffman, 2001; Hare et al., 2000; Hart & Hare, 1997; Hemphill et al., 1998; Rice, 1997; Salekin et al., 1996).

Although psychopathy has typically been construed as a relatively uniform construct, several scholars have postulated the existence of specific variants of psychopathy. First, the multidimensional factor structure of the PCL-R itself reflects the possibility of distinctive subgroups of criminal offenders. Although most research has focused on the predictive utility of PCL-R total scores, early factor analyses suggested that the PCL-R was composed of two correlated factors (e.g., Harpur, Hare, & Hakstian, 1989). Factor 1 emphasizes "personality" traits consistent with Cleckley's conceptualization of psychopathy (e.g., callousness and grandiosity), whereas Factor 2 emphasizes the "social deviance" and criminality (e.g., impulsivity and parasitic lifestyle) associated with recent APD diagnostic criteria (Lilienfeld,

1998). More recent research (Cooke & Michie, 2001) suggests that the PCL-R may be underpinned by three, rather than two, factors. This model subdivides the "personality" domain of the PCL-R into separate facets that represent an *arrogant and deceitful interpersonal style* and the *deficient affective experience* thought to be characteristic of psychopathy. The model also eliminates several items from the "social deviance" domain that are more closely tied to criminal behavior (e.g., juvenile delinquency and criminal versatility) to create an *impulsive and irresponsible behavioral style* facet. Some authors have argued that different score configurations across the PCL-R's two or three factors (e.g., Hervé, Ling, & Hare, 2000; Mealey, 1995b) may be characteristic of specific variants of psychopathy.

Other reasons for hypothesizing the existence of variants range from inconsistencies in research examining the etiology of this disorder (see below, *What variants of psychopathy might exist?*), to phenotypic dissimilarities in the putative personality traits of individuals considered "psychopathic" (e.g., Hare, 1998a; Kosson, Smith, & Newman, 1990), to observed differences in the outcomes associated with this diagnosis (e.g., Hare, Clark, Grann, & Thornton, 2000). A substantial proportion of criminal "psychopaths," for example, are not convicted of subsequent crimes upon release (Hemphill et al., 1998; Salekin et al., 1996). This finding suggests that there may be compelling practical reasons for disaggregating psychopathy into more homogeneous subgroups.

If variants of psychopathy can be identified reliably and supported empirically, they may improve our ability to understand, treat, and manage a class of individuals who have largely been regarded as dangerous, "incurable cases" (see Cleckley, 1982; Karpman, 1946; Kernberg, 1998). Psychopathy is currently a global label that provides little "point of reference for clinical intervention" (Blackburn, 1988, p. 511; see also Gunn, 1998; Lösel, 1998). In fact, Gacono, Nieberding, Owen, Rubel, and Bodholdt (1997, p. 119) recently asserted that there was "nothing the behavioral sciences can offer for treating those with psychopathy," that is, those who exceed the PCL-R diagnostic threshold score of 30 (but see Salekin, 2001; Skeem, Monahan, & Mulvey, 2001 for a different perspective).

To the extent that psychopathy is etiologically heterogeneous, the outlook for treating and managing some variants need not be so pessimistic. As described later, several authors have argued that psychopaths differ in their symptomatology, characteristic patterns of violence, and amenability to treatment. For example, different psychopathic variants may be more or less amenable to conventional psychotherapies, based on differences in etiology and affective capacities. Similarly, there may be differences in characteristic types of aggression among psychopathic variants, with some disproportionately involved in instrumental aggression and others more impulsive, angry, and reactively violent (see Hart, S. & Dempster, R., 1997; Hart, S.D. & Dempster, R.J., 1997). Clearly, if variants were characterized by different risk factors for, and pathways to, antisocial and violent behavior, this finding would have key implications for violence risk assessment, management, and treatment. Before assessment and treatment can be tailored to individuals as a function of differential psychopathic/antisocial features, however, their feature constellations must be identified.

In this article, we use the modern construct of psychopathy to disaggregate and clarify the heterogeneity of APD. Our purpose is to distinguish among potential variants of APD that can be derived from, and informed by, seminal theories and contemporary research on

psychopathy. We do not distinguish variants characterized solely by chronic antisocial *behavior*. Instead, we focus on variants that also manifest the interpersonal and affective *personality* traits of psychopathy, in keeping with Cleckley's (1941) approach. Our goal is to distill the most promising theories and research on potential etiological and symptomatic variants of psychopathy to focus future investigations and advance our understanding of the broad psychopathy construct. We begin by examining the debate concerning how psychopathy and its variants should be classified. We review the early clinical literature on, and seminal theories of, "secondary" psychopathy. After summarizing existing typological research, we discuss specific variants that may exist and the dimensions that may discriminate among them. We conclude by discussing the possible implications of these variants for violence risk assessment, management, and treatment.

2. Dimensions or types?

There has long been controversy concerning whether personality disorders are dimensional or categorical; that is, whether those with personality disorders "differ from the rest of us in degree or kind" (Hare, 1998b, p. 194). Those who support the dimensional approach criticize the current categorical nomenclature for placing "boundaries where boundaries do not belong" (Allport, as quoted in Loranger, 1999, p. 202), and creating categories that are overlapping, indistinct, heterogeneous, unreliable, and of questionable validity (see Clark, 1999; Loranger, 1999). Those who support a categorical approach point out that there is no agreed upon, clinically useful dimensional model for *measuring* disorders. Regardless of whether disorders are underpinned by categories in nature, they argue that the categorical system "has proved to be a very effective shorthand form of communication" among clinicians (Loranger, 1999, p. 203; see also American Psychiatric Association, 1994).

Although the dimensional vs. categorical controversy has been waged over both psychopathy (Lilienfeld, 1994, 1998) and variants of pyschopathy (Baldwin, 1995; Eysenck, 1995; Mealey, 1995b; Zuckerman, 1995), there is little evidence to resolve this issue. The PCL-R provides both categorical and dimensional assessments of psychopathy, in that dichotomous classifications (psychopathic/nonpsychopathic) can be defined by cut-off scores and continuous scores can be used to represent the extent to which an individual matches the "prototypic psychopath" (Hare, 1991). Variants also may be characterized as categories (e.g., Types 1 and 2) or dimensional configurations (e.g., different score configurations on PCL-R factors and other trait dimensions such as neuroticism). Only one published study has addressed the issue of whether psychopathy is a categorical or dimensional construct. Based on a study of 653 offenders, Harris, Rice, and Quinsey (1994) applied several taxometric techniques developed by Meehl and Golden (1982) to ascertain whether several measures of antisociality, including the PCL-R, were underpinned by a taxon, or natural category. Although the authors concluded that psychopathy is a taxon,[1] they found taxonicity for

[1] These authors believe that psychopathy or persistent antisociality is largely defined by early behavior problems and antisocial behavior (see Quinsey, Book, & Lalumiere, 2001; Quinsey, Harris, Rice, & Cormier, 1998).

PCL-R Factor 2 and items assessing childhood antisocial behavior, but *not* PCL-R Factor 1, which is thought to represent the core personality features of psychopathy (Lilienfeld, 1998).

Given the paucity of compelling data, we will not attempt to resolve this debate. As noted by Loranger (1999, p. 203), in *measuring* personality disorders, there "is no inherent reason why one must choose between categories and dimensions. Dimensional information can easily be used to supplement the categorical diagnosis of personality disorder. . .." In keeping with this notion as well as Hare's (1991) approach toward measuring psychopathy, we provisionally adopt a prototype model (Rosch & Mervis, 1975) for conceptualizing variants, which combines dimensional and categorical approaches. Based on this model, prototypes can best be thought of as idealized individuals (see Tucker & Messick, 1964) that fall near the centroid of each variant and manifest all of the variant's most defining characteristics. Classification is based on a similarity matching process; as the number of characteristics that an individual shares with the variant's prototype increases, so does the likelihood that the individual is deemed a member of the variant. Because some individuals classified as members of a variant share a greater number of defining features with the prototype and are thus more "typical" of the variant than others, the variant is internally graded rather than uniform and discrete. In fact, some individuals classified as members of a variant fall near the variant's boundary and will share relatively few defining characteristics with any single variant. This is consistent with Lykken's (1995, p. 42) observation that "[h]uman nature being as complex as it is, . . .even an ideal taxonomy will yield 'fuzzy' and overlapping types. . .." Given this conceptualization, the central questions we pose in this article are those most relevant to identifying the idealized individuals or prototypes that represent each variant, that is, (1) what variants may exist? and (2) what dimensions of individual differences are necessary to capture them?

3. What variants of psychopathy might exist?

At least one seminal theory of psychopathy variants (Karpman, 1941) was published at about the same time as Cleckley's (1941) influential delineation of the core attributes of this disorder. Nevertheless, typologies of psychopathy rarely have been investigated systematically. In this section, we review theories and research on key variants of APD that can be derived from, and informed by, the personality-based conception of psychopathy defined earlier (see p. 4). We emphasize typologies with clear theoretical roots and empirical support in offender samples rather than describing an exhaustive list of typologies (e.g., Damasio, Tranel, & Damasio, 1990; Heilbrun & Heilbrun, 1985). We exclude contemporary theories with unclear bases and empirical support (e.g., Millon & Davis, 1998) and do not emphasize theories that distinguish among variants based solely on whether individuals are involved in prototypically "criminal" activity (e.g., the psychopathic criminal vs. the psychopathic stockbroker, Cleckley, 1941; Hare, 1998a).

We also exclude work that is not clearly consonant with the dominant North American conceptualization and measurement of psychopathy. Over the past three decades, Blackburn (1998a, 1998b, 1999) has completed sophisticated theoretical and empirical work on a

fourfold typology of violent offenders that includes two apparent variants of psychopathy. However, the measures used to derive and replicate this typology have chiefly been such self-report personality inventories as the MMPI (e.g., Blackburn, 1968, 1982, 1999). These general self-report measures correlate only moderately with the PCL-R and are more strongly and consistently associated with the social deviance of Factor 2 than with the core interpersonal and affective traits of Factor 1 (Blackburn, 1999; Harpur et al., 1989). For example, the correlation between the MMPI Psychopathic Deviate (Pd) Scale and Total scores on the PCL/PCL-R range from only −.17 to .29 (Brandt, Kennedy, Patrick, & Curtin, 1997; Cooney & Litt, 1990; Haapasalo & Pulkkinen, 1992; Hare, 1985; Harpur et al., 1989). With respect to the two putative variants of psychopathy identified by Blackburn, only 14% and 45%, respectively, qualify as psychopathic based on PCL-R threshold scores (Blackburn, 1998a). Because the theoretical and measurement traditions that underlie Blackburn's work differ from those associated with a large body of research in North America, we do not review Blackburn's work extensively.

A second potential variant of psychopathy that we do not discuss in detail is dyssocial psychopathy (Lilienfeld, 1994; Lykken, 1995),[2] which typically is conceptualized as a syndrome of antisocial behavior resulting from allegiance to a culturally deviant subgroup. Factor analytic studies of self-report data among antisocial adolescents by Quay and his colleagues (e.g., Peterson, Quay, & Tiffany, 1961) have sometimes identified a dimension labeled "subcultural delinquency," which captures the allegiances traditionally viewed as central to this construct. Dyssocial psychopaths presumably include many gang delinquents and political dissidents in repressive regimes who resort to violence as a means of accomplishing their goals. In contrast to some of the other variants of psychopathy that we will discuss, dyssocial psychopaths are believed to be capable of high levels of loyalty to people, political causes, or both. Valdez, Kaplan, and Codina (2000) found that over half of a sample of Mexican–American adolescent gang members received low scores on the screening version of the PCL-R and that only 4% received high scores. These findings suggest that many gang members do not possess the interpersonal and affective characteristics of primary psychopathy. Because of the paucity of research on dyssocial psychopathy and its apparent deviance from the "Cleckleyan traits" (Stone, 1993, p. 306) of psychopathy, we will not discuss this construct in further detail here.[3]

The key theories and research that we emphasize in our review converge to distinguish between two general variants of psychopathy: primary psychopathy and various overlapping conceptualizations of secondary psychopathy. Although some secondary psychopaths have been characterized as latent schizotypes (Hodgins, 1994; Raine & Venables, 1984), we review secondary variants that have received greater attention in the literature, which we label as "neurotic," "dissociative," and "disadvantaged."

[2] This syndrome is not to be confused with the ICD-10 diagnosis of dyssocial personality disorder, which is similar to the concept of primary psychopathy (World Health Organization, 1990).

[3] Nevertheless, we encourage further research on this potential variant of psychopathy, especially in countries characterized by loyal and intensely fierce underground political movements.

3.1. Karpman's "neurotic" secondary psychopath

3.1.1. The seminal theory

Karpman's influential typology of psychopathy arguably set the template for most of the theories reviewed here. Although Karpman (1948b, 1955) occasionally noted that psychotic rather than neurotic disorders may underlie secondary psychopathy, his work emphasizes an underlying depression, anxiety, or character neurosis. Karpman (1941) defined variants of psychopathy to narrow the concept of psychopathy to include only primary psychopathy and to broaden the concept of neurosis to include neurotic secondary psychopathy:

> in all too many instances one sees individuals exhibiting typical depressions or anxieties which in the ordinary course of events would have been diagnosed as neuroses; yet because they incidentally become involved in some social transgression they are promptly diagnosed as psychopathic personality. (Karpman, 1955, p. 23)

Such diagnostic mistakes were likely attributable to the fact that secondary (i.e., symptomatic and psychogenic) psychopaths behave much like primary (i.e., idiopathic and constitutional) psychopaths. According to Karpman (1948b, p. 457), both variants are characterized by irresponsible, antisocial, and hostile behavior: they "lie, cheat, and swindle... seemingly have no feeling or regard for others, and no guilt feelings. Their affectionate relationships with others are fleeting and undependable, and they seem not to profit by experience." Despite their surface similarities, however, the two variants are "entirely different" and should be distinguished based on the *etiology* of, and *motivation* for, their behavior (Karpman, 1941, 1948b). Secondary psychopaths' hostile, antisocial behavior was thought to reflect a character neurosis traceable to environmental causes, whereas that of the primary psychopath was thought to reflect the "instinctive emotional organization of a subhuman animal" (Karpman, 1948b, p. 533), which is rooted chiefly in constitutional deficits. Karpman (1941) believed that a diagnosis of secondary psychopathy was indicated when psychopathic behavior could be understood as part of an emotionally conditioned adaptation to such factors as parental rejection and harsh punishment, whereas primary psychopathy[4] could not, despite one's best efforts, be attributed to psychosocial learning.

According to Karpman (1948b), this difference bears crucial implications. Secondary psychopaths are capable of responding to psychotherapy because their behavior is based on an underlying conflict and they possess "the original capacity to absorb the elements of moral and ethical training" (p. 458). In contrast, according to Karpman, primary psychopaths are incurable and appropriate for indefinite institutionalization.

Karpman (1948b) linked etiological differences between the variants to subtle but crucial variations in their: (1) core interpersonal and affective features and (2) impulsivity and

[4] Karpman (1946, 1955) further distinguished between two variants of primary psychopathy: the aggressive-predatory and passive-parasitic variants. These variants are differentiated based on the extent to which their behavior is typically actively predatory (with great "push, daring, and energy") or passively parasitic (with violent predation only when a "proper host" is unavailable, 1946, p. 287).

motives for aggression. He argued that primary psychopaths are "absent conscience," but secondary psychopaths possess a conscience whose functioning is disrupted by the intrusion of strong, experience-based hostility ("disturbed conscience"). Thus, secondary psychopaths occasionally manifest a positive social trait or human emotion, such as guilt, empathy, love, or a wish for acceptance. In contrast, primary psychopaths are thoroughly calculating, selfish, and indifferent: he[5] "squeezes out all he can get out of the environment, but is not particularly interested in whether he gets affection along with it" (Karpman, 1941, p. 117).

Karpman (1948a) also argued that the primary psychopath was the less impulsive of the two variants. The primary psychopath "often coolly and deliberately plans his actions" (p. 528), rather than aggressing in the more characteristically "hot-headed" impulsive manner of the secondary psychopath. The primary psychopath often acts purposefully and directly to maximize his gain or excitement, whereas the secondary psychopath typically acts out of such emotions as hatred and revenge, often in reaction to circumstances that exacerbate his neurotic conflict (Karpman, 1955).

3.1.2. Relevant evidence

Karpman's theory has not been tested directly, but several lines of contemporary research on the etiology and correlates of psychopathy are relevant to it. Before outlining research relevant to etiology, we should note that researchers must use genetically informative designs (e.g., twin and adoption studies) to separate influences on human traits and behaviors across individuals into specific sources of genetic and environmental variance (see Plomin, Ashbury, & Dunn, 2001). The studies of potential genetic and environmental risk factors for psychopathy outlined next have not used such designs.

First, several information processing and neuroimaging studies indicate that many psychopaths demonstrate processing deficits, including a diminished startle response to negative or aversive emotional cues (Patrick, Bradley, & Lang, 1993), less autonomic arousal during fear and distress imagery (Blair, Jones, Clark, & Smith, 1997; Patrick, 1994), greater recall for the peripheral details of aversive images (Christianson et al., 1996), and impaired avoidance learning in the presence of salient reward and punishment cues (e.g., Newman, Patterson, Howland, & Nichols, 1990). Some of these deficits appear related to abnormalities in fronto-temporal functioning (Kiehl, 2001) and may be more strongly associated with Factor 1 than Factor 2 of the PCL-R (Harpur et al., 1989; Patrick, Zempolich, & Levenston, 1997). Although these results are sometimes regarded as evidence that psychopathy is genetically influenced, caution should be exercised in drawing premature inferences because the heritability of these psychophysiological and laboratory variables is unclear.

Second, studies consistently indicate that putative environmental factors like parental rejection, neglect, and abuse are associated with later antisocial behavior and psychopathy

[5] To promote reading ease, we typically use male pronouns to refer to psychopaths in this article because (1) criminal offenders are disproportionately male and (2) the PCL-R has been studied most thoroughly with male offenders (e.g., Hare, 1991). Notably, we are aware of one study relevant to variants of psychopathy among women. Based on a cluster analytic study of 66 female offenders, Widom (1978) identified a "primary" and "secondary/neurotic" type of psychopath. These results are promising and warrant replication using more contemporary and better-validated measures of psychopathy.

(see Forth & Burke, 1998; Margolin & Gordis, 2000; Marshall & Cooke, 1995; Porter, 1996). For example, in a sample of over 1000 individuals, Weiler and Widom (1996) found that participants who had been abused, neglected, or both had significantly higher (although subthreshold) PCL-R scores than participants who had not, even after controlling for differences in demographic characteristics and criminal history. However, because some of these putative "environmental" variables are subject to potential genetic confounds (see DiLalla & Gottesman, 1991), caution must be exercised in interpreting the results of these studies.

In short, research on the etiology of psychopathy is still in its early stages. These studies point to potential etiological influences in psychopathy but do not permit us to determine whether these influences are genetic, environmental, or both (see reviews by Dolan, 1994; Mealey, 1995a; Patrick et al., 1997). In order to determine whether specific variants psychopathy are more or less attributable to heritable or environmental influences, future research must: (a) adopt behavior genetic (e.g., twin and adoption) designs and (b) attempt to disaggregate psychopathy into variants rather than treat psychopaths as a homogeneous group.

Although there is little compelling etiological evidence, there is evidence that "high anxious" and "low anxious" psychopaths can be meaningfully discriminated (Kosson & Newman, 1995). This finding bears on Karpman's typology. Despite the traditional assumption that primary "psychopaths are very sharply characterized by a lack of anxiety" (Cleckley, 1964, p. 271), Schmitt and Newman (1999) found that PCL-R total scores were essentially independent of diverse self-report measures of anxiety, neuroticism, and fear. In fact, in keeping with Karpman's contention that observable differences between primary and secondary variants are subtle, Kosson et al. (1990, p. 254) found that individuals "with high PCL scores frequently obtain[ed] anxiety scores that would have been considered indicative of secondary psychopathy in past research." Moreover, high-anxious and low-anxious psychopaths have been shown to differ in their emotional responsiveness and information processing. For example, on learning tasks, high-anxious psychopaths appear more responsive to environmental contingencies (e.g., punishment) than do primary psychopaths (Kosson & Newman, 1995; see also Fagan & Lira, 1980; Goldman, Lindner, & Allen, 1971).

In light of observations on the relation between psychopathy and anxiety, some authors (e.g., Lewis, 1991; Lykken, 1995) have linked Karpman's theory with the Fowles-Gray model, viz., Fowles (1980) (Fowles & Missel, 1994) application of Gray's (1987), (Gray & McNaughton, 1996) neurophysiological work on anxiety to psychopathy. Gray's model of personality posits three motivational systems that influence behavior. Two of these systems are potentially relevant to psychopathy. The behavioral inhibition system (BIS) regulates responsiveness to aversive stimuli and is associated with anxiety, whereas the behavioral activation system (BAS) regulates appetitive motivation and is associated with impulsivity. According to the Fowles-Gray theory, primary psychopaths possess a weak BIS and do not experience anticipatory anxiety that causes most people to inhibit activity that leads to punishment or nonreward. According to Lykken (1995, p. 160), secondary psychopaths might, in contrast, resemble an individual with "an unusually active BAS," in keeping with Gray's linking of impulsivity to an overactive BAS (Newman & Wallace, 1993).

In summary, preliminary evidence is consistent with Karpman's discrimination between primary psychopaths and secondary, "neurotic" psychopaths. There is little support as yet for Karpman's etiological distinction between psychopaths, given that little behavior genetic research that attempts to disaggregate psychopathy based on genetic and environmental sources of influence has been conducted (but see Schulsinger, 1972). However, the work of Newman and others provide more compelling evidence for Karpman's distinction by indicating that "high anxious" and "low anxious" psychopaths may differ on putative etiological markers.

3.2. Porter's "dissociative" secondary psychopathy

Like Karpman, Porter (1996) distinguished between two variants of psychopathy based on different etiological pathways, one (primary) being predominantly congenital and the other (secondary) primarily environmental. However, elaborating on an excerpt from Cleckley (1982), Porter conceptualized secondary psychopathy as a dissociative disorder rather than a character neurosis. According to Porter, secondary psychopaths *acquire* the core emotional detachment of psychopathy after experiencing physical or sexual abuse, which leads them to "turn off" or "de-activate" their capacity to form emotional bonds and consequently their developing conscience (see also Lykken, 1995, for a discussion of the "hysterical psychopath"). As an adaptation to mistreatment, the child dissociates and progressively becomes emotionally blunted, which reduces stressful experience. In contrast, given their polygenic predisposition, primary psychopaths are, according to Porter, *born* (Porter, 1996, p. 182) with the core interpersonal and affective features of psychopathy (as assessed by PCL-R Factor 1). Although they have different diatheses, both primary and secondary psychopaths begin to manifest antisocial behaviors (Factor 2) during late childhood or adolescence.

Porter suggested that, to the extent that all psychopathic traits are related to an absence of affect, secondary psychopaths could often be phenotypically indistinguishable from primary psychopaths and therefore score in the "psychopathic" range on the PCL-R. He noted, however, that secondary psychopaths may not generally manipulate and harm others, thereby demonstrating less of the "user quality" (p. 186) typically associated with primary psychopathy. Like Karpman, Porter believes that secondary psychopaths might respond more favorably to available treatment approaches than do primary psychopaths.

Porter's theory is consistent with the evidence reviewed earlier on the association between child maltreatment and psychopathy, and on differences among psychopaths in their degree of anxiety, given that posttraumatic stress disorder (PTSD) is an anxiety disorder. Porter offered two additional arguments that symptoms of psychopathy and dissociation overlap. First, symptoms of both psychopathy and PTSD (Margolin & Gordis, 2000) are often preceded by childhood abuse. Second, although there are striking differences between the disorders,[6] psychopathy and PTSD do share such features as emotional unresponsiveness (Porter, 1996). Nevertheless, we found no direct investigations of the prevalence of dissociative

[6] For example, unlike typical psychopaths, most individuals with PTSD experience their disorder as ego dystonic and manifest high levels of anxiety and subjective distress.

symptoms among psychopaths. Moreover, the research cited here on the relation between child maltreatment and psychopathy is complicated by potential confounds that preclude causal inferences.[7] We also take issue with Porter's (1996) assertion that certain individuals are "born" with the core interpersonal and affective features characteristic of Factor 1. This assertion runs counter to findings from numerous behavior genetic studies (e.g., Tellegen et al., 1988) that personality traits are shaped substantially not only by genetic influences but also by environmental influences that are not shared by children growing up in the same family (i.e., influences that tend to decrease familial resemblance; see Plomin et al., 2001).

3.3. Mealey's "disadvantaged" secondary psychopath

Mealey's (1995a, 1995b) sociobiological conception of secondary psychopathy is the most distinctive of those reviewed here, given that it casts secondary psychopathy as an evolutionary adaptation rather than as an emotional impairment or disorder. Mealey (p. 536) suggested that primary psychopaths are genetically endowed with a temperament and arousal pattern that predisposes them to "be selectively unresponsive to the cues necessary for normal socialization and moral development." According to Mealey, primary psychopathy represents one mechanism for maintaining the strategy of "cheating" in speciation and extinction contests between individuals (i.e., using a deceptive strategy and defecting after signaling cooperation). Because they lack social emotions,

> [i]n determining how to 'play' in the social encounters of everyday life, [primary psychopaths] will use a pure cost–benefit approach based on immediate personal outcomes, with no 'accounting' for the emotional reactions of the others with whom they are dealing. Without love to 'commit' them to cooperation, anxiety to prevent 'defection,' or guilt to inspire repentance, they will remain free to continually play for the short-term benefit. . .. (Mealey, 1995a, p. 536)

According to Mealey (1995a), because primary psychopaths reflect a genetic mechanism for maintaining the strategy of cheating, they are a small group of unchanging frequency. Secondary psychopaths reflect a second, less genetically and more environmentally influenced mechanism for maintaining this strategy, and therefore represent a variable proportion of psychopaths. For Mealey (p. 530), secondary psychopaths become psychopathic "'phenocopies' when the carrying capacity of the 'cheater' niche grows." Secondary psychopaths experience social emotions, but pursue a life strategy that involves frequent (but not emotionless) antisocial behavior, based largely on their life experiences and environmental contingencies.

Secondary psychopaths who are *competitively disadvantaged* with respect to their ability to obtain resources and mating opportunities are believed most likely to adopt this cheating strategy. Mealey (1995a) reviewed research on several sources of competitive disadvantage, including low socioeconomic status, inconsistent discipline, and family violence, which are

[7] For example, if psychopathy is strongly genetically influenced, psychopathic children are more likely to have psychopathic parents who, in turn, are more likely to abuse their children (see DiLalla & Gottesman, 1991, for a discussion).

believed to handicap children socially, academically, and emotionally, relative to their peers. These disadvantages lead them to seek alternative peer groups in which they may be less handicapped in their ability to "commandeer resources, deter rivals, or gain sexual opportunities" (p. 528). Ultimately, this path often leads to antisocial behavior.

Unlike primary psychopaths, secondary psychopaths "will almost always come from lower class backgrounds and their numbers could vary substantially across cultures and time, tracking environmental conditions that favor or disfavor the use of cheating strategies" (p. 537). Mealey argued that psychopaths from higher socioeconomic classes were highly likely to be primary psychopaths. She cited Raine's (1988) (see also Ishikawa, 2000) research on the relation between class and physiological arousal among antisocial subjects to support her contention that when upper class individuals engage in psychopathic behavior, it is likely to be the result of a particularly strong genetic disposition.

Like those of other theorists, Mealey's etiological distinctions between psychopathic variants bear implications for prevention and treatment. Mealey argues that society can strive only to better detect and manage the cheating behavior of primary psychopaths. However, secondary psychopathy could be largely prevented by reducing social stratification and by providing early intervention and social support for disadvantaged children at risk. Secondary psychopaths, Mealey argued, may also benefit from psychotherapy and pharmacotherapy.

An impressive array of experts has commented on Mealey's work. Only two basic points will be noted here. First, although Mealey reviewed research from multiple fields to make her arguments, much of this research is based on antisocial behavior or APD rather than psychopathy per se. Second, Mealey (1995b) cast primary psychopathy as a taxon and secondary psychopathy as a dimension. However, she noted that, according to her model, primary psychopaths would obtain high scores on PCL-R Factor 1 and high *or* low scores on Factor 2, whereas secondary psychopaths would obtain high scores only on Factor 2. However, as noted earlier, Harris et al. (1994) found taxonicity only for Factor 2, *not* Factor 1, which runs counter to Mealey's model.

3.4. Cluster analytic studies of the PCL/PCL-R

Available research on variants of psychopathy appears largely separate from the most thorough theoretical work on the topic. We located only three studies that have addressed directly the issue of psychopathic variants. First, based on a sample of 92 nonviolent Finnish prison inmates, Haapasalo and Pulkkinen (1992) cluster analyzed 18[8] PCL items and compared the obtained subgroups on a limited set of criminal history and self-report personality variables (e.g., MMPI Scales 4 and 9) that were not used to derive the clusters. The authors identified three subgroups. Cluster 1 ($n=27$) was characterized by the highest PCL scores ($M=23$), with particularly elevated scores on the Cleckleyan traits comprising Factor 1. Inmates in this cluster received longer prison sentences than those in the other clusters. Cluster 2 ($n=23$, PCL $M=17$) was composed of inmates whose scores were relatively higher across such PCL Factor 2 items as poor behavioral controls. These

[8] These 18 items excluded 'promiscuous sexual behavior' and 'many short-term marital relationships.'

individuals had a greater number of prior convictions than those in other clusters. Individuals in Cluster 3 ($n=42$) obtained the lowest PCL scores ($M=7$) and had less diverse offenses and a later onset of criminal activity than those in Cluster 2. These three clusters were not interpreted extensively. In fact, the authors made few a priori hypotheses about the nature of the groups or their differences on the criterion variables. Arguably, however, Groups 1, 2, and 3 are broadly consistent with notions of primary psychopathy, secondary psychopathy, and APD, respectively.

With similarly few a priori hypotheses, but a somewhat different classification approach, Alterman et al. (1998) cluster analyzed four measures to identify variants of antisociality among 252 male methadone patients. The four measures consisted of total scores on a 17-item[9] version of the PCL-R, conduct disorder (CD) criteria, adult APD criteria, and scores from the California Psychological Inventory—Socialization (So) Scale. Using a three-stage clustering procedure, the authors identified six groups that differed from each other on several criterion measures (e.g., Addiction Severity Index, SCID, and SIDP-R) that were not used to generate the cluster solution.

Three of these clusters were characterized by relatively high scores on the PCL-R. Type 1 (*Early onset, high antisociality*) accounted for approximately 11% of the total sample and was characterized by elevations across all four clustering variables. Patients in this cluster had severe drug and alcohol problems and extensive criminal histories, as well as high levels of hostility, depression, anxiety, and personality disorder (e.g., borderline and paranoid), including psychopathic traits (PCL-R $M=21$, 52% classified as psychopathic). Type 2 (*Late onset, high antisociality*) constituted about 12% of the sample and was characterized by significant elevations on all of the clustering variables except for CD symptoms, on which their scores were moderate. Like Type 1 patients, these patients appeared to suffer from severe depressive and anxiety symptomatology, drug and alcohol difficulties, and personality disorder (e.g., histrionic and narcissistic) characteristics, including psychopathic traits (PCL-R $M=23$, 70% psychopathic). Finally, the *Psychopathic criminal, moderate antisociality* (Type 5) cluster comprised approximately 15% of the sample and evidenced elevated scores on the PCL-R ($M=20$, 47% psychopathic), but not on any of the remaining antisociality clustering variables. Although high levels of criminal involvement were noted, drug and alcohol problems, emotional distress, and features of other personality disorders were relatively low.

The extent to which patients in these clusters exhibited different PCL-R factor score configurations is unclear, in part because the authors believed that the covariance between factor scores ($r=.65$) was "so great that they provided no meaningful profile distinctions" (Alterman et al., 1998, p. 414). The primary apparent distinction between the clusters lies in psychopathology. As noted by the authors, Types 1 and 2 manifest high levels of psychopathy in combination with "mood disturbance and psychopathology" (p. 419), whereas those in Type 5 more specifically manifest Cleckleyan traits of psychopathy. Arguably, then, Types 1–2 and Type 5 may loosely correspond to several variants of secondary and primary psychopathy, respectively.

[9] These 17 items were those that comprise the two factor scores of the PCL-R.

Hervé et al. (2000) conducted the third and final study of psychopathy variants of which we are aware. These authors hypothesized that *all* pychopaths would suffer from an emotional/affective deficit, but differ in their interpersonal and behavioral presentation. Thus, they proposed a three-group typology based on Cooke and Michie's (2001) three-factor model of psychopathy. Using archival data from 411 Canadian federal prison inmates who obtained high scores (≥ 27) on the PCL-R, the authors cluster analyzed inmates' scores across the three factors. They identified four groups that included the *macho*, *manipulative*, and *prototypical* psychopathic groups they had hypothesized, as well as a fourth group they labeled *sociopaths*. The macho group (PCL-R $M = 31$) was characterized by elevations on the "deficient affective experience" and the "impulsive and irresponsible behavioral style" facets, with more moderate scores on the "arrogant and deceitful interpersonal style" facet. Manipulative psychopaths (PCL-R $M = 29$), by comparison, displayed elevations on both the "deficient affective experience" and the "arrogant and deceitful interpersonal style" facets, with moderate scores on the "impulsive and irresponsible behavioral style" facet. Not surprisingly, the prototypical group displayed marked elevations on all three PCL-R facets ($M = 33$). However, the *sociopaths* (PCL-R $M = 28$) obtained moderate elevations more exclusively on the "impulsive and irresponsible behavioral style" facet.

Although this typology has been identified using other datasets (Hare, 2001), attempts to replicate the solution apparently have consisted only of using the centroids of the solution derived above to define a starting point for clustering the new datasets rather than independently clustering the new data (Hervé, personal communication, June 27, 2001). More important, these groups have not yet been externally validated, that is, examined to determine whether they differ on variables that are conceptually related to, but different from, those used to cluster them (e.g., violence characteristics and response to treatment). Thus, it is unclear whether these distinctions are meaningful and useful. Nevertheless, the groups identified in this study are consistent with conceptualizations of primary ("prototypical") and secondary psychopathy ("sociopaths" without significant affective deficits), and with Hare's (1998a) previously noted distinction between psychopaths who commit, or do not commit, prototypically criminal activity (e.g., the "macho" robber vs. the "manipulative" lawyer or white collar criminal).

It is difficult to draw conclusions on the basis of these three studies, given substantial differences in their samples (e.g. prison inmates, methadone patients, and nonviolent offenders), clustering variables (e.g., PCL items, total, and factor scores alone or in combination), and methodology (e.g., clustering approach and validation variables). In fact, the investigation of variants of psychopathy is in its infancy and seems to be characterized much more by theory and informed speculation than by data. Nevertheless, the convergence among the three studies provides preliminary support for distinguishing between primary psychopathy (Haapasalo & Pulkkinen's Cluster 1; Alterman et al.'s Type 5; Hervé et al.'s prototypical psychopath) and secondary psychopathy (Haapasalo & Pulkkinen's Cluster 2; Alterman et al.'s Types 1–2; Hervé et al.'s sociopath). Distinctions among variants in these studies typically are based on the presence or absence of an affective deficit (Haapasalo & Pulkkinen, 1992; Hervé et al., 2000) and features of psychopathology, particularly symptoms of mood disorders (Alterman et al., 1998; Haapasalo & Pulkkinen, 1992).

Although the data are even more preliminary, it is worth noting that there have been a few attempts to identify psychopathic variants among juveniles. Relevant research has been conducted with the Psychopathy Screening Device (PSD), which was recently re-named the Antisocial Process Screening Device (APSD; Frick & Hare, in press). The APSD is a 20-item behavior rating scale that assesses features of psychopathy (via parent- and teacher-report) that are similar conceptually to the PCL-R. Early factor analytic studies of the APSD identified two factors, Callous–Unemotional (CU) and Impulsive–Conduct Problems (I/CP). Although these factors correspond loosely to the two-factor structure of the PCL measures and correlate in a theoretically coherent pattern with external variables (see review by Edens, Poythress, & Watkins, 2001; Edens, Skeem, et al., 2001), there is mixed evidence about the extent to which the APSD and PCL measures assess the same construct (cf. Cruise, 2000; Forth & Mailloux, 2000).[10] Christian, Frick, Hill, Tyler, and Frazer (1997) cluster analyzed the CU scale of the APSD (see above, p. 11) and ODD/CD symptoms in a sample of 120 clinic-referred children (*M* age = 9, S.D. = 2). They identified four groups: (a) clinic control ($n = 39$), (b) callous/unemotional ($n = 41$), (c) impulsive conduct ($n = 29$), and (d) psychopathic conduct ($n = 11$). Relative to the other three clusters, children in the psychopathic conduct cluster manifested the greatest number of oppositional, aggressive, and covert property-destructive symptoms.

Consistent with the adult work of Cooke and Michie (2001), a recent study by Frick, Bodin, and Barry (2001) suggested that a three-factor model could be applied to the APSD. In a large community sample of third, fourth, sixth, and seventh graders ($n = 810$), items related to narcissism, which had loaded on the I/CP factor in prior studies, formed a separate factor that was stable across both parent and teacher ratings. Frick et al. (2001) cluster analyzed APSD scores from this model and identified five clusters in the community sample. The largest subgroup ($n = 288$, 36% of the total sample) obtained relatively low scores across all three scales. Three other subgroups were identified (*n*'s ranging from 121 to 157) that showed elevations on one of the APSD subscales. Most relevant to the present review was the final group, which was composed of children ($n = 114$, 14% of the total sample) who received high scores across all three subscales ("high psychopathy"). Compared to the other clusters, these children had by far the highest rates of DSM-IV symptoms of ODD and CD.

Also of potential relevance to the primary vs. secondary distinction in the adult literature is the finding that the association between callous/unemotional traits and aggression in children does not appear to be moderated by quality of parenting. That is, whereas ineffective parenting has been found to predict behavior problems in children without these traits, conduct problems have been found to be present among children high on callous/unemotional traits *regardless* of the quality of parenting they receive (Wooton, Frick, Shelton, &

[10] Forth and Mailloux (2000) describe McBride's unpublished doctoral dissertation finding that the APSD was only weakly associated (r=.35) with the youth version of the PCL (PCL:YV) and that both factors of the APSD were correlated with Factor 2 (CU: r=.28, I/CP: r=.43) but not Factor 1 (CU: r=.15, I/CP: r=.19) of the PCL:YV. In contrast, Cruise (2000) found that a self-report version of APSD was more strongly associated with the PCL:YV and more strongly associated with Factor 1 (CU: r=.52, I/CP: r=.42) than Factor 2 (CU: r=.15, I/CP: r=.26).

Silverthorne, 1997). It is tempting to infer that this finding supports the position that the development of "primary" psychopathic traits is less a function of the environmental factors that have been hypothesized to play a more prominent role in the development of "secondary" psychopathy, although clearly much more research is needed.

Although these studies are intriguing, we are hesitant to draw any strong conclusions about the extent to which these juvenile groups correspond to the distinctions between primary and secondary psychopathy reviewed earlier. For example, although the psychopathic conduct group identified by Christianson et al. (1996) and the high psychopathy group noted by Frick et al. (2001) appear to contain the candidates most likely to be identified as primary psychopaths in adulthood, there are various conceptual and psychometric reasons to be suspicious of such assertions. Not the least of these reasons is the absence of any longitudinal data on the stability of the APSD (for an extensive review of other concerns about 'juvenile psychopathy,' see Edens, Poythress, et al., 2001; Edens, Skeem, et al., 2001). Despite these reservations, it seems obvious that several of the other subgroups resemble (at least phenotypically) some of the adult clusters described earlier (e.g., the "callous/unemotional" subtype identified by Christianson comporting with the "manipulative" psychopath described by Hervé et al., 2000). Whether these subgroups predict any particular developmental trajectory over time that results in a specific variant of psychopathy in adulthood is an unanswered empirical question.

3.5. What dimensions might best capture differences among variants?

Given that existing theory and research suggest that primary and secondary variants of psychopathy may exist, the next logical step is to apply this work to identify dimensions that may maximally distinguish among these variants. The theories reviewed earlier share the premise that the most fundamental differences between primary and secondary psychopathy are *etiological*: primary psychopathy is believed to reflect stronger genetic influences, whereas secondary psychopathy is thought to reflect stronger environmental influences (i.e., faulty parenting, exposure to trauma, and social disadvantage). These etiological differences may also correspond to differences between the variants in their responsivity to traditional forms of treatment, with secondary psychopaths being less recalcitrant. It should be pointed out, however, that differences in etiology do not necessarily imply differences in treatment response (and vice versa). Four domains of differences in addition to etiology may be useful in distinguishing between primary psychopathy and various forms of secondary psychopaths.

First, the dimensions that underlie the PCL-R may distinguish between primary and secondary variants of psychopathy, particularly the *deficient affective experience* and *impulsive and irresponsible behavioral style* facets (Cooke & Michie, 2001) of this measure. Each theory described earlier distinguishes between primary and secondary psychopathy based on their affective capacities. According to Karpman (1948b), although primary psychopaths possess a weak conscience, secondary psychopaths possess disturbed consciences and occasionally experience emotions like empathy, guilt and love. Porter (1996) distinguished between primary psychopaths with affective deficits and secondary psycho-

paths who gradually dampen their capacity for emotional bonds with others. Similarly, Mealey (1995a) noted that, unlike primary psychopaths, secondary psychopaths experience social emotions but pursue antisocial behavior because of environmental contingencies. Notably, Karpman (1941) also distinguished between the variants by describing secondary psychopaths as more impulsive than primary psychopaths. These premises enjoy some empirical support. In the three cluster analytic studies of adults described earlier, the groups that seemed most similar to primary psychopathy were characterized on the PCL by "Cleckleyan traits" (Alterman et al., 1998), high Factor 1 scores (Haapasalo & Pulkkinen, 1992), or high scores across all factors (Hervé et al., 2001). In contrast, the groups that seemed most similar to secondary psychopathy were characterized by high Factor 2 scores (Haapasalo & Pulkkinen, 1992) or by high scores exclusively on the *impulsive and irresponsible behavioral style* facet (Hervé et al., 2001). Thus, primary psychopaths may be characterized by more affective deficits (Factor 1, affective facet) and less impulsivity (Factor 2, lifestyle facet) than secondary psychopaths. This hypothesis is consistent with (a) previously presented evidence that deficits in processing emotional stimuli are more strongly associated with the personality features of PCL-R Factor 1 than the impulsivity of Factor 2 (Harpur et al., 1989; Patrick et al., 1997; see also Blair, 1999) and (b) Colledge and Blair's (2001) finding that, when controlling for the correlation between the two factors of the APSD, impulsivity is much more strongly correlated with the I/CP factor (which grossly corresponds to Factor 2, r=.57) than the CU factor (which grossly corresponds to Factor 1, r=.10). Again, affective deficits (Factor 1) and impulsivity (Factor 2) are dimensions that may distinguish between psychopathy variants.

The second key dimension of difference between primary and various secondary variants of psychopathy appears to be "neuroticism" or trait anxiety. As previously explained, the work of Newman and his colleagues provides cogent evidence that individuals who obtain high scores on the PCL/PCL-R may be distinguished as "high anxious" and "low anxious," and that high-anxious and low-anxious psychopaths differ in their emotional responsiveness and information processing. Hare (1991) found that measures of trait anxiety and neuroticism were inversely associated with PCL/PCL-R Factor 1 and positively associated with Factor 2. In a similar vein, Frick, Lilienfeld, Edens, Poythress, and McBurnett (2000) assessed the relation between measures of trait anxiety and the two factors of the APSD, but did so based on partial correlations that controlled for the association between the scale's two factors. These authors found that trait anxiety was positively correlated with the CU factor, but negatively correlated with the I/CP factor. Based on the review above, we might expect secondary psychopaths to exhibit marginally lower CU or PCL-R Factor 1 scores, and somewhat higher I/CP or PCL-R Factor 2 scores, relative to primary psychopaths. Thus, the finding that trait anxiety is positively associated with the impulsivity and deviance of secondary psychopathy, and negatively associated with the callousness and affective deficits of primary psychopathy suggests that trait anxiety may be an important dimension of difference between these variants.

The extent to which this dimension should be narrowly conceptualized as neuroticism or more broadly conceptualized as negative affectivity (e.g., anxiety, dysphoria, depression, hostility, and alienation) remains to be determined. In the three-cluster analytic studies of

adults described earlier, groups that appeared consistent with secondary psychopathy (Haapasalo & Pulkkinen's Cluster 2; Alterman et al.'s Types 1–2) manifested more symptoms of mood disorders than did groups that appeared consistent with primary psychopathy (Haapasalo & Pulkkinen's Cluster 1; Alterman et al.'s Type 5).

A third domain of differences relevant to distinguishing among psychopathic variants is the constellation of traits that characterizes borderline personality disorder (BPD). Blackburn (1996, p. 19) asserted that secondary psychopaths "may be predominantly borderline personalities." As previously noted, Blackburn (1998a, 1999) derived a typology of offenders based on self-report personality measures that are only moderately correlated with the PCL-R. This typology includes two groups that Blackburn labeled as primary and secondary psychopaths. Blackburn found that secondary psychopaths qualify more often for diagnoses of BPD than do primary psychopaths, who more often exhibit antisocial and narcissistic disorders (Blackburn, 1998a; Blackburn & Coid, 1999; see also Hart & Hare, 1989). In keeping with this observation, based on a small sample ($n = 28$) of mentally disordered offenders, Blackburn and Lee-Evans (1985) found that secondary psychopaths endorsed significantly more autonomic arousal (e.g., sweating and heart racing) in response to a set of hypothetical scenarios describing attack and frustration than did primary psychopaths. Secondary psychopaths also described the most intense reactions (i.e., arousal, aggression, and anger) to the scenarios, particularly to those describing verbal or physical threats.

Other authors have argued that there is considerable overlap between psychopathic and BPD features (Kernberg, 1975; Meloy, 1988). This overlap may characterize the impulsive, anxious, angrily reactive secondary psychopath described by Blackburn. Based on case studies, Meloy and Gacono (1993) implied that there is a "borderline psychopath." Although their research has not focused on specific variants of psychopathy, these authors have found that psychopathy, BPD, and narcissistic personality disorder (NPD) are characterized by borderline personality defense mechanisms and immature object relations (Gacono, 1990; Gacono & Meloy, 1992; Gacono, Meloy, & Berg, 1992). Although their measure of psychopathy was based on the Rorschach (see Wood, Lilienfeld, Garb, & Nezworski, 2000),[11] similar results have been obtained in other research. For example, Edens, Buffington-Vollum, et al. (in press) reported on comparisons between the PCL-R and the Personality Assessment Inventory (PAI; Morey, 1991) in a sample of convicted sex offenders. Although the primary focus of this study was on the Antisocial Features scale of the PAI, re-analysis of these data for the present review indicated that the Borderline Features scale was a significant correlate of Factor 2 of the PCL-R (r=.32), although neither Factor 1 nor the total score were significantly associated with this scale (r's=.02 and .19, respectively). Similarly, male offenders' scores on a self-report measure of psychopathy, the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996), have been shown to be associated with borderline personality features, including primitive defense mechanisms, identity diffusion, and poor reality testing (Sandoval, Hancock, Poythress, Edens, & Lilienfeld, 2000; see also Edens, Poythress, et al., 2001).

[11] The Rorschach has been criticized because variables derived from the Comprehensive System, the most frequently used Rorschach scoring and interpretive system, have not consistently been found to correlate with measures of psychopathy (see also Lilienfeld, Wood, & Garb, 2000).

Several additional studies have examined the relation between PCL-R factor scores and the diagnostic criteria for BPD. There is evidence that PCL/PCL-R total scores are significantly (*r*'s=.10–.60) associated with measures of BPD in male inmates and forensic outpatients (Raine, 1986; Shine & Hobson, 1997; Stålenheim & von Knorring, 1996), female inmates (Salekin et al., 1997), and opiate dependent men (Rutherford, Alterman, Cacciola, & McKay, 1997). More importantly, studies that have examined the relation between PCL-R factor scores and BPD scores (e.g., Hart & Hare, 1989; Rutherford et al., 1997; Salekin et al., 1997; Shine & Hobson, 1997) indicate that BPD tends to be more strongly associated with Factor 2 (*r*'s=.26 to .74) than with Factor 1 (*r*'s = − .03 to .38). Although these findings do not directly address the issue of secondary psychopathy, they suggest that BPD features covary with such secondary psychopathic features as anxiety, impulsivity, and angry reactivity (see Hart & Hare, 1989).[12]

The last domain of difference that may be particularly useful in distinguishing between primary and secondary psychopathy is narcissism. There is evidence that PCL/PCL-R scores are moderately associated with measures of NPD in adult (Hart & Hare, 1989; Reiss, Grubin, & Meux, 1999) and juvenile (Myers, Burket, & Harris, 1995) offender populations, with higher associations between NPD and Factor 1 (*r*=.49) than Factor 2 (*r*=.27; Hare, 1991).

Recently, McHoskey, Worzel, and Szyarto (1998) conducted a series of five studies with undergraduates that revealed a considerable amount of overlap among the constructs of narcissism, psychopathy, and Machiavellianism (MACH, which the authors conceptualized as essentially the same construct as psychopathy, with roots in the social and personality, rather than clinical, psychology literature). Psychopathy was assessed using Levenson et al.'s (1995) and Smith's (1985) self-report scales. Levenson's scales of primary and secondary psychopathy are broadly consistent with PCL-R Factors 1 and 2, respectively, although we could find no reports of the measure's degree of association with the PCL/PCL-R. Narcissism was assessed with the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979). The authors found that, as expected, MACH was strongly associated with psychopathy (all scales) and moderately associated with narcissism. More important, narcissism was strongly associated with primary psychopathy (*r*=.51) and moderately associated with secondary psychopathy (*r*=.25). In fact, after controlling for the association between these two psychopathy scales, narcissism remained strongly associated with primary psychopathy (partial *r*=.46), but manifested no unique association with secondary psychopathy (partial *r* = − .01). This finding is consistent with PCL-R-based findings that narcissism is more strongly linked to primary than secondary psychopathy.

McHoskey et al. (1998) also found that Levenson's primary and secondary measures of psychopathy correlated with measures of the BIS and BAS motivational systems, disinhibi-

[12] Although Hart and Hare (1989) argued that BPD relates more strongly to Factor 2 than Factor 1, whereas NPD and HPD relate more strongly to Factor 1 than Factor 2, support for the latter claim is equivocal. Measures of NPD are often (*r*'s=.29–.39) correlated with PCL-R total scores (e.g., Hart & Hare, 1989; Rutherford et al., 1997; but see Shine & Hobson, 1997), but are associated with Factor 1 but not Factor 2 scores in some studies (e.g., Hart & Hare, 1989) and vice versa in others (e.g., Shine & Hobson, 1997). A similarly inconsistent pattern of findings holds true for the PCL-R and measures of HPD (Hart & Hare, 1989; Hamburger, Lilienfeld, & Hogben, 1996; Rutherford et al., 1997; Salekin et al., 1997; Shine & Hobson, 1997).

tion, and neuroticism (trait anxiety) in theoretically coherent ways. Specifically, the primary psychopathy scale was negatively associated with neuroticism and BIS scores and positively associated with disinhibition scores. In contrast, the secondary psychopathy scale was positively associated with measures of neuroticism, BIS, impulsivity, and BAS. Both scales were strongly associated with self-reported indices of antisocial behavior (r=.46–.47). These findings support the predictive validity of Levenson's scales and lend credence to the authors' finding that primary psychopathy is strongly associated with narcissism.[13]

Over the past 10 years, researchers have been refining conceptualizations of narcissism in ways that bear upon variants of psychopathy. Noting the relatively weak associations among leading measures of narcissism and NPD, Wink (1991) factor analyzed the scores of 350 community residents across six measures of these constructs. He identified two factors, which he labeled vulnerability–sensitivity and grandiosity–exhibitionism. These factors related in theoretically coherent ways with self-report and observer ratings of personality. Both factors were associated with measures that tapped "undercontrol of aggressive and erotic impulses, unconventionality and rebelliousness, and insistence on self-expression, even at the expense of others" (p. 593). However, the vulnerability–sensitivity factor correlated negatively with measures of social poise and self-assurance, whereas the grandiosity–exhibitionism scale correlated positively with these measures. Similarly, unlike the grandiosity–exhibitionism scale, the vulnerability–sensitivity factor was associated with low scores on measures of well-being and personal adjustment, suggesting a vulnerability to "life's traumas" (p. 594). Spousal ratings of those who scored highly on both factors emphasized bossiness, demandingness, intolerance, argumentativeness, arrogance, and cruelty. However, spouses described those scoring highly on the vulnerability–sensitivity factor as "anxious and moody, defensive, bitter, and not mature" (p. 595), whereas spouses described high scorers on the grandiosity–exhibitionism scale as "aggressive, outspoken, show-off, egotistical, assertive, and not modest" (p. 595).

Wink argued that these two factors are consistent with psychodynamic theorists' distinction between covert and overt forms of narcissism. Overt narcissism "stresses arrogant self-assurance, blatant self-confidence, and flagrant display of superiority" (p. 591). In contrast, covert narcissism "is marked by largely unconscious feelings of grandeur and openly displayed lack of self-confidence and initiative, vague feelings of depression, and an absence of zest for work" (p.591). Although this distinction is conjectural at present, overt and covert forms of narcissism may relate to primary and secondary psychopathy, respectively. In Wink's (1991) study, the measure of narcissism used by McHoskey et al. (1998) loaded on the grandiosity–exhibitionism factor. Thus, McHoskey et al.'s finding that this form of narcissism was correlated with primary but not secondary psychopathy is consistent with the view that primary psychopathy involves overt narcissism.

In a similar vein, Wink and Donahue (1997) found that, although both overt and covert forms of narcissism are associated with measures of boredom proneness, overt narcissism is

[13] Nevertheless, the positive association between secondary psychopathy and BIS scores in this study is not entirely consistent with the Fowles-Gray model explained previously (see Section 3.1), which predicts only that secondary psychopathy would be positively associated with BAS activity.

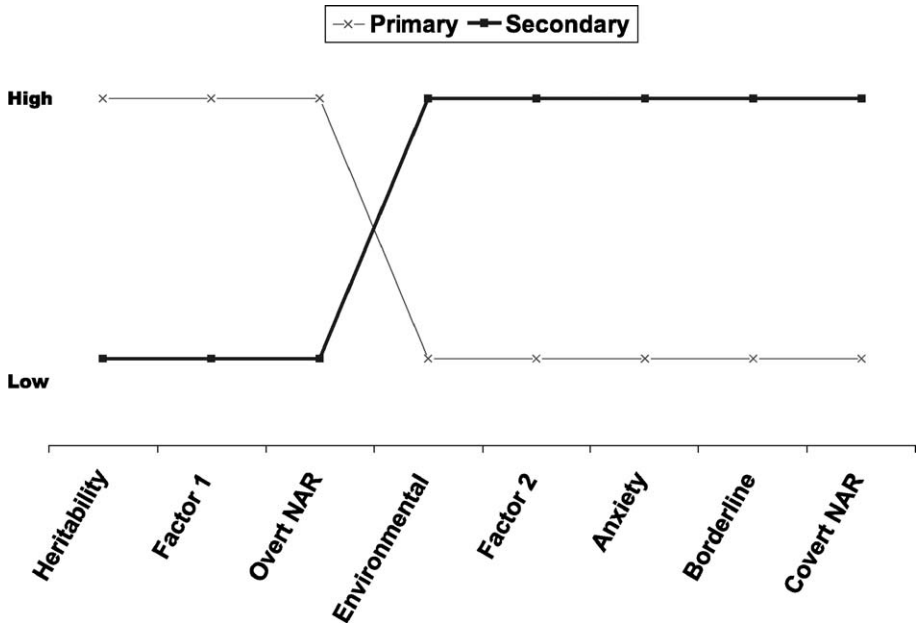

Fig. 1. Hypothetical relative score configuration of primary and secondary psychopaths on key dimensions of distinction between variants.

associated with measures of restlessness and impatience in the face of external constraints whereas covert narcissism is more associated with a sense of tedium and meaninglessness and difficulty keeping oneself interested and stimulated. These findings suggest that overt narcissism may be associated with little inhibition or a weak BIS (like primary psychopathy), whereas covert narcissism may be associated with appetitive impulsivity or a strong BAS (like secondary psychopathy). As explained later, given work on the relation between *unstable* inflated self-esteem, ego threat, and aggression (Baumeister, Smart, & Boden, 1996; Salmivalli, 2001), these findings may hold implications for the situations in which covert narcissists, and perhaps secondary psychopaths, are at risk for violence.

In Fig. 1, we present a hypothetical configuration of scores for primary and secondary psychopaths across these potentially key dimensions of distinction between variants, including etiology (*heritability* and *environmental* influence), PCL-R *Factor 1* affective deficits, PCL-R *Factor 2* impulsivity, trait *anxiety*, characteristics of BPD, and *overt* and *covert* narcissism (NAR).

4. Implications of variants for research and practice

In summary, theories and empirical work converge to distinguish between primary and various secondary subtypes of psychopathy. These variants can be distinguished based on their etiology, degree of neuroticism, pattern of traits across the PCL facets (e.g., affective

deficits and impulsivity), and degree of borderline and narcissistic personality traits. It remains for future research to determine (a) whether these variants exist and (b) the extent to which distinctions among them are clinically useful. In this section, we describe the implications of these variants for future research and for clinical and legal practice.

4.1. Research implications

As the preceding review clearly illustrates, considerable work remains to be done before the field will have definitive information regarding the existence and clinical significance of putative variants of psychopathy. Here, we note what we believe to be three key issues regarding future research in this area. The first issue relates to the type of statistical procedures used to investigate the existence of variants. If cluster analytic studies will be the "norm" for research on variants of psychopathy, more emphasis must be placed on theoretically driven approaches and establishing the validity and clinical utility of the obtained clusters. For example, investigators could: (a) use such descriptive dimensions as those delineated earlier in an attempt to identify hypothesized variants of psychopaths and then (b) assess whether the identified variants differ appreciably (and in hypothesized ways) in their patterns of violence and amenability to treatment.

Second, as previously explained, because distinctions between primary and secondary variants often are premised on differing etiologies, behavior genetic studies that systematically identify etiological influences are needed. Although considerable research has been conducted regarding developmental pathways to the more general categories of juvenile delinquency and adult antisocial behavior, at present, we know very little about how this literature relates to the smaller group of individuals who would be defined as psychopaths in adulthood and even less about how it might inform our understanding of potential variants of psychopathy. Such research obviously would be best informed by a longitudinal design,[14] which has been lacking in most research on psychopathy (Edens, Poythress, et al., 2001; Edens, Skeem, et al., 2001). At present, we know very little about the stability of PCL-R scores over time and even less about the stability of any proposed variants.

The third key issue involved in studying the existence and clinical utility of variants of psychopathy relates to measurement. Measures other than the PCL-R, but which are nevertheless based substantially on Cleckley's conceptualization of psychopathy, may also be useful in exploring the relationship between psychopathic variants and violence. As Patrick and Zempolich (1998) noted, a consistent concern with research using the PCL-R to examine psychopathy and violence is one of criterion contamination. "[R]elationships between psychopathy and violence could emerge because clinical ratings of psychopathy are based on an extensive background review, including information pertaining to violence" (p. 332). Often investigators have controlled for this problem by using prorated PCL-R scores

[14] Although longitudinal data would be ideal, other less costly research designs also may be informative at this early stage. For example, we may first determine whether the "trophy is worth the game" by investigating the extent to which key risk factors are related to psychopaths' response to forms of treatment that ostensibly target particular etiological variables (e.g., childhood abuse), as explained later (see Section 4.2.2).

that exclude items related to criminality outcomes or by using statistical controls (Hart, 1998, p. 359; Skeem & Mulvey, 2001), and have often (but not always see Serin, 1996) found that psychopathy still predicts violence/criminality. Patrick and Zempolich (p. 333) encouraged the development of self-report measures of psychopathy that are "violence free" and which "...separately index the two separate factors of psychopathy." In this regard, the self-report psychopathy measures developed by Levenson, Kiehl, and Fitzpatrick (1995) and Lilienfeld and Andrews (1996) appear to hold the most promise. For example, Kruh et al. (2000) and Poythress, Edens, and Lilienfeld (1998) have found that the PPI (Lilienfeld & Andrews, 1996) is relatively strongly correlated with PCL-R Factor 1 (r=.54 and .45, respectively), Factor 2 (r=.40 and .65), and total scores (r=.54 and .62, respectively) in adult and adolescent offender populations. Lilienfeld et al. (1998) found a similar pattern of relations between the PPI and the screening version of the PCL in an undergraduate sample. Thus, the PPI, unlike the MMPI scales (see above, p. 7), may be helpful in future research on psychopathy variants because it is rooted in the Cleckleyan tradition, relatively "violence free," and fairly concordant with the PCL-R.

4.2. Potential clinical and legal implications

Until the research literature on the existence of potential variants of psychopathy is better developed, it is difficult to make strong conclusions regarding their practical implications. In this section, we draw upon existing theory and research to discuss *potential* implications of variants of psychopathy for violence risk assessment, management, and treatment. In essence, valid discrimination among variants with different pathways to, and patterns of, violence and aggressive behavior could refine decision-making about treatability, placement, management, and treatment.

4.2.1. Violence risk assessment and management

Consistent with our thesis that the identification of valid variants of psychopathy may reduce the heterogeneity of APD, so too may we find that, in terms of criminality, "...individuals who score relatively highly on both PCL-R factors are motivationally heterogeneous, with differing propensities toward defensive and appetitive aggression" (Patrick & Zempolich, 1998, p. 313). Research that utilizes psychopathic variants as independent variables may further our understanding of the relationships between APD and violence.

One issue ripe for exploration is the identification of a (relatively) nonviolent variant of psychopathy. In light of clinical and theoretical leads, some very preliminary empirical work suggests that such a group might emerge. Clinically, some psychopaths have been characterized as very charming and attractive individuals (i.e., the Charismatic Psychopath; Lykken, 1995, pp. 37–38) whose skills of verbal persuasion enable them to become very accomplished confidence artists. Totally callous and indifferent to the people from whom they extract money or other items of value, they manipulate confidences and aspirations rather than employ overtly aggressive (i.e., violence and intimidation) tactics. Along with their personal charm and charisma, such individuals are likely to display good interpersonal skills and little

or no social anxiety, and to be capable planners (rather than impulsive individuals), all of which suggest comparatively higher levels of core personality features (PCL-R Factor 1) than deviant lifestyle features (PCL-R Factor 2; see also Widom, 1977). Among the theoretical variants discussed previously, perhaps these individuals are most like Karpman's (1946) passive parasitic variant of primary psychopathy.[4]

The limited empirical work relevant here is only suggestive. First, in a study of prison inmates selected on the basis of their current conviction being a nonviolent offense, Haapasalo (1992) found that significantly more high than low PCL-R scorers had a history of prior conviction for fraud.[15] Second, in their work on psychopathy subtypes based on Cooke and Michie's (2001) three-factor solution of the PCL-R, Hervé et al. (2000) identified a group of "manipulative psychopaths" characterized by high scores on Deceitful Interpersonal Style and Deficient Affective Experiences, but low scores on Impulsive and Irresponsible Behavioral Style, and they speculated that this group might be the "talkers." Although this configuration of scores is consistent with what would be hypothesized, Hervé et al. presented no arrest or criminal history data to confirm this group as comparatively nonviolent. Third, Frick et al. (2001) identified groups of children who appeared to evidence callous and narcissistic traits who did not display high rates of antisocial behavior or aggression (compared to those who obtained elevated scores on all three factors). Similar findings were reported by Christian et al. (1997) in their clinical sample.

This appears to be an important direction for future exploration because of the increasing use of the psychopathy construct to inform clinical and legal decision-making. Either alone or as a cornerstone element of actuarial risk measures (e.g., Sexual Violence Risk-20 (SVR-20): Boer, Hart, Kropp, & Webster, 1997; MacArthur Iterative Classification Tree (ICT): Monahan et al., 2001; the Violence Risk Appraisal Guide (VRAG) and Sex Offender Risk Appraisal Guide (SoRAG): Quinsey, Harris, Rice, & Cormier, 1998; HCR-20: Webster, Douglas, Eaves, & Hart, 1997), the PCL-R and its progeny (PCL-SV) are used to undergird clinical opinions that contribute to hospital release decisions, sentencing and parole decisions, sexual predator commitments, and even death penalty deliberations (Edens, Buffington-Vollum, et al., in press; Edens, Petrila, et al., in press). Most commonly, it is the overall PCL-R elevation that drives the risk indices in these measures; thus, the capacity to distinguish high scoring individuals who are nevertheless at (relatively) low risk for violent recidivism could hold substantial clinical and legal implications.

Recent critiques of the reactive vs. instrumental aggression dichotomy notwithstanding (Bushman & Anderson, 2001), a second area ripe for further exploration are the qualitative differences in types of aggression by variants of psychopathy. In this regard, the conventional wisdom and extant research support the notion that psychopathic individuals are prone to instrumental (i.e., "cold," premeditated, predatory, and goal-directed) aggression whereas nonpsychopathic individuals commit reactive (i.e., "hot," impulsive, expressive, and

[15] However, the author did not report separately the relationship between PCL-R factor scores and convictions for fraud, and the high psychopathy group also had somewhat higher rates of prior conviction for assault, although this difference was not statistically significant.

catathymic) acts of violence. In an early study that employed an extreme groups design, Williamson, Hare, and Wong (1987) found that the apparent motive of material gain was significantly more prevalent in the offenses of psychopaths (45.2%) than nonpsychopaths (14.6%), whereas high levels of emotional arousal predominated more in the offenses of nonpsychopaths (31.7% vs. 2.4%). More recently, Cornell et al. (1996) found that offenders who had committed at least one instrumental act of violence obtained higher PCL-R scores than did those whose offending history included only acts of reactive violence. In a second study that employed the PCL-SV to rate defendants' psychopathy, these authors found that those classified as instrumentally violent had higher total, Part 1, and Part 2 scores than did defendants who were rated as reactively violent. Similarly, in a study of juvenile psychiatric patients, Stafford and Cornell (2001) found that PCL-R scores were somewhat more strongly related to instrumental (r=.47) than reactive (r=.36) aggression in a hospital ward.

Because of the differential association of a variety of violence risk factors with Factor 1 vs. Factor 2 of the PCL-R, we expect that analyses that examine the violent offending of variants of psychopathy will find these relationships to be more complex. Patrick and Zempolich (1998, p. 313) noted that "…aggression in the 'pure,' Cleckley psychopath is more likely to be appetitively oriented (i.e., 'instrumental' or 'proactive') than defensively motivated." The affective and interpersonal features associated with primary psychopathy include shallow emotions and the inability to form and sustain deep interpersonal attachments. Similarly, the deficit in responding to stimuli that signal fear or nonreward (i.e., low BIS activity) "…is tied specifically to the affective/interpersonal component of psychopathy" (Patrick & Zempolich, 1998, p. 312). Together, these findings suggest that in the face of potential loss in interpersonal relationships, primary psychopaths will be less prone to impulsive violent reactions accompanied by high levels of emotional expression (anger). Further, the overt narcissism hypothesized to characterize primary psychopaths has been associated with an extrinsic goal orientation (Kasser & Ryan, 1996) and may be associated with a higher level of stability in self-esteem (Baumeister et al., 1996; Edens, 1999; Salmivalli, 2001) that somewhat reduces reactivity to narcissistic insult.

In contrast, violence in variants of secondary psychopathy is likely to be disproportionately of the reactive ilk. Reactive aggression is often associated with anger, which is more strongly associated with the social deviance component of the PCL-R (Patrick, 1994). The loss (or potential loss) of reward (e.g., dissolution of a valued interpersonal relationship) or self-esteem is more likely to result in anger that provokes immediate violence in individuals whose characterological features include impulsivity, poor behavior controls, and (theoretically) a type of covert narcissism that is less stable in the face of challenge or insult and is associated with underlying feelings of insecurity and vulnerability (Wink, 1991; Wink & Donahue, 1997).

Although we have found no studies that examined qualitative differences in violence by psychopathic variants, a study by Hart, S. and Dempster, R. (1997), Hart, S.D. and Dempster, R.J. (1997) used partial correlations to examine the differential association between Factors 1 and 2 of the PCL-R with qualitative features of violent offenses. Factor 1, which is associated with conceptualizations of primary psychopathy, was positively associated with ratings of instrumentality, planning, and goal directedness, but negatively associated with intoxication and victim provocation. Factor 2, which figures more prominently in conceptualizations of

secondary psychopathy, was negatively associated with ratings of planning and acquaintanceship with the victim, and positively associated with intoxication.

Third, it may also be fruitful to examine psychopathic variants in terms of their differential risk for institutional violence. Blackburn (1987) cited two studies reporting that primary psychopaths show less aggressive and disruptive behavior in institutions than do secondary psychopaths. This work utilized measures of psychopathy that were not based on the Cleckley/Hare tradition emphasized here, although the hypothesis seems reasonable in light of the increased anxiety, sensitivity, and vulnerability to stress associated with PCL-R Factor 2, which figure more prominently in our conceptualizations of secondary psychopathy.

4.2.2. Treatment

Ultimately, it will be important to investigate whether psychopathic variants differ in their responsiveness to treatment, as posited by such theorists as Karpman, Porter, and Mealey. Although the extent to which variants of psychopathy are differentially responsive to treatments that target specific symptom constellations (e.g., trauma treatment for Porter's "dissociative" psychopath) is unknown, this issue is less important than determining whether variants differ in their basic responsiveness to traditional treatments.

Primary psychopaths are traditionally viewed as refractory to psychotherapy (e.g., Hare, 1993), in part because they tend to be unmotivated to alter their problematic behaviors and often lack insight into the nature and extent of their psychopathology. The untreatability of primary psychopathy appears to have been somewhat overestimated (Salekin, 2001; Wong, 2000), given the methodological limitations of early studies and some recent evidence that civil psychiatric and juvenile offender psychopaths who receive larger "doses" of treatment are less likely to exhibit subsequent violence than do those who receive less treatment (Gretton, McBride, Hare, & O'Shaughnessy, 2000; Skeem et al., 2001). Nevertheless, some authors have argued that treatment efforts directed toward primary psychopaths should focus not on altering their longstanding personality traits—which may be an unreasonable goal—but on providing them with constructive outlets (e.g., skydiving, hot-air ballooning, and other dangerous avocations) for their risk-taking propensities (Suedfeld & Landon, 1978; Wong & Hare, in press).

In contrast, secondary psychopaths may be more amenable to traditional forms of psychotherapy, as they tend to be capable of anxiety and guilt and may often be motivated to seek (and profit from) treatment. Although there are few data pertinent to this possibility, Woody, McLellan, Luborsky, and O'Brien (1985) found that whereas male opiate addicts with APD manifested little benefit from psychoptherapy, addicts with both APD and depression showed significant improvement across multiple problem areas (see Weiss, Davis, Hedlund, & Cho, 1983). Although these findings are based on patients with APD, they may indicate that antisocial individuals who are capable of depression and other negative emotions are responsive to traditional psychotherapy. If so, these findings may further imply that secondary psychopaths are more likely to benefit from traditional treatment than are primary psychopaths (see also Gertsley, Alterman, McLellan, & Woody, 1990).

In summary, seminal theories and empirical evidence suggest that there are primary and secondary variants of psychopathy that may be distinguished based on the nature of their

etiology and the extent of their anxiety, affective deficits, impulsivity, and traits of borderline and narcissitic personality disorders. Because a wide range of contexts call for assessments of individuals' treatability and violence risk, and practitioners are increasingly using the psychopathy construct to inform their decision-making about these issues, research on the existence and clinical significance of variants of psychopathy potentially bears substantial implications for legal and clinical standards of practice. If variants of psychopathy can be identified reliably and supported empirically, psychopathy may be transformed from a global label that provides little "point of reference for clinical intervention" (Blackburn, 1988) to a set of more specific constructs that improve our ability to understand, manage, and treat individuals who have largely been regarded as dangerous and untreatable.

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