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Psychopathic Personality: Bridging the Gap Between Scientific Evidence and Public Policy

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Summary

Few psychological concepts evoke simultaneously as much fascination and misunderstanding as psychopathic personality, or psychopathy. Typically, individuals with psychopathy are misconceived as fundamentally different from the rest of humanity and as inalterably dangerous. Popular portrayals of "psychopaths" are diverse and conflicting, ranging from uncommonly impulsive and violent criminal offenders to corporate figures who callously and skillfully manuever their way to the highest rungs of the social ladder.

Despite this diversity of perspectives, a single well-validated measure of psychopathy, the Psychopathy Checklist-Revised (PCL-R; Hare, 1991; 2003), has come to dominate clinical and legal practice over recent years. The items of the PCL-R cover two basic content domains—an interpersonal-affective domain that encompasses core traits such as callousness and manipulativeness and an antisocial domain that entails disinhibition and chronic antisocial behavior. In most Western countries, the PCL-R and its derivatives are routinely applied to inform legal decisions about criminal offenders that hinge upon issues of dangerousness and treatability. In fact, clinicians in many cases choose the PCL-R over other, purpose-built risk-assessment tools to inform their opinions about what sentence offenders should receive, whether they should be indefinitely incarcerated as a "dangerous offender" or "sexually violent predator," or whether they should be transferred from juvenile to adult court.

The PCL-R has played an extraordinarily generative role in research and practice over the past three decades—so much so, that concerns have been raised that the measure has become equated in many minds with the psychopathy construct itself (Skeem & Cooke 2010a). Equating a measure with a construct may impede scientific progress because it disregards the basic principle that measures always imperfectly operationalize constructs and that our understanding of a construct is ever-evolving (Cronbach & Meehl, 1955). In virtually any domain, the construct-validation process is an incremental one that entails shifts in conceptualization and measurement at successive points in the process of clarifying the nature and boundaries of a hypothetical entity.

Despite the predominance of the PCL-R measurement model in recent years, vigorous scientific debates have continued regarding what psychopathy is and what it is not. Should adaptive, positive-adjustment features (on one hand) and criminal and antisocial behaviors (on the other) be considered essential features of the construct? Are anxious and emotionally reactive people that are identified as psychopaths by the PCL-R and other measures truly psychopathic? More fundamentally, is psychopathy a unitary entity (i.e., a global syndrome with a discrete underlying cause), or is it rather a configuration of several distinguishable, but intersecting trait dimensions?

Although these and other controversies remain unresolved, theory and research on the PCL-R and alternative measures have begun to clarify the scope and boundaries of the psychopathy construct. In the current comprehensive review, we provide an integrative descriptive framework—the triarchic model—to help the reader make sense of differing conceptualizations. The essence of this model is that alternative perspectives on psychopathy emphasize, to varying degrees, three distinct observable (phenotypic) characteristics: boldness (or fearless dominance), meanness, and disinhibition. The triarchic framework is helpful for clarifying and reconciling seemingly disparate historical conceptions, modern operationalizations, and contemporary research programs on psychopathy.

Our review addresses what psychopathy is, whether variants or subtypes exist (i.e., primary and secondary, unsuccessful and successful), the sorts of causal influences that contribute to psychopathy, how early in development psychopathy can validly be identified, and how psychopathy relates to future criminal behavior and treatment outcomes. Despite

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controversies and nuances inherent in each of these topics, the current state of scientific knowledge bears clear implications for public policy. Policy domains range from whether psychopathic individuals should be held responsible for their criminal actions to whether employers should screen job candidates for tendencies toward psychopathy.

In many cases, the findings we review converge to challenge common assumptions that underpin modern applications of psychopathy measures and to call for cautions in their use. For example, contemporary measures of psychopathy, including the PCL-R, appear to evidence no special powers in predicting violence or other crime. Instead, they are about as predictive as purpose-built violence-risk-assessment tools, perhaps because they assess many of the same risk factors as those broader-band tools. Specifically, the PCL-R and other psychopathy measures derive most of their predictive utility from their "Factor 2" assessment of antisocial and disinhibitory tendencies; the "Factor 1" component of such measures, reflecting interpersonal and affective features more specific to psychopathy, play at best a small predictive role. Similarly, current measures of psychopathy do not appear to moderate the effects of treatment on violent and other criminal behavior. That is, an increasing number of studies suggest that psychopathic individuals are not uniquely "hopeless" cases who should be disqualified from treatment, but instead are general "high-risk" cases who need to be targeted for intensive treatment to maximize public safety.

Misunderstandings about the criminal propensities and treatability of individuals achieving high scores on measures like the PCL-R have been perpetuated by professionals who interpret such high scores in a stereotypic manner, without considering nuances or issues of heterogeneity. A key message of our review is that classical psychopathy, whether measured by the PCL-R or other measures, is not monolithic; instead, it represents a constellation of multiple traits that may include, in varying degrees, the phenotypic domains of boldness, meanness, and disinhibition. Measures such as the PCL-R that do not directly assess features of low anxiety, fearlessness, or boldness more broadly tend to identify heterogeneous subgroups of individuals as psychopathic. As a consequence, efforts to apply one-size-fits-all public policies to psychopathic individuals may be doomed to failure. In aggregrate, these conclusions may help to shed light on what psychopathy is, and what it is not, and to guide policy interventions directed toward improved public health and public safety.

Introduction

Diverse images of psychopathy

Most people *think* they know what a "psychopath" is—but few psychological concepts evoke simultaneously as much fascination and misunderstanding. For the public at large, psychopathy remains a poorly understood concept reflecting some combination of our childhood fears of the bogeyman, our adult fascination with human evil, and perhaps even our envy of people who appear to go through life unencumbered by feelings of guilt, anguish, and insecurity (see Edens, 2006; Lilienfeld & Arkowitz, 2007; Skeem & Lilienfeld, 2007 for examples of public misunderstanding). Even within scientific circles, a good deal of uncertainty persists about what psychopathy is and is not. Across lay and professional domains, popular portrayals of psychopaths are diverse; they overlap only partly, as illustrated by the following four characterizations.

The corporate psychopath. "Is your boss manipulative? Intimidating? Totally lacking in remorse? Yet superficially charming? Then you could be working with a workplace psychopath. The latest figures suggest one in ten managers are psychopaths . . ." (Heywood, 2005). Although grandiose, entitled, impulsive, and antisocial, individuals termed "snakes in suits" by psychologists Paul Babiak and Robert Hare (2006) are said to be highly capable of rising through the ranks to leadership positions, achieving wealth and fame in some cases. For example, Bernard Madoff—the New York stockbroker and investment analyst who was caught and convicted for swindling investors out of billions of dollars over many years in a massive Ponzi scheme—comes to mind as a prototype of the corporate psychopath.

The con artist. Scores of Hollywood films portray psychopaths as superficially charming and gifted con artists who dupe and deceive others with complete ease. Steven Spielberg's movie *Catch Me if You Can* (Shane, Parkes, MacDonald, & Spielberg, 2002), based on the real-life story of Frank Abagnale, Jr. (played by Leonardo di Caprio), is a quintessential example. Capitalizing on his charisma, verbal intelligence, and unusually mature physical appearance, Abagnale successfully passed himself off as a commercial pilot, a pediatrician, and a criminal prosecutor, all before he turned 19. A skilled check forger, he was eventually enlisted by the FBI to assist the government in catching other check forgers.

The serial killer. For members of the lay public, the term psychopath evokes images of such notorious serial killers as Theodore Bundy, Charles Manson, and John Wayne Gacy (Helfgott, 1997; see also Edens, Colwell, Desforges, & Fernandez, 2005). At a basic level, psychopathy seems to connote extreme and predatory violence (see "Common Misconceptions About Psychopathy" below). At a slightly more nuanced level, some of these individuals used their considerable intelligence, resilience, and social facility to lure unsuspecting victims to their deaths.

The chronic offender. Yet another image of psychopathy is that of the persistent criminal offender. A clinical case example is provided by "Robert," who has been in trouble with the law since age 10. As a child, he was seriously maltreated both sexually and physically, both at home and later in foster care. Although of average intelligence, he learned little in school and has never successfully held a job. He binges on alcohol and drugs whenever he can; endeavors to manipulate others

(but is not particularly adept at it); has never had a stable romantic relationship; and has been convicted of various types of crimes, both violent and nonviolent. He is anxious, easily upset and angered, speaks in a self-centered way about his situation, and appears indifferent to his victims' suffering. When paroled from prison, he is quickly rearrested, more often for trivial than for serious offenses.

Although these four characterizations have some elements in common, they also differ sharply from one another in important respects. Such divergences raise a troubling question about psychopathy: Exactly what is this hydra-headed condition? Many writers have described psychopaths as chameleon-like, but might the concept of psychopathy itself be the chameleon?

As we will discuss, many of the controversies surrounding psychopathy stem from fundamental disagreements about its basic definition, or operationalization. The scope of phenomena encompassed by the term *psychopathy* has varied dramatically over time, from virtually all forms of mental disorder (psychopathy as "diseased mind") to a distinctive disorder characterized by lack of anxiety; guiltlessness; charm; superficial social adeptness; dishonesty; and reckless, uninhibited behavior (Blackburn, 1998). Even contemporary conceptualizations of psychopathy contain puzzling contradictions. Psychopaths are often described as hostile, aggressive, and at times revenge driven (N. S. Gray, MacCulloch, Smith, Morris, & Snowden, 2003), yet they are also characterized as experiencing only superficial emotions (Karpman, 1961; McCord & McCord, 1964). They are impulsive and reckless, yet apparently capable of elaborate scheming and masterful manipulation (Hare, 1993). They can rise to high levels of achievement or status in society, attaining success in business and public life, yet present as criminals whose behavior is so poorly thought out and lacking in regard even for self-interest that they occupy bottom rungs of the social ladder.

Given these contrasting depictions, it is scant wonder that some experts have concluded that the concept of psychopathy, as commonly understood, is disturbingly problematic: a "mythical entity" and "a moral judgment masquerading as a clinical diagnosis" (Blackburn, 1988, p. 511), "almost synonymous with 'bad'" (Gunn, 1998, p. 34), "used by the media [to convey] an impression of danger, and implacable evil" (Lykken, 2006, p. 11). In the words of William and Joan McCord (McCord & McCord, 1964), two influential figures in the historic literature on psychopathy, "the proliferation of definitions, the tendency to expand the concept to include all deviant behavior, the discrepancies in judgment between different observers——these pitfalls in the history of the concept——are enough to make a systematic diagnostician weep" (p. 56).

Although we appreciate these understandable concerns, our more sanguine view is that some measure of order can be reached through a systematic review of the existing scientific literature and consideration of notable empirical and conceptual advances that have been made in recent years. This measure of order, in turn, provides valuable information for improving relevant public policy, particularly in legal and treatment domains.

Common misconceptions about psychopathy

Before proceeding to the main scientific review and its policy implications, we first dispel some prominent myths and misconceptions regarding psychopathy that recur in the popular-psychology domain and, to some degree, even in the professional literature. Although definitions of psychopathy are diverse and at times contradictory, there are several clear areas of consensus on what psychopathy is not.

Psychopathy is synonymous with violence. As noted earlier, when laypersons hear the term "psychopath," notorious serial killers commonly spring to mind (Edens, 2006). Moreover, in media descriptions, the words *psychopathic* and *killer* routinely go hand in hand. However, psychopathy can and does occur in the absence of official criminal convictions, and many psychopathic individuals have no histories of violence (Lilienfeld, 1994). Although psychopathy is clearly dissociable from violence, it should be noted that the dominant measure of psychopathy——namely, the Psychopathy Checklist-Revised (PCL-R; see below)——emphasizes features that are predictive, albeit modestly, of violence.

Psychopathy is synonymous with psychosis. Perhaps owing in part to the similarity between the words *psychopath* and *psychotic*, a common assumption in everyday life is that psychopaths are irrational, out of touch with reality, or both. For example, the news media have often used the term *psychopath* in conjunction with notorious criminals such as Charles Manson, David Berkowitz (the "Son of Sam" Killer), and John Hinckley, Jr. (the attempted assassin of U.S. president Ronald Reagan), all of whom showed indications of pronounced psychotic thinking (Lilienfeld & Arkowitz, 2007). Most recently, the term *psychopath* was applied by at least one political commentator to Jared Lee Loughner, an individual with symptoms suggestive of psychosis (e.g., paranoia, poorly formed thinking) who allegedly shot and killed six people and wounded 14 others (including U.S. Representative Gabrielle Giffords) in Tucson, Arizona.

Although psychopathic traits can occur in some cases in conjunction with psychotic symptoms (e.g., Raine & Venables, 1987), people with psychopathy alone generally look quite different than those presenting with psychosis only. In contrast with psychotic patients, psychopathic individuals are generally rational, free of delusions, and well oriented to their surroundings (Cleckley, 1941, 1988), and those who commit crimes are almost always aware that they have done wrong in the eyes of the law, despite their apparent inability to appreciate the moral gravity of their misbehavior (Litton, 2008).

Psychopathy is synonymous with antisocial personality disorder (ASPD). ASPD is an official diagnosis marked by a

chronic history of antisocial, criminal, and sometimes violent behavior dating back to childhood or early adolescence. The third and fourth editions of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-III and DSM-IV; APA, 1980, 2000) imply that psychopathy can be equated with the diagnosis of ASPD. However, as we discuss below (see "What is Psychopathy?"), most well-validated measures of psychopathy correlate to a lesser degree with ASPD than would be expected of measures of the same construct (Hare, 1983, 2003). The difference arises largely because measures of psychopathy include personality traits inferable from behavior, whereas measures of ASPD more exclusively emphasize antisocial, criminal, and (to a lesser extent) violent behavior.

Because no single personality type or disposition is specific to chronic criminal behavior, the current DSM criteria for ASPD may misleadingly classify several different subgroups of individuals within one overarching label, thereby confounding efforts to identify a coherent etiology and impeding intervention and risk-prediction efforts (N. G. Poythress, Edens, et al., 2010; see also Lykken, 1995). As we will see in the next section, this issue of classification heterogeneity is reduced, but certainly not eliminated, by using measures developed to index psychopathy as opposed to ASPD.

Psychopathic individuals are born, not made. Contemporary understanding of the pervasive interplay of genetic and environmental influences in determining behavioral outcomes of various kinds argues against the likelihood that any psychiatric condition, including psychopathy, is entirely "born" or "made." Rather, based on what is known about related conditions, it seems likely that (a) psychopathy has multiple etiologies and (b) constitutional influences will both shape and be shaped by environmental influences (Waldman & Rhee, 2006).

Psychopathy is inalterable. A related belief—that psychopathic individuals "cannot change their spots"— also lacks convincing scientific support. This belief is so entrenched that it has received little research attention to date, but some recent empirical work has emerged to suggest that personality traits in general, and psychopathic traits more specifically, undergo change across major developmental transitions (see "To What Extent Does Psychopathy Apply to Children?" below) and that youth and adults with high scores on measures of psychopathy can show improved behavior after intensive treatment (see below, "Do Psychopathic People Respond to Treatment?").

Overview of monograph

Having reviewed diverse general images of what psychopathy is and dispelled common misconceptions to outline what psychopathy is not, we now turn to the substantive review of contemporary research on psychopathic personality. We begin by reviewing leading conceptualizations and measures of psychopathy. Although there are unresolved diagnostic controversies, we propose that varieties of what scholars call "psychopathy" may actually represent different confluences or configurations of particular personality dimensions. When viewed from this perspective, disagreement about the boundaries of psychopathy reflects differing emphases on a few underlying dimensions. After defining these basic dimensions of psychopathy and the extent to which they apply across different populations, we then consider what psychological science has taught us about what causes psychopathy, whether there are different variants of psychopathy (i.e., primary and secondary, successful and unsuccessful), and how early in development psychopathy can validly be identified. Next, we review more applied research on the nature of the link between psychopathy and violence and other criminal behavior and on the extent to which psychopathic individuals respond to treatment efforts. We highlight the results of practitioner surveys and legal case reviews, which indicate that (particularly in North America) measures of psychopathy are often used in juvenile- and criminal-justice settings to inform legal decisions that turn upon issues of future dangerousness and amenability to treatment.

In the second part of the monograph, we articulate how psychological science on psychopathy can inform practice and policy in justice and intervention, prevention, and employment contexts. This includes thorny issues related to criminal responsibility, risk assessment, correctional intervention, and pre-employment screening. As we will discuss, although some important policy issues cannot be resolved by contemporary psychological science, a number of recent advances in scientific understanding can be applied to correct or improve some current misapplications of the term *psychopathy*. These improvements have direct implications for public health and safety.

Research Review

What is psychopathy?

As we suggested in our introduction, the definition of psychopathy itself——what it is, what is is not——is one of the most fundamental questions for psychological science. In this section, we outline major historical perspectives on psychopathy and then present modern measures that are used in most research, highlighting ongoing contemporary controversies about the appropriate scope of this construct's definition.

As the reader will see, recent understanding of what psychopathy is and is not largely parallels that of research on other psychological constructs. In the process of validating constructs that cannot be observed, operationalism——the use of measures to study a construct—is necessary. Because all measures of psychological constructs are fallible, the validation process is an incremental one that often includes some missteps in the process of clarifying the nature and boundaries of an entity that is by nature hypothetical (Cronbach & Meehl, 1955). Global, imprecise, and conflated measurement characterizes the early development of instruments aimed at assessing most psychological constructs. For example, early measures of depression

(see Watson, 2009) and psychosis proneness (see Grove, 1982) measured a variety of dimensions to index these constructs. Over time, these measures were subjected to statistical analyses that revealed information on a few central dimensions that these "global syndromes" comprised. In turn, most of those early scales were replaced by newer measures that more adequately captured these central dimensions. Still, those early measures played a pivotal role in refining operationalizations and advancing understanding of the target constructs.

The same is true of psychopathy. In this case, however, a single measure—the PCL-R (Hare, 1991, 2003)—has played such a generative role that some are concerned that the measure has become essentially equated with psychopathy itself (Skeem & Cooke, 2010a). However, a PCL-R score is not equivalent to psychopathy any more than an intelligence-test score is equivalent to intelligence itself. Although operationalism is necessary to understand a construct, pseudo-operationalism (Meehl, 1978)—the conflation of measures with constructs——impedes scientific progress because it disregards the basic principle that our understanding of a construct is always evolving (Westen & Rosenthal, 2005).

Like all other constructs, psychopathy is not reducible to a single indicator and is best served by multiple and incrementally evolving measures. As discussed later in this section, research on differing measures of psychopathy is beginning to clarify the scope and boundaries of this construct. At the conclusion of this section, we describe an integrative model that helps to make sense of divergent conceptualizations and offers a framework for understanding the remainder of the research review and its implications for public policy. Although there is a need for caution in the application of psychopathy measures given that many scientific issues remain unresolved, as will be shown, the field is nonetheless moving toward a clearer understanding of the major elements of the psychopathy construct.

Early and divergent origins. Modern Western conceptualizations of psychopathy trace their origins to the early 1800s, with the work of Pinel (1962; *manie sans delire*, or "mania without delirium") and Pritchard (1835; "moral insanity"). However, the term *psychopathic* was introduced only toward the end of the 19th century, by the German psychiatrist J. L. Koch (1891), who—in sharp contrast with current usage—applied it to a diverse array of chronic conditions including neuroses, mental retardation, and various character disorders. Early descriptions of what came to be known as psychopathy were diverse, variously emphasizing intact mental faculties coupled with reckless, explosive, behavior (Prichard, 1835); charm, self-assurance, social dominance, attention seeking, persuasiveness, and shallow affectivity (Kraepelin, 1904, 1915; Schneider, 1950/1958); and brutality, emotional coldness, and callous exploitation of others (Pinel, 1806/1962; Schneider, 1950/1958). These disparate early conceptualizations foreshadowed——and perhaps fueled—modern controversies about the definition of psychopathy.

Beginning with Koch's application of the term to a broad array of chronic conditions (e.g., mental retardation, character disorders), "psychopathic" referred to early-emerging disorders assumed to have an underlying constitutional or genetic basis. Subsequently, the term *sociopathy*, conveying the idea of antisocial behavior as largely social in origin, was advanced by Birnbaum (1909) as a challenge to the idea that such disorders were fundamentally genetic. Notwithstanding recent empirical efforts to address this question (see "What Causes Psychopathy?" below), the relative contributions of constitutional and environmental influences to psychopathy remain uncertain.

Modern conceptions of psychopathy derive most directly from American psychiatrist Hervey Cleckley's classic monograph, *The Mask of Sanity* (1976). Indeed, perhaps no major psychological disorder is so clearly identified as originating from the work of one scholar as is psychopathy. Cleckley drew on extensive experience with psychiatric patients at Georgia's University Hospital to clarify and circumscribe the disorder. The "mask" in the title of Cleckley's book refers to the tendency of psychopaths to present initially as confident, personable, and well adjusted in comparison with most psychiatric patients but to reveal severe underlying pathology through their actions and attitudes over time. Cleckley formulated 16 criteria to help operationalize the disorder (see Table 1).

Notably, Cleckley did not characterize psychopaths as explosively violent, dangerous, predatory, or cruel. Instead, the harm they caused others was a secondary consequence of their shallow and feckless nature; although "not deeply vicious," the psychopath "carries disaster lightly in each hand" (1955, p. 33). Cleckley's richly descriptive work inspired both early research and the DSM-II diagnosis of "Personality Disorder, Antisocial Type" (APA, 1968). Nevertheless, like other descriptions of personality disorders in DSM-II, the characterization of individuals meeting this diagnosis (e.g., as "grossly selfish, callous, irresponsible, impulsive and unable to feel guilt . . ."; APA, 1968, p. 43) was vague and required considerable clinical judgment, creating concerns about inter-rater reliability.

The modern association of psychopathy with serious and repetitive law breaking owes less to Cleckley than to McCord and McCord (1964) and Robins (1966, 1978), influential contemporaries of Cleckley who worked with criminal offenders rather than psychiatric patients. The McCords' conception of psychopathy is of a more disturbed, maladjusted personality, with more prominent features of hostile alienation from others, aggression, callousness, impulsivity, and parasitic exploitation, but sharing with Cleckley's conception a presentation of no more than fleeting, surface emotions along with behavior lacking in apparent motivation. Although McCord and McCord viewed frequent, serious, and diverse criminal behavior as common among individuals exhibiting these clinical features, they did not consider such behavior inevitable (Hervé, 2007).

Sociologist Lee Robins' work on the development of objective behavioral indicators of psychopathy—drawing on findings of adult follow-up studies of conduct-disordered children—served as the cornerstone for the DSM-III conception of ASPD (APA, 1980). As a remedy for the subjectivity of the

Table 1. Cleckley's (1976) 16 Diagnostic Criteria For Psychopathy: Categorized By Patrick (2006, p. 612)

Item category	No.	Description
Positive adjustment	1.	Superficial charm and good "intelligence"
	2.	Absence of delusions and other signs of irrational thinking
	3.	Absence of "nervousness" or psychoneurotic manifestations
	14.	Suicide rarely carried out
Behavioral deviance	7.	Inadequately motivated antisocial behavior
	8.	Poor judgment and failure to learn by experience
	4.	Unreliability
	13.	Fantastic and uninviting behavior with drink and sometimes without
	15.	Sex life impersonal, trivial, and poorly integrated
	16.	Failure to follow any life plan
Emotional-interpersonal deficits	5.	Untruthfulness and insincerity
	6.	Lack of remorse or shame
	10.	General poverty in major affective reactions
	9.	Pathologic egocentricity and incapacity for love
	11.	Specific loss of insight
	12.	Unresponsiveness in general interpersonal relations

DSM-II ASPD criteria, the criteria in DSM-III emphasized overt and easily measured antisocial behavior during childhood—such as truanting, aggression, and lying—that persisted into adulthood (e.g., in criminal acts, deception, and irresponsibility). This emphasis was carried over into DSM-IV (APA, 2000).

Although the use of explicit behavioral criteria achieved the goal of reliability, many have argued that validity was sacrificed in the process (Lilienfeld, 1994; Lykken, 1995). What had previously been regarded as a constellation of distinct dispositional features (psychopathy) instead became codified as chronic criminal or other antisocial behavior. Most people who meet DSM-III or IV diagnostic criteria for ASPD fail to exhibit the distinct personality features of psychopathy emphasized by Cleckley (e.g., superficial charm, deficient anxiety, lack of remorse and empathy, and general poverty of affect) or by others, such as the McCords (e.g., persistent cruelty, ruthlessness, emotional coldness).

Proposed revisions for the upcoming fifth edition of the DSM (DSM-V; see APA, 2011) may help to address this omission, at least in some respects. It is important to understand that these revisions focus on the diagnostic criteria for ASPD, not on psychopathy per se. As we will make abundantly clear, there is no consensus about the symptom criteria for psychopathy, and no psychiatric or psychological organization has sanctioned a diagnosis of "psychopathy" itself. Still, three suggested changes for the DSM-V diagnosis of ASPD are particularly noteworthy: (a) Child and adult behavioral symptoms would no longer be considered together in diagnosing ASPD; (b) a "callous-unemotional" variant of conduct disorder would be included (see section on development of psychopathy); and (c) an "antisocial/dyssocial" personality disorder, reflecting high levels of "antagonism" and "disinhibition," would replace the current ASPD diagnosis at the adult level. It remains unclear at this time whether these proposed changes will be fully adopted in the DSM-V, as they represent a significant departure from the DSM's diagnosis of ASPD since 1980.

Modern operationalizations. These historical definitions bear some relation to leading, modern measures of psychopathy, which grossly consist of clinician rating scales and self-report scales.

Clinician rating scales: The Psychopathy Checklist-Revised (PCL-R) and its derivatives. In the late 1970s, Canadian psychologist Robert Hare sought to systematize the process of assessing psychopathy in incarcerated criminal samples by developing a criterion-based interview protocol, the 22-item Psychopathy Checklist (PCL; Hare, 1980). This instrument was revised and published as the 20-item PCL-R (Hare, 1991). Taking a different tack from the DSM-III and its progeny, which placed almost exclusive emphasis on overt criminal and other antisocial behavior, Hare demonstrated that it was also possible to score *personality* characteristics reliably. The PCL-R has been "fine-tuned" (Hare, 2003, p. 198) since it was made available to researchers in 1985, and it is now the most widely used and extensively validated measure of psychopathy. The test manual for the PCL-R provides a detailed narrative description for each item as a basis for scoring, with a rating of 0 called for if the item does not apply at all to the offender, 1 if there is a partial match or mixed information, and 2 if the item description provides a reasonably good match to the offender. Ideally, ratings are made on the basis of a face-to-face interview with the offender in conjunction with collateral information (e.g., from institutional files) based on lifetime behavior; however, ratings can be completed using file information alone. Guidelines for the PCL-R caution that users should be qualified clinicians with specific training, and the guidelines include admonitions against basing ratings on too little information. Completion of a PCL-R can, depending on the volume of information to gather and review, easily take up to 3 hours (Hart, Cox, & Hare, 1995).

Although Hare's starting point in developing items for the PCL-R was Cleckley's criteria, he drew on other sources, including his own experience (Hare & Neumann, 2008), in assembling a candidate pool of items. He then used such standard psychometric methods as corrected item–total correlations to refine the item set. Item–total correlations evaluate the strength of the statistical relationship between an item and the

Table 2. Psychopathy Checklist–Revised (PCL-R) Factors, Facets, and Items

Factor 1: interpersonal-affective scale		Factor 2: antisocial scale	
Facet 1 Interpersonal	Facet 2 Affective	Facet 3 Lifestyle	Facet 4 Antisocial
Glibness/superficiality charm	Lack of remorse or guilt	Need for stimulation/ proneness to boredom	Poor behavioral controls
Grandiose sense of self-worth	Shallow affect	Parasitic lifestyle	Early behavioral problems
Pathological lying	Callousness/lack of empathy	Lack of realistic long-term goals	Juvenile delinquency
Conning/manipulative	Failure to accept responsibility for own actions	Impulsivity	Revocation of conditional release
		Irresponsibility	Criminal versatility

From Hare (2003)

Note. Two PCL-R items are not included in this factor structure: namely Promiscuous sexual behavior, Many short-term marital relationships.

total score from the scale's set of items. Typically, items with low item–total correlations are discarded. Thus, in the test-development process, Hare eliminated Cleckley's (1941, 1988) positive-adjustment features of psychopathy (see Table 2; see also "Unresolved Controversies" below), which tend not to relate highly to the other features of the condition. High overall scores on the PCL-R show positive associations with measures of impulsivity and aggression, Machiavellianism (a personality trait marked by ruthlessly pragmatic and cynical attitudes), and persistent criminal behavior and negative relations with measures of empathy and affiliation (Hare, 1991, 2003). Probably because the PCL-R was developed with and for criminal samples, and because positive-adjustment indicators were omitted as criteria, this pattern of external correlates appears more in line with McCord and McCord's (1964) conception of criminal psychopathy, which emphasizes cruelty and impulsive-aggressive behavior, than with Cleckley's portrayal of psychopathy as a masked disturbance blending behavioral dyscontrol with emotional stability and social efficacy.

Despite being developed to index psychopathy as a unitary construct (Hare & Neumann, 2008), the PCL-R contains distinctive subscales or item subsets, conventionally referred to as "factors" in the psychopathy literature (Harpur, Hare, & Hakstian, 1989; Hare et al., 1990): an interpersonal-affective factor (Factor 1; further divisible into interpersonal and affective facets; cf., Cooke & Michie, 2001; Hare, 2003), and an antisocial factor (Factor 2; further divisible into impulsive-irresponsible lifestyle and antisocial behavior facets; cf., Hare, 2003; see Table 2[1]). The two factors and their constituent facets exhibit moderate correlations with one another. The interpersonal-affective factor is associated with narcissism and low empathy (Hare, 2003). Especially after controlling for its overlap with the antisocial factor (typically with a correlation coefficient, or *r* of .5 in most studies; given that *r* ranges from 0 to +/–1, an *r* of .5 indicates a moderate correlation) the PCL-R interpersonal-affective factor is also associated with indices of social dominance (e.g., Verona, Patrick, & Joiner, 2001) and inversely associated with measures of negative emotionality (i.e., fear, distress, depression; Hicks & Patrick, 2006). In contrast, the antisocial factor is associated mainly with maladaptive characteristics and behaviors, including impulsivity; general sensation seeking; alcohol and drug problems; early and persistent criminal behavior; and aggression, particularly reactive aggression (i.e., aggression that entails an angry response to perceived provocation; Hare, 2003; Patrick, Hicks, Krueger, & Lang, 2005; Patrick & Zempolich, 1998; Porter & Woodworth, 2006).

The briefer Psychopathy Checklist: Screening Version (PCL:SV; Hart et al., 1995) was initially developed both as a labor-saving screening instrument for the same forensic settings as the PCL-R and to meet the needs of settings in which clients do not necessarily have criminal records (e.g., civil psychiatric patients). The procedure for rating the PCL:SV is similar to that for the PCL-R, as is its two-factor scale structure. In addition, PCL:SV scores are very strongly correlated with PCL-R scores (weighted $r = .8$; Hart et al., 1995), and evidence suggests that the two measures' patterns of external correlates are highly similar (Hare & Neumann, 2006; Hart et al., 1995). For these reasons, we refer to these instruments collectively at times as the PCL-R/SV.

The PCL-R/SV manuals specify suggested cutoff scores when the instruments are used to make categorical "diagnoses" (psychopath/nonpsychopath). For the PCL-R, 30 out of a maximum score of 40 is recommended as the cutoff for a diagnosis of psychopathy (Hare, 2003), and for the PCL:SV the corresponding score is 18 (Hart et al., 1995). However, for research purposes, lower cutoff scores are sometimes used (e.g., PCL-R score of 25).

Although these PCL-R/SV cutoff scores are sometimes applied as though they definitively indicate when an individual is or is not a "psychopath," this practice rests on little or no research support. First, as suggested earlier, there is no consensus definition of symptom criteria for a formal diagnosis of psychopathy. Second, the weight of evidence using taxonometric techniques (e.g., Meehl & Golden, 1982) suggests that psychopathy is a dimensional trait or configuration of traits rather than a discrete category (or taxon) that exists in nature

rather than merely in the minds of clinicians (Edens, Marcus, Lilienfeld, & Poythress, 2006; Marcus, John, & Edens, 2004; Murrie et al., 2007; cf., Harris, Rice, & Quinsey, 1994; Vasey, Kotov, Frick, & Loney, 2005). Although studies addressing this issue to date have focused on leading interview-based and self-report measures of psychopathy—leaving open the possibility that analysis of emotional, cognitive, or other laboratory measures may yet reveal a taxon—the few studies that purportedly have identified psychopathic taxons suffer from salient methodological problems (for a review, see Walters, Marcus, Edens, Knight, & Sanford, 2011). That is, despite the routine use of PCL-R cutoff scores for diagnosing psychopathy, available data indicate that psychopathic individuals differ from other people in degree rather than in kind. Such individuals are not psychopaths per se, but instead are relatively "psychopathic" (Edens et al., 2006).

These distinctions are not merely a matter of academic debate—indeed, they have direct policy implications. For example, proponents of the taxonomic view leverage that perspective to support their belief that treatment cannot reduce violence or other criminal behavior for psychopathic individuals: "psychopaths are fundamentally different from other offenders and there is nothing 'wrong' with them . . . that therapy can 'fix'" (Harris & Rice, 2006, p.568). As we will show later, the weight of available evidence on the treatment of psychopathy suggests otherwise (see "Do Psychopathic People Respond to Treatment?" below).

Still, such vital distinctions rarely are observed in practice, where the PCL-R and closely affiliated instruments currently dominate the field. Although a number of self-report measures of psychopathy have been developed over the years (see next section), no major external-rating instruments for assessing psychopathy in adults have emerged as alternatives to the PCL-R. Arguably, this is an unusual circumstance for a psychological construct of such theoretical and practical importance. For example, it would strike readers as odd if only a single performance- or interview-based measure existed for assessing intelligence, extraversion, or clinical depression. As a consequence of the PCL-R's dominance in the field, there is a substantial body of research on this specific instrument and its descendants, including the PCL:SV, the PCL:Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) and various other inventories for assessing psychopathy in children and adolescents derived directly from the PCL-R (see "To What Extent Does Psychopathy Apply to Children?" below). Consequently, we know a great deal "about the psychopathic offender as defined by the PCL-R" (MacDonald & Iacono, 2006, p. 383) but not necessarily about the nature and boundaries of the psychopathy *construct*.

The PCL-R is popular not merely in the academic and clinical world. It has recently acquired a kind of cult-like popular-psychology status with the publication of journalist Jon Ronson's (2011b) bestselling book, *The Psychopath Test*, which adopts the PCL-R as its core organizing framework. In discussing the book, Ronson (2011a) wrote that "The Hare Checklist is brilliant at anatomizing the barely noticeable character traits evident in psychopaths" (p. 232).

Over the past quarter century, the PCL-R has firmly and justifiably established itself in the history of research on personality disorder and in the armamentarium of forensic practitioners. It has facilitated comparison of results across studies and clarified communication among practitioners and researchers. In this respect, it has undeniably advanced practice and research on psychopathy. However, as noted earlier, concerns have been expressed that the measure has, effectively, usurped the construct (Skeem & Cooke, 2010a) and contributed to mono-operation bias—that is, the error of operationalizing a construct in only one way (Cook & Campbell, 1979). Although the PCL-R is clearly the most extensively validated measure of psychopathy, referring to it as "gold standard," as some authors in the psychopathy literature have taken to doing (e.g., Fulero, 1995; Vitacco, Neumann, & Jackson, 2005; Westen & Weinberger, 2004), is highly problematic. Because all measures of constructs are by definition fallible (Cronbach & Meehl, 1955), inferences about psychopathy solely on the basis of one measure and its descendants may well be incomplete or misleading. Fortunately, alternative measures of psychopathy have also been intensively studied in recent years.

Self-report scales: The Psychopathic Personality Inventory (PPI). Psychopathy in noncriminal, nonpsychiatric samples has most commonly been measured using self-report scales. Ostensibly relevant subscales of traditional personality inventories (e.g., the Minnesota Multiphasic Personality Inventory Psychopathic Deviate scale, the California Psychological Inventory Socialization scale, the Millon Clinical Multiaxial Inventory Antisocial Personality Disorder scale) actually assess tendencies toward nonspecific antisocial and criminal behaviors and affiliated traits and show weak or negligible associations with the core affective and interpersonal features of psychopathy (Harpur et al., 1989). However, newer self-report measures including the PPI (Lilienfeld & Andrews, 1996) and a revised version (PPI-R; Lilienfeld & Widows, 2005), Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), and Hare Self-Report Psychopathy Scale (HSRP; Paulhus, Hemphill, & Hare, in press; Williams, Paulhus, & Hare, 2007) provide coverage of affective-interpersonal as well as lifestyle-antisocial features. Of these measures, the PPI/PPI-R has become the most used in contemporary adult research.

In contrast to the PCL-R, the PPI was developed to comprehensively index trait dispositions represented in Cleckley's model and related personality-based conceptualizations of psychopathy in nonclinical (e.g., undergraduate) samples. Originally comprising 187 items (cf., Lilienfeld & Andrews, 1996), the revised version (i.e., PPI-R; Lilienfeld & Widows, 2005) comprises 154 items organized into eight unidimensional subscales that do not contain explicitly antisocial or criminal items (see Table 3). Unlike the PCL-R, its initial construction was not predicated on the idea of psychopathy as a superordinate construct. Factor-analytic research (e.g.,

Table 3. PPI-R Factors and Associated Content Scales

PPI-I	PPI-II	
Fearless dominance	Impulsive antisociality	Coldheartedness
Social influence	Machiavellian egocentricity	Coldheartedness
Fearlessness	Rebellious nonconformity	
Stress immunity	Blame externalization	
	Carefree nonplanfulness	

(from Lilienfeld & Widows, 2005; factor labels from Benning, Patrick, Hicks, Blonigen, & Krueger, 2003)

Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; S. R. Ross, Benning, Patrick, Thompson, & Thurston, 2009) has shown that 7 of the 8 PPI subscales cohere around two higher-order factors: PPI-I (fearless dominance; Benning, Patrick, Blonigen, Hicks, & Iacono, 2005) and PPI-II (impulsive antisociality; Benning, Patrick, Blonigen, et al., 2005; or self-centered impulsivity; Lilienfeld & Widows, 2005).[2] In contrast with the moderately interrelated factors of the PCL-R, these two higher-order PPI factors are typically uncorrelated (Benning et al., 2003). The remaining PPI subscale, coldheartedness, is in turn largely independent of these two factors. Scores on the PPI-I are associated with emotional stability and social efficacy (e.g., higher well-being, higher interpersonal assertiveness, lower anxiousness and depression), higher narcissism and thrill-seeking behavior, and reduced empathy (Benning, Patrick, Blonigen, et al., 2005; Benning, Patrick, Salekin, & Leistico, 2005; Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005; Douglas et al., 2008; Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006; S. R. Ross et al., 2009). As with the antisocial scale or Factor 2 of the PCL-R, scores on PPI-II are more indicative of maladaptive dispositional and behavioral tendencies—including impulsivity and aggressiveness, child and adult antisocial behavior, substance problems, dysphoria and distress (negative affect), and suicidal ideation.

To summarize, in contrast to the PCL-R/SV, the PPI-R (a) is a self-report measure that was (b) developed originally with undergraduate students rather than criminals and therefore (c) contains no items explicitly referring to criminal or other antisocial behavior but (d) does include subscales that capture Cleckley's positive-adjustment-related features (stress immunity, social potency) and (e) indexes psychopathy in terms of higher-order factors that are clearly differentiated rather than moderately interrelated. Given these points of divergence, scores on the PPI would not be expected to correlate more than moderately with scores on the PCL-R (cf., Blonigen et al., 2010). Nonetheless, the PPI as a whole and its distinctive factors do show relations with psychopathy-relevant criterion measures of various types that parallel those for the PCL-R and its factors (N. G. Poythress, Lilienfeld, et al., 2010). Thus, the PPI measurement model provides a potentially useful alternative to the PCL-R for assessing psychopathy through self-report in populations of differing types, including community participants and nonforensic patients as well as incarcerated offenders and forensic patients.

Unresolved controversies in defining psychopathy. There is a striking degree of continuing debate among contemporary scholars about the nature and scope of the psychopathy construct. Unresolved controversies include (a) what clinical features are, and are not, intrinsic to psychopathy (i.e., essential or core elements of psychopathy as opposed to concomitants or sequelae); and (b) whether psychopathy should be viewed as a single homogeneous entity or as encompassing subgroups of individuals with distinguishable clinical characteristics. These two areas of debate—feature centered and person centered—overlap; as a broader array of features is used to define psychopathy, a more heterogeneous array of individuals with different feature combinations will qualify as psychopathic. Because scholars may apply the term "psychopathy" to different feature constellations and label differing sets of individuals as "psychopathic," we highlight key unresolved issues at this point to provide a frame of reference for material that follows and for integrating differing perspectives.

Do adaptive features belong in the definition? Cleckley's (1976) Mask of Sanity suggests that the essence of psychopathy entails a salient paradox. Specifically, psychopaths as described by Cleckley are marked by an outward appearance of positive adjustment—including social facility and immunity to stress. However, these features occur hand in hand with persistent maladaptive behavior (see Table 1). People with this paradoxical configuration of tendencies are said to occupy niches at various levels of society—from successful politicians, business leaders, and lawyers to chronic criminals and shiftless n'er-do-wells.

Indeed, Cleckley (1941, 1988) referred explicitly to psychopaths' characteristic "free[dom] from social or emotional impediments" (p. 338), tendency to "make a distinctly positive impression when he is first encountered" (p. 339), "relatively immunity to such anxiety and worry as to be judged normal or appropriate in disturbing situations" (pp. 339–340), and "extraordinary poise" (p. 340) in social situations. These and other quotations (see Lilienfeld et al., in press) offer ample evidence that Cleckley viewed such adaptive features (encapsulated by the construct of boldness; see below) as one key component of psychopathy. Other prominent scholars have made similar observations. For example, McCord and McCord (1964) wrote that "the psychopath is almost the antithesis of neurosis" (p. 47); Lykken (1982) wrote that individuals predisposed to psychopathy are marked by "boldness, aggressiveness, and charm" (p. 28); and Hare (1993) wrote that psychopaths "can be very effective at presenting themselves well and can be very likeable and charming" (pp. 34–35). More recently, Babiak and Hare (2006) wrote that

> several abilities—skills, actually—make it difficult to see psychopaths for who they are. First, they are motivated to, and have a talent for, "reading people" and for sizing them up quickly . . . many psychopaths come

> across as having excellent oral communication skills . . . their insight into the psyche of others combined with a superficial—but convincing—verbal fluency allows them to change their personas skillfully as it suits the situation and their game plan. . . . Like chameleons, psychopaths can hide who they really are and mask their true intentions from their victims for extended periods. The psychopath is a near-perfect invisible human predator. (pp. 37–39)

In notable contrast with the foregoing, Hare's PCL-R/SV largely omits positive-adjustment indicators (see Patrick, 2006). Indeed, Hare and Neumann (2010) regarded such items as "of doubtful relevance to the psychopathy construct" (p. 450). Their perspective appears to be that adaptive psychological features—or those described by Cleckley, at least—represent concomitants rather than core features of psychopathy, affiliated in some cases with, but not essential to, the disorder. In contrast, other writers (e.g., Fowles & Dindo, 2009; Lilienfeld & Widows, 2005; Lykken, 1995; Patrick, 2006) identify characteristics such as fearlessness, stress immunity, and social facility as essential elements of psychopathy. Thus, disagreement remains as to whether positive adjustment features are essential to the disorder.

Are anxious, emotionally reactive people fundamentally psychopathic? Excluding adaptive features from the definition of psychopathy should not necessarily mean that those diagnosed have the opposite characteristics. However, some scholars have suggested that by not requiring the inclusion of positive-adjustment features in the definition of psychopathy, we effectively label as psychopathic large numbers of psychologically maladjusted individuals (Schmitt & Newman, 1999)—in particular, people prone to psychological distress and negative emotionality, including anxiety, dysphoria, hostility, and irritability. This may be the case particularly in offender populations in which psychopathy is most frequently studied; negative emotionality, entailing proneness to distress and lack of resilience, is an early risk factor for chronic adult offending, including violence (Moffitt, Caspi, Harrington, & Milne, 2002), and mental illnesses of many kinds are common in the criminal justice system (Steadman, Osher, Robbins, Case, & Samuels, 2009).

As noted earlier, the PCL-R and PCL:SV largely exclude adaptive-adjustment features. Some scholars point out that total scores on these instruments exhibit weak correlations, typically in a positive rather than negative direction, with measures of anxiety or distress (cf., Hare, 2003; Schmitt & Newman, 1999). However, these overall correlations conceal important within-sample variation. As described later, a sizable proportion of offenders who obtain very high scores on the PCL-R manifest substantial negative emotionality and have distinctive historical, personality, and performance profiles, whereas other high PCL-R scorers exhibit a more classic presentation entailing low anxiety. Should the former subgroup be considered "secondary psychopaths," given that they manifest some features of psychopathy in conjunction with high distress or dysphoria? Or are they not fundamentally psychopathic, given their sharp departure from the emotionally stable, fearless, resilient psychopaths described in several prominent models of psychopathy (see Cleckley, 1976; Lykken, 1995; McCord & McCord, 1964; Patrick, 1994)? This issue remains unresolved in the current literature.

Does antisocial behavior belong in the definition? Psychopathy research relies heavily on criminal-offender samples, and the PCL-R, which was designed for use with samples of this kind, includes offense-specific items (e.g., criminal versatility, juvenile delinquency, violation of conditional release) and references criminal acts in the scoring of other items (e.g., conning/manipulation, early behavior problems, poor behavioral controls). This strong reliance on criminal behavior in defining psychopathy tends to foster the impression that psychopathic individuals invariably commit crimes.

Criminal behavior forms part of a broader category of antisocial behavior that does not necessarily entail law breaking. For the purposes of this review, we define *antisocial behavior* as a broad class of behavior that causes social harm or defeats the interests of the social order (e.g., malicious gossip or lying), *criminal behavior* as a specific subclass of antisocial behavior that is officially proscribed by law (e.g., libel, fraud, burglary, robbery), and *violent behavior* as a specific subclass of criminal behavior that typically involves a physical act that can inflict injury (e.g., hitting someone, forcing someone to have sex, threatening someone with a weapon in hand). Antisocial behavior encompasses criminal behavior, which in turn encompasses most forms of physical violence.

Recent debate (e.g., Hare & Neumann, 2010; Skeem & Cooke, 2010a, 2010b) has established agreement that psychopathy's distinctive personality characteristics are associated with antisocial behavior and that some psychopaths cause social harm without breaking the law (e.g., by lying, manipulating others, acting without regard for the feelings of others). There may also be agreement that criminal behavior is not a core or essential feature of psychopathy, notwithstanding the PCL-R's heavy emphasis on such behavior.

However, there is dispute about whether antisocial behavior represents an inherent part of the construct or instead a nonessential correlate or consequence of it. The antisocial facet of PCL-R Factor 2 in particular contains items that primarily emphasize antisocial behavior (e.g., poor behavioral controls, early behavior problems, criminal versatility) rather than personality traits. Cooke, Michie, and Hart (2006) have argued from their analyses that these items, especially the antisocial-facet items—which quite prominently feature criminal behavior (see Table 2)—are merely a consequence of central psychopathic traits. By contrast, Hare and Neumann (2005) maintain that such arguments "are inconsistent with the structural properties of the PCL-R and with evidence that the development of traits and actions are interactive and reciprocal" (p. 58). With respect to this latter point, Hare and colleagues are plausibly suggesting that, rather than conceptualizing

behavioral repertoires and traits as static entities, with traits preceding the development of behavior, we should consider the likelihood that the two influence each other continuously over the course of development. For example, involvement in criminal behavior early in life may lead to desensitization and increased callousness, in much the same way that social-cognitive theorists propose that playing violent video games results in long-term changes to personality characteristics (Anderson et al., 2010).

Is psychopathy a unitary or a multifarious construct? The foregoing points of contention—about whether antisocial behavior or adaptive features are essential to psychopathy and whether emotionally distressed people are fundamentally psychopathic—relate to a broader dispute about psychopathy: Is it a unitary condition or one with distinguishable variations marked by differing configurations of features? Although some writers view psychopathy as a configural construct, entailing the co-occurrence of distinctive but synergistic components (e.g., Lilienfeld & Fowler, 2006; see also: Cleckley, 1976; Kraepelin, 1904, 1915; Schneider, 1950/1958), others argue that it is a unitary entity reflecting a single underlying etiology (e.g., Neumann, Hare, & Newman, 2007). The relative utility of one perspective over another has not yet been directly tested.

The complexity of this issue is illustrated by the PCL-R's approach to diagnosing psychopathy. Although intended to index psychopathy as a unitary construct, the PCL-R nonetheless contains two moderately correlated scales or factors that show diverging relations with many different criterion variables across domains of self-report, behavioral response, and physiological reactivity (Hare, 2003; Patrick, 2007b; Patrick & Bernat, 2010), and its lower-level facets show further evidence of such variegation (Hall, Benning, & Patrick, 2004). In fact, in a number of cases, the PCL-R's two major factors are correlated in *opposing* directions with external variables. For example, the interpersonal-affective factor tends to be negatively associated with trait anxiety, whereas the antisocial factor tends to be positively associated with trait anxiety (Harpur et al., 1989; Hicks & Patrick, 2006). Results of this kind appear more consistent with a configural than a unitary perspective, but nonetheless there remains substantial debate on this topic.

Integrating definitions, making sense of controversies: The triarchic model. As suggested earlier, problems of definition are pervasive in virtually all psychological disorders. Nevertheless, problems of this type are especially important to consider in relation to psychopathy. The reason is that a label of "psychopath" is often used to make profoundly important decisions about people's lives, including the severity of punishment they will receive, whether efforts will be undertaken to treat them, and whether they will be detained in an institution or released to the community. To use this label in an ethical and valid way to make important psycho-legal decisions, it is important to be clear on what we mean by the term *psychopathy* when applied to people in clinical or research settings.

An organizing framework may help to make sense of the contrasting definitions and perspectives that reflect the current state of theory and research on psychopathy. Toward this end, Patrick, Fowles, and Krueger (2009) formulated the triarchic model of psychopathy as a framework for reconciling competing and in some cases contradictory perspectives. The model provides an integrative account of what psychopathy is *phenotypically*—that is, how it has been characterized historically and contemporaneously. It is *not* intended as a direct template for conceptions of etiology. We introduce this model here as a point of reference for the reader to organize and think about (a) differing conceptualizations and operationalizations of psychopathy and (b) how research findings based on well-validated measures apply to policy and practice. With respect to the latter issue, the implications that we articulate later in this monograph are based not on the triarchic model, but instead on a large body of research conducted with relatively well-validated measures of psychopathy that may be viewed through the model's lens. Although the model is relatively new and has not yet been rigorously tested, it provides a useful rubric for assimilating existing research findings and considering their implications.

The triarchic model proposes that psychopathy can be conceptualized in terms of three distinct but intersecting phenotypic constructs: *disinhibition*, *boldness*, and *meanness*. These constructs are proposed not as elements of a unitary higher-order psychopathy construct but rather as configural building blocks for alternative conceptualizations of psychopathy described by historical and contemporary writers and tapped by measurement tools like the PCL-R and PPI. Although the triarchic model emerged from efforts to integrate historical and contemporary conceptualizations of psychopathy (Patrick, 2010; Patrick et al., 2009), it also incorporates concepts and findings from the broader personality, psychopathology, and neurobiological literatures. The next section describes the three distinctive constructs of the model and identifies empirical referents for each.

Triarchic building blocks: disinhibition, boldness, and meanness. *Disinhibition* entails proneness toward impulse-control problems, including lack of planfulness and foresight, impaired regulation of affect and urges, insistence on immediate gratification, and deficient behavioral restraint. Related concepts include externalizing behavior (Achenbach & Edelbrock, 1978; Krueger et al., 2002), disinhibitory psychopathology (Gorenstein & Newman, 1980; Sher & Trull, 1994), and low inhibitory control (Kochanska, Murray, & Coy, 1997). In personality terms, disinhibition represents the nexus of impulsivity and negative emotionality (Krueger, 1999a; Sher & Trull, 1994), and it shows up behaviorally as irresponsibility, impatience, rapid action with negative consequences, alienation and distrust, volatile emotional displays including reactive aggression, untrustworthiness, proneness to drug and alcohol problems, and illicit and other norm-violating activities (Krueger, Markon, Patrick, Benning, & Kramer, 2007).

The mapping of constructs of the triarchic model onto existing psychopathy inventories is necessarily tentative given

the model's recent formulation. Nonetheless, the thematic content of items of existing inventories and what is known of their empirical correlates provides some basis for characterizing them in terms of the model.

Research suggests that disinhibition substantially underlies the distinctive variance in PCL-R antisocial scale or Factor 2 (see Patrick et al., 2005) and the analogous impulsive antisociality factor of the PPI (PPI-II; Blonigen et al., 2005). However, contemporary researchers do not view disinhibition as equivalent to psychopathy. In particular, disinhibition is associated with heightened negative emotionality, including anxiety proneness, mood disorders, and suicidal behavior (Achenbach & Edelbrock, 1978; Krueger, 1999b; Verona & Patrick, 2000; Verona, Sachs-Ericsson, & Joiner, 2004). As discussed earlier, features of this type seem incompatible with such trademark symptoms of psychopathy as affective shallowness, imperturbability, and low anxiousness (Cleckley, 1976; Lykken, 1995; McCord & McCord, 1964; Patrick, Bradley, & Lang, 1993).

It is important to underscore that although the construct of disinhibition constitutes part of what conceptualizations and measures of psychopathy reflect, it also intersects with problem domains not considered essentially psychopathic—for example, reactive aggression (Patrick, 2008; Patrick & Zempolich, 1998), substance dependence (Krueger et al., 2002; Patrick et al., 2005), and suicide (Verona, Hicks, & Patrick, 2005; Verona & Patrick, 2000). Within criminal samples, studies that have classified the personality profiles of offender participants using quantitative (e.g., cluster-analytic) methods have consistently revealed one or more groups that primarily exhibit characteristics of disinhibition—that is, who react to stressors with intense and unstable negative affect and who are anxious, moody, irritable, and unsociable (Blackburn, 2009; Poythress, Edens, et al., 2010; see "Does 'Secondary Psychopathy' Exist?" below). Relatedly, longitudinal research on the development of antisocial propensities indirectly points to a phenomenon known as early "difficult temperament"—characterized by a similar array of features—that can predict life-course-persistent criminal involvement, particularly when combined with adverse environmental experiences (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996; Moffitt et al., 2002). Thus, while disinhibitory tendencies are emphasized in many definitions and measures of psychopathy, it must be borne in mind that people who exhibit high levels of disinhibition are not necessarily psychopathic and that disinhibition occurring in the context of psychopathy may have a distinctive appearance and perhaps arise from different sources, compared to disinhibition per se (cf., Baskin-Sommers, Wallace, MacCoon, Curtin, & Newman, 2010); Frick & Marsee, 2006).

Boldness encompasses the capacity to remain calm and focused in pressured or threatening situations, rapid recovery from stressful events, high self-assurance and social efficacy, and a tolerance for unfamiliarity and danger. Terms related to boldness include *fearless dominance* (Benning, Patrick, Blonigen, et al., 2005), *daringness*, *audacity*, *indomitability*, *resiliency* (Block & Block, 1980), *surgency* (Cattell, 1947), and *hardiness* (Kobasa, 1979). In personality terms, boldness is the nexus of social dominance, low stress reactivity, and thrill/adventure seeking (Benning et al., 2003, Benning, Patrick, Blonigen, et al., 2005). Boldness manifests behaviorally as imperturbability, social poise, assertiveness, persuasiveness, bravery, and venturesomeness. Although it includes features that are essentially adaptive, boldness is also associated empirically (see below) with certain maladaptive proclivities (e.g., narcissism, thrill seeking, lack of empathy; Benning, Patrick, Blonigen, et al., 2005; Miller, Watts, & Jones, 2011).

Boldness, represented in Cleckley's characterization of psychopathy by social poise and persuasiveness, diminished emotional sensitivity, and imperviousness to punishment, is indexed by the PPI's first, fearless dominance, factor, which is largely independent of its second (impulsive-antisociality, Benning, Patrick, Blonigen, et al., 2005, or self-centered impulsivity, Lilienfeld & Widows, 2005) factor. As noted earlier, the constituent subscales of the PPI directly assess characteristics of social potency, stress immunity, and fearlessness. By comparison, the first (interpersonal-affective) factor of the PCL-R taps such characteristics less thoroughly and less directly, mainly through its interpersonal facet (Benning, Patrick, Blonigen, et al., 2005; see also Hall et al., 2004, and Zolondek, Lilienfeld, Patrick, & Fowler, 2006). Notably, given that the interpersonal facet of the PCL-R is moderately interrelated with the other three facets, the PCL-R appears not to measure boldness separately from disinhibition and antisocial behavior.

Meanness describes a constellation of attributes including deficient empathy, disdain for and lack of close attachments with others, rebelliousness, excitement seeking, exploitativeness, and empowerment through cruelty. Related terms connected to specific operational measures include *callousness* (Frick, O'Brien, Wooton, & McBurnett, 1994), *coldheartedness* (Lilienfeld & Widows, 2005), and *antagonism* (Lynam & Derefinko, 2006). In personality terms, meanness resides midway between (high) dominance and (low) affiliation (Blackburn, 2006; Harpur et al., 1989). From this perspective, meanness can be viewed as agentic disaffiliation: a style in which individuals actively pursue valued goals without regard for the impact their actions have on others, or perhaps even with the explicit intent to cause harm. Meanness can be expressed in terms of arrogance, verbal derisiveness, defiance of authority, an absence of close personal relationships, aggressive competitiveness, physical cruelty toward people and animals, strategic aggression and exploitation of others, and destructive excitement seeking.

In comparison with boldness, which is emphasized in descriptions of psychopathy in community and psychiatric samples (Cleckley, 1976; Kraepelin, 1904, 1915; Lykken, 1995; Schneider, 1950/1958), meanness is more likely to appear in conceptions of psychopathy in criminal-offender samples (see McCord & McCord, 1964; Quay, 1964, 1986). This difference in emphasis is also evident in leading measures of psychopathy designed for use with community samples as opposed to incarcerated

samples. For example, boldness as discussed earlier is embodied in the subscales of PPI-I (fearless dominance) whereas meanness is most clearly represented in the one PPI/PPI-R scale not accommodated by the two-factor model (i.e., coldheartedness). Other PPI scales that appear to contain elements of meanness (e.g., Machiavellian egocentricity, rebellious nonconformity) also contain elements of disinhibition, such that they bind together with purer indicators of disinhibition (e.g., carefree nonplanfulness and blame externalization, formerly called alienation) into PPI-II (impulsive antisociality). In contrast with the PPI/PPI-R, the PCL-R as a whole appears to capture a meaner or more antagonistic expression of psychopathy (Lynam & Derefinko, 2006; Patrick, Hicks, Nichol, & Krueger, 2007; Venables & Patrick, in press). In particular, items represented in the interpersonal-affective factor of the PCL-R contain elements of meanness (e.g., callousness, insensitivity, exploitativeness, disdain for others) in their definitions. Again, however, given moderate associations among its scales, the PCL-R does not appear to effectively separate these constructs.

To what extent can the triarchic constructs of boldness, meanness, and disinhibition be assessed more directly and distinctively in inventories for the assessment of psychopathy, including external-rating measures? To better understand the nature of these distinctive phenotypic constructs and their contributions—separately and configurally—to differing concepts and variants of what we call psychopathy, it will be useful to develop measures to specifically index these constructs in differing domains of assessment, including measures designed to index each as separately as possible from the others. Because these constructs are relatively new and have only begun to be operationalized, it remains unclear how dissociable they will ultimately be. There are, however, some available data that speak to this point indirectly. For example, research on the PPI's two factors (discussed earlier) suggests that boldness can be operationalized in a manner that is largely independent of disinhibition. That the coldheartedness subscale of the PPI appears to index something quite distinct from the broad fearless dominance and impulsive-antisociality components of the PPI (i.e., tendencies toward callous insensitivity) suggests more tentatively that meanness could in principle also be operationalized independently. Research on the scope and structure of impulse-related problems and traits in incarcerated and nonincarcerated adults also suggests that tendencies toward meanness and disinhibition can be disaggregated (Krueger et al., 2007; Venables & Patrick, in press).

Accommodating multiple definitions of psychopathy. Although the triarchic model does not resolve ongoing debates regarding what features are essential to psychopathy and which individuals should be considered psychopathic, it does bring order to the varied and contentious perspectives on what psychopathy is and provides a coherent framework for considering what each has to offer and for identifying potential avenues for resolution of debates. How can the three constructs of the triarchic model be used to organize disparate definitions of psychopathy? We propose that—to varying degrees—existing measures and conceptualizations of psychopathy encompass elements of boldness or meanness (or both), coupled with disinhibition. For example, the PCL-R emphasizes a "mean" or aggressive expression of disinhibition (cf., Krueger et al., 2007; Venables & Patrick, in press) that overlaps with historical accounts of psychopathy among criminals (e.g., McCord & McCord, 1964). In contrast, Cleckley accorded greater emphasis to boldness and less to meanness. Cleckley also described a differential expression of disinhibition relative to criminal conceptions, characterized by emotional stability and feckless disregard rather than negative emotionality and predatory aggressiveness (e.g., inadequately motivated antisocial behavior; see Table 1). Primary psychopathy, a variant of psychopathy that overlaps substantially with Cleckley's description (cf., Lykken, 1957, 1995; see "Does 'Secondary Psychopathy' Exist?" below), similarly appears to be represented mainly by boldness and a form of disinhibition that entails low negative emotionality. The PPI-R, reflecting neither a purely psychiatric nor criminological tradition, indexes all three components of the triarchic model, with particularly salient coverage of boldness.

Following from these points, one can distinguish at least two different conceptions of psychopathy with differing policy implications. *Cleckleyan psychopathy* can be regarded as the bold, disinhibited condition described above, entailing low anxiety and feckless disregard (i.e., "insouciance"). *Criminal psychopathy* refers instead to a meaner, more aggressively disinhibited conception of psychopathy that explicitly entails persistent and sometimes serious criminal behavior. Research on criminal psychopathy typically operationalizes this disorder with the PCL-R/SV.

In the remainder of this review, when we refer to psychopathy, we will emphasize the components of this phenomenon that tend to be most distinctive across conceptualizations: namely, boldness and, to a lesser extent, meanness (which overlap most with PPI-R and PCL-R interpersonal-affective scales). Although most conceptions of psychopathy include disinhibition (which overlaps most with PCL-R and PPI-R antisocial scales), this feature is insufficient for defining psychopathy, as noted earlier (cf., Cleckley, 1976). High disinhibition can be found in many nonpsychopaths and is common among criminal offenders and individuals with impulse-related problems, including substance disorders and certain personality disorders (in particular, those included in "Cluster B" of the DSM).

Do psychopathy definitions generalize across sex, ethnicity, and culture? Leading conceptualizations and measures of psychopathy have largely been developed with White males, predominantly from North America. This raises an important question: To what extent do the major dimensions and manifestations of psychopathy defined above generalize to women, ethnic minorities, and people from other cultures? As shown

next, the answers to such questions are vital for the present review, given that female offenders and minority offenders are particularly policy-relevant groups.

Sex. The population of women under supervision of the criminal justice system is growing rapidly. In the United States between 1996 and 2005, the number of women arrested increased by 7% whereas the number of men decreased by 8% (Federal Bureau of Investigation, FBI, 2005). Nevertheless, as Verona and Vitale (2006) observed: "Until recently, the study of psychopathy in women was all but ignored by psychopathologists and forensic psychologists" (p. 415). For example, 13 of Cleckley's (1976) 15 prototype cases were men, and the PCL-R was developed and validated predominantly with samples of male offenders.

The extent to which psychopathy—both measures and the construct—will generalize from men to women is unclear, given differences between the two groups. For example, women tend to be arrested for different crimes than men (e.g., FBI, 2005) and tend to be involved in different types of violence (e.g., Robbins, Monahan, & Silver, 2003). Female offenders also have much higher rates of victimization (e.g., McClellan, Farabee, & Crouch, 1997) and serious mental illness (Hodgins, Lapalme, & Toupin, 1999) than their male counterparts. Are there also sex-related differences in levels of psychopathy or in what psychopathy means? Here, we examine whether there are sex differences in (a) average levels of psychopathy, (b) the factor structure of psychopathy measures, and (c) behavioral expressions of psychopathy.

Mean levels of psychopathy in men and women. Researchers generally concur that men display higher levels of psychopathy than women do (Cale & Lilienfeld, 2002a; Verona & Vitale, 2006; Vitale & Newman, 2001). This pattern is generally observed for the PCL-R as well as the PPI (but see Hamburger, Lilienfeld, & Hogben, 1996, for an exception). Similar small to medium sex differences also have been found for both scales of these instruments, although they generally are somewhat larger for the interpersonal-affective than antisocial scale (see Lilienfeld & Hess, 2001; Miller et al., 2011).

Differences in the factor structure of psychopathy measures in men and women. Different factor structures for women and men on standard measures of psychopathy would suggest possible sex-related differences in the validity of such measures or perhaps meaningful sex differences in the characteristic expression of the disorder. Most investigators have found broadly consistent factor structures across sex (Verona & Vitale, 2006), but there are two notable exceptions. In a sample of 103 women prisoners, R. Salekin, Rogers, and Sewell (1997) found several differences in the factor loadings of PCL-R items. More recently, using PCL-YV data from 507 German adolescents, Sevecke, Pukrop, Kosson, and Krischer (2009) found unsatisfactory fit for all factor (two-, three-, and four-factor) models in females but an adequate three-factor-model fit for males. These mixed findings suggest that further investigation of sex differences in factor structure is needed.

Differential correlates of psychopathy measures in men and women. Do psychopathy measures predict different external criteria in men than in women? On this question, arguably the issue most likely to have policy implications, the answer remains unclear.

Some authors (e.g., C. G. Cloninger, 1978; Lilienfeld, Van-Valkenberg, Larntz, & Akiskal, 1986) have hypothesized that psychopathy is manifested somewhat differently in men than in women, with males displaying more of an antisocial pattern and females more of a histrionic pattern. Histrionic personality disorder (HPD) is a condition marked by seductiveness, dramatic behaviors, vanity, and self-centeredness. A few investigations offer provisional support for this intriguing possibility. Using structural equation modeling in a sample of 180 undergraduates, Hamburger et al. (1996) found that men's PPI scores were significantly more highly associated with ASPD features than HPD features, whereas the reverse pattern was evident for women. However, recent studies have produced more mixed findings (see Cale & Lilienfeld, 2002b; R. Salekin et al., 1997).

Other investigators have examined whether the associations between psychopathy and putatively relevant "normal range" personality variables (e.g., socialization, disinhibition, narcissism) differ by sex. Most investigators have reported few differences (e.g., Vitale, Smith, Brinkley, & Newman, 2002; Zagon & Jackson, 2004). For example, based on a relatively large sample of 361 undergraduates, Miller et al. (2011) found that measures of psychopathy and many other personality traits were similarly correlated across sex, although the antisocial factor correlated more strongly with openness to experience in women and with impulsivity-related tendencies (e.g., difficulties resisting urges, sensation seeking) in men. These findings may be consistent with multifactorial threshold models (C. R. Cloninger, Christiansen, Reich, & Gottesman, 1978), which posit that for both social (e.g., prohibitions against overt aggression in females) and biological (e.g., lower testosterone) reasons, females require a greater diathesis (underlying liability) to manifest psychopathy and allied traits compared with males. Hence, females who display such traits may be especially severe in their predispositions toward disinhibited behavior. However, other interpretations are possible.

Importantly, investigators have tested for potential sex differences in how psychopathy relates to violence and other crime. The results of several studies suggest that PCL-R scores may be somewhat less predictive of violence and criminal recidivism in women than in men (R. T. Salekin, Rogers, Ustad, & Sewell, 1998; see Verona & Vitale, 2006, for a discussion). Although these findings require replication, they may reflect women's lower overall base rate of physical aggression. In contrast, psychopathy may be more associated with suicidal behaviors, and perhaps internalizing symptoms in general, in women than men (Sevecke, Lehmkuhl, & Krischer, 2009; Verona et al., 2005). Broadly construed, this body of literature raises the possibility that psychopathy is

expressed preferentially in externalizing behaviors in men and internalizing problems in women. Further research will be needed to corroborate this hypothesis.

Finally, several investigators have begun to examine the association between psychopathy and relational aggression (Crick & Grotpeter, 1995), a form of noncriminal antisociality marked by gossiping, "back-stabbing," rumor spreading, and other malevolent behaviors aimed at damaging others' relationships. In contrast to physical aggression, relational aggression appears to be about as common in women as in men. Although this asymmetry led Verona and Vitale (2006) to propose that women may be more likely to express psychopathy through relational aggression, and men through physical aggression. A recent PPI-based study of undergraduates (Schmeelk, Sylvers, & Lilienfeld, 2008) found no support for this proposal. However, further investigation in clinical and prison samples is warranted.

Summary and conclusions on sex differences. With few exceptions, men obtain higher scores than women on measures of psychopathy. Data are mixed on whether the factor structure of psychopathy measures generalizes from men to women. Data also demonstrate that the external correlates of psychopathy measures are broadly comparable, with some policy-relevant exceptions. That is, psychopathy measures may be more strongly associated with physical aggression among men and with suicidal and other internalizing behaviors among women. These possibilities, which may bear implications for risk assessment, underscore the need for additional research.

Ethnicity and culture. Research on psychopathy predominantly focuses not only on men but also on White, North American samples. The extent to which this research base generalizes to other ethnic and cultural groups is of considerable practical significance. For example, in the United States, Black individuals are grossly overrepresented in the criminal justice system. According to one estimate, a Black male born in 2001 has a 32% chance of going to prison at some point during his life, a Hispanic male has a 17% chance, and a White male has a 6% chance (Bonczar, 2003). Moreover, the Black population is a historically disadvantaged group that now appears subject to small but significant discrimination in sentencing practices (e.g., Mitchell, 2005; Spohn, 2000).

Do measures and definitions of psychopathy generalize to ethnic-minority groups and other cultures? In parallel with research on sex differences, investigations of possible ethnic and cultural differences in psychopathy (with respect to mean levels, factor stuctures, and external correlates) have also increased recently, but the findings have been mixed and are somewhat difficult to interpret.

Mean levels of psychopathy by ethnicity. Few studies have examined measures of psychopathy per se for ethnic-group differences. Instead, most studies have relied on nonspecific measures of antisociality, with an unknown portion of high scorers therefore lacking distinctive psychopathy traits. This paucity of literature has not stopped some researchers from drawing strong conclusions. For example, based on nonspecific indicators of antisocial behavior, Lynn (2002) concluded that "Blacks and Native Americans almost invariably show higher levels of psychopathic personality than Whites" (p. 305; see Skeem, Edens, Sanford, & Colwell, 2003; Sullivan & Kosson, 2006).

The research literature using psychopathy measures is mainly limited to examinations of differences between Whites and Blacks. Skeem, Edens, Camp, and Colwell (2004) aggregated PCL-R findings from 21 studies involving prison, psychiatric, and substance-abuse samples (N = 8890), and found that Blacks obtained total PCL-R scores that were trivially (.7 of a point) higher than those of Whites. The effect size for this difference was very small (Cohen's d = .11; interpersonal-affective factor d= .09, antisocial factor d = .06), calling into question Lynn's (2002) contention that Blacks score higher than Whites on the distinctive interpersonal-affective psychopathy features. Even the small differences reported by Skeem et al. (2004) are difficult to interpret given that most of the studies relied primarily on White interviewers, raising the possibility of undetected race biases in interviewing style, coding, or both. In addition, significant heterogeneity in effect sizes across studies suggests that more research evaluating race as a potential moderator would be fruitful. McCoy and Edens (2006) similarly examined mean race differences on PCL measures meta-analytically in a combined sample (N = 2199) of adolescents. They found that Blacks scored on average 1.5 points higher than Whites. The effect size was again quite small (.20). In summary, the extant meta-analytic data suggest few, if any, mean differences in psychopathy scores between Black and White participant samples; data examining mean differences among other races is largely lacking.

Factor structure and correlates of psychopathy measures by ethnicity. Most researchers who have examined the factor structure of psychopathy measures have reported broad comparability across ethnic groups (e.g., Cooke, Kosson, & Michie, 2001; Windle & Dumenci, 1999; but see Kosson, Smith, & Newman, 1990, for an exception). In addition, although investigators have found that scores on psychopathy measures often predict similar external correlates in White and Black participants, some intriguing exceptions have been reported in studies examining putative mechanisms for psychopathy.

Specifically, for Blacks as compared to Whites, well-replicated laboratory deficits—including passive-avoidance learning (e.g., Newman & Schmitt, 1998; Thornquist & Zuckerman, 1995; but see Epstein, Poythress, & Brandon, 2006, for contrary results), deficient fear-potentiated startle (Baskin-Sommers, Newman, Sathasivam, & Curtin, 2011), and lexical decision making (Lorenz & Newman, 2002)—may be less associated with psychopathy measures, including the PCL-R. In addition, several investigators have reported that psychopathy measures, especially antisocial-factor indices, are somewhat less associated with self-report impulsivity measures in Blacks than in Whites (Kosson et al., 1990; Thornquist & Zuckerman, 1995).

From a public-policy perspective, relationships between psychopathy and antisocial behavior are particularly important. A meta-analysis by Leistico, Salekin, DeCoster, and Rogers (2008) revealed that PCL-R total scores and antisocial-factor scores were significantly less associated with antisocial

conduct—mainly criminal behavior—in samples with higher numbers of Black offenders (but see Sullivan, Abramowitz, Lopez, & Kosson, 2006, for contrasting evidence of broadly similar external correlates for the PCL-R in Latino, White, and Black prisoners).

Summary on ethnicity. In sum, moderating effects of race on correlations of psychopathy with personality traits (e.g., impulsivity), laboratory tasks, and antisocial behavior are preliminary and not entirely consistent, and thus require replication. Nevertheless, the moderation effects that have been reported raise the speculative but important possibility that psychopathy may be less "dispositional" in Blacks than in Whites, perhaps owing to a larger contribution of adverse environmental influences in the etiology of psychopathy for Blacks, especially in association with disinhibition and antisocial behavior. Put another way, less of the variance in psychopathy scores in Blacks than in Whites may be attributable to individual differences in early temperament-based traits relative to the influence of sociocultural factors (e.g., poverty-related factors). These findings therefore suggest the need for caution in labeling Blacks as psychopaths on the basis of available measures, as such measures may be less valid for indexing core psychopathic personality tendencies in Blacks than in Whites.

In addition to drawing attention to the importance of further research within North American samples, such findings suggest that other Western nations should prioritize research of this kind. For example, in New Zealand, where the PCL-R/SV is used for parole decision making (Wilson & Bakker, 2000), European nationals make up only a minority of prisoners, with indigenous Maori—around 12% of the community at large—making up half of the prison population.

Potential cultural differences in psychopathy. Does psychopathy exist in at least some non-Western cultures? The answer appears to be an unqualified "Yes." In her classic studies of two isolated cultures that had experienced minimal contact with Western civilization—a group of Yupik-speaking Inuit Eskimos in Alaska near the Bering Strait and a group of Yorubas in Nigeria—Murphy (1976) reported clear evidence for the existence of conditions similar (albeit not identical) to Western psychopathy. For example, she found that the Inuits had a term—*kunlangeta* (meaning "his mind knows what to do but he does not do it")—that they used to describe "a man who . . . repeatedly lies and cheats and steals things and . . . takes sexual advantage of many women—someone who does not pay attention to reprimands and who is always being brought to the elders for punishment" (p. 1026), a description that bears a striking resemblance to the Western concept of psychopathy. In addition, Murphy reported that the Yorubas had a term *arankan*, "which means a person who always goes his own way regardless of others, who is uncooperative, full of malice, and bullheaded" (p. 1026).

Although to our knowledge there are no empirical studies comparing levels or prevalence of psychopathy in non-Western as compared to Western nations, some studies have compared psychopathy levels in offenders from different Western nations. However, difficulties of interpretation are evident in such studies. For example, one replicable finding (e.g., Cooke, 1996; Cooke & Michie, 1999; Sullivan & Kosson, 2006) is that prisoners in European countries obtain mean PCL-R scores 2 to 3 points below those of prisoners in North America. At first blush, these findings would appear to indicate that individuals in North America may be more psychopathic than their counterparts in other Western countries. However, myriad international differences in legislation, policy, and practice that affect the placement of people in mental health and criminal justice systems render such conclusions premature (Sullivan & Kosson, 2006). In Germany, for example, a label of "psychopathic disorder" often leads to incarceration in a forensic psychiatric hospital rather than a prison; this may be one factor contributing to lower overall PCL-R scores for German compared with American prisoners. In sum, although limited data preclude strong conclusions, existing research suggests broad similarities rather than differences in psychopathy across Western cultures (Cima & Raine, 2009; Hildebrand, de Ruiter, & Nijman, 2004; Pastor, Moltó, Vila, & Lang, 2003),

What causes psychopathy?

As the previous section suggested, the basic definition of psychopathy is subject to debate and may differ in its applicability to particular sex and ethnic groups. Given these controversies in defining psychopathy, it is not surprising that its etiology is not yet well understood. Nevertheless, as is the case for definitional issues, we believe there are consistent themes and emergent understandings about the mechanisms and etiology of psychopathy. In conceptualizing etiology, it is important to consider (a) the relative contributions of genetic and environmental influences to psychopathy, (b) evolutionary perspectives on causation, and (c) cognitive, emotional, and neuroimaging correlates of psychopathy. In this section, we examine these points in turn before presenting a causal model that integrates current findings.

Basic sources of etiologic influence: genes and environment. The classic twin design is subject to some questionable assumptions but represents one major method for beginning to evaluate the contributions of genetic and environmental sources to psychological disorders, including psychopathy. Identical (monozygotic) twins in principle share 100% of their genes, whereas fraternal (dizygotic) twins on average share 50% of their genes. The correspondence (concordance) rate for levels of psychopathic traits can be compared for twins of one type versus the other to draw conclusions about sources of etiologic influence.

Traditionally, one infers three types of influences from the classical twin design. First, higher concordance between identical twins than between fraternal twins is used to infer *genetic* etiology, because identical twins are more alike genetically than fraternal twins. Second, if the concordance rate between

fraternal twins is more than half that between identical twins, a *shared (common) environmental* contribution to the condition or trait is inferred. Shared environmental influence refers to common experiential factors (e.g., salient aspects of home or neighborhood) that increase the similarity among members of the same family. Third, an influence of *nonshared (unique or random) environment*—unique events or experiences that decrease the similarity among members of the same family—is inferred from the extent to which the concordance rate for identical twins falls below 100%.

As in other domains of psychopathy-related research, a key limitation of twin studies on psychopathy is that, historically, studies of this kind have tended to define psychopathy predominantly or exclusively in terms of delinquent/antisocial behavior (for reviews of this literature, see Rhee & Waldman, 2002; Waldman & Rhee, 2006). Insofar as it is the presence of interpersonal-affective features that distinguishes psychopathy as a clinical condition, much of the existing literature provides a limited and possibly misleading picture of the etiology of psychopathy. Although no twin studies have yet been conducted using the PCL-R or PCL:SV, five studies incorporating alternative measures of interpersonal-affective features have appeared in the past decade.

First, in an initial study, Blonigen, Carlson, Krueger, and Patrick (2003) used the PPI to assess psychopathy in adolescent male twins (N = 353). They estimated the heritability of overall PPI scores to be around 47%; the remainder of score variance (53%) was attributable to nonshared environmental influences. In a second, follow-up study with a larger, mixed-sex sample of twins (N = 1,252), Blonigen et al. (2005) used data from an omnibus personality inventory to estimate scores on the two distinct factors of the PPI (fearless dominance, impulsive antisociality) and found each to be similarly moderately heritable—45% and 49%, respectively—for males and females. Importantly, scores on the two PPI factors were uncorrelated in this sample, indicating that heritable portions of each were nonoverlapping (i.e., accounted for by separate genetic influences). The remainder of variance in each factor was attributable, again, to nonshared environmental influences.

In a third study of a large sample of child twins (N = 7,374), Viding and colleagues (Larsson, Viding, & Plomin, 2008; Viding, Blair, Moffitt, & Plomin, 2005, Viding, Frick, & Plomin, 2007, Viding, Jones, Frick, Moffitt, & Plomin, 2008) examined monozygotic/dizygotic concordance for teacher ratings on an unvalidated three-item scale meant to tap callous-unemotional traits (guiltlessness, shallow affectivity, and callous-aggressive tendencies), and on another brief scale meant to tap conduct problems (e.g., fighting, stealing, lying). Two noteworthy findings from this work are that: (a) callous-unemotional traits appeared moderately to highly (>60%) heritable, and (b) conduct problems appeared more heritable among children high in callous-unemotional traits (70–80%) than among those low in callous-unemotional traits (30–50%). The latter finding has been used to argue that there are different etiologic pathways to antisocial behavior for those with—and without—psychopathic traits (e.g., Frick & Marsee, 2006). Considering its importance, this finding warrants replication.

Two additional studies—both on samples of adolescent twins—bear mention. One operationalized psychopathy using a 19-item self-report measure patterned after Cleckley's description (Taylor, Loney, Bobadilla, Iacono, & McGue, 2003); the other, using a validated self-report measure called the Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002; Larsson, Andershed, & Lichtenstein, 2006; Larsson et al., 2007). Both studies provide additional support for the moderate contribution of genetic and nonshared environmental influences on psychopathy.

In sum, data from twin studies conducted to date point to the conclusion that psychopathy as a whole reflects moderate genetic influence along with moderate nonshared environmental influence. However, work of this type leaves many questions unanswered. For example, the extent to which common or separate genes contribute to the interpersonal-affective components of psychopathy (Factor 1) versus antisocial features (Factor 2) is unclear. Moreover, the nature of these genes and the way(s) in which their influence is exerted have not been specified. Likewise, the ways in which environmental influences directly affect the nervous system and/or moderate gene expression have not been determined. Thus, insights gained from twin studies must be considered as only a first tentative step toward unraveling the mystery of psychopathy's essential origins. More sophisticated designs are needed to assess whether and how specific genetic and environmental factors interact to cause psychopathy.

Evolutionary perspectives on causation. As shown above, psychopathy is at least moderately heritable. Psychopathy is also associated with criminal behavior, substance abuse, and other serious life complications (Hare, 2003). Moreover, ASPD, a condition associated with psychopathy, is linked to an increased risk of premature death via homicides, accidents, and suicides (e.g., Martin, Cloninger, Guze, & Clayton, 1985). These data raise a puzzling question: Given its ties to behaviors and outcomes (e.g., death) that can diminish evolutionary fitness (e.g., capacity to reproduce), why have the genes that contribute to psychopathy persisted?

Three models. Evolutionary psychologists have proposed several models to address this question (see Glenn, Kurzban, & Raine, in press; McNally, 2011). First, balancing-selection models propose that certain alleles that contribute to psychopathy possess adaptive advantages that outweigh their adaptive disadvantages. For example, the literature on successful psychopathy (see "Does Successful Psychopathy Exist?" below) raises the possibility that psychopaths occupy certain "adaptive niches" (Hutchinson, 1957) in society, such as positions of leadership or celebrity status, that involve heightened financial resources, mates, and other fitness-enhancing advantages.

Second, antagonistic-pleiotropy models (McNally, 2011) propose that certain alleles contribute to multiple aspects of psychopathy, with some aspects being evolutionarily

advantageous and other aspects disadvantageous. With respect to evolutionary advantages, psychopathy is associated with early, promiscuous, and coercive sexuality (Harris, Rice, Hilton, Lalumière, & Quinsey, 2007), including rape (Knight & Guay, 2006) and poaching others' mates (Jonason, Li, & Buss, 2010).

Third, frequency-dependent-selection models propose that certain alleles are associated with heightened fitness as they become more rare but are associated with diminished fitness as they become more common. In the case of psychopathy, these models presume that the general population is predominantly cooperative, honest, and trusting, which allows a small proportion of individuals to capitalize on this benevolence by cheating—stealing valuable resources and engaging in promiscuous sexual behavior (Mealey, 1995). As the proportion of cheaters (i.e., psychopaths) inches up in frequency, however, society at large becomes more vigilant, enacting countermeasures against their depredations (e.g., imprisonment), thereby maintaining their frequency at a low level.

Limitations. Although they are worth pursuing, these evolutionary models share at least three limitations. First, they presume that psychopathy per se constitutes an adaptation, rather than one or more of the specific personality traits that make it up (e.g., low empathy; boldness; see Lynam & Derefinko, 2006; Patrick et al., 2009). Rather than focusing on global psychopathy, it may be more fruitful to examine the evolutionary function of theoretically adaptive constituent traits. Second, these models are difficult to test empirically, and there is, at present, no compelling evidence that relates psychopathy to natural selection's "bottom lines" of survival and reproduction (e.g., larger numbers of viable biological offspring).

Third, these evolutionary models presume that psychopathy is maintained by natural selection. This presumption may be false. Keller and Miller (2006) observed that (a) the human brain is adversely affected by more than half of all mutations and that (b) many different mutations that influence different neural systems can yield superficially similar behavioral abnormalities, or "phenocopies." Thus, conditions like psychopathy may arise from innumerable combinations of diverse mutations (along with environmental influences), each of which exert tiny effects on behavior. If a great number of mutations contribute to risk for psychopathy, "natural selection will not keep pace with mutation rates across all the relevant loci" (McNally, 2011, p. 127). If so, there is no requirement that what psychologists term psychopathy is adaptive from an evolutionary standpoint.

Psychobiological processes and models of psychopathy. In contrast to the previous section on distal (evolutionary) etiologic factors, we turn now to more proximate psychobiological differences associated with psychopathy. Since Lykken's seminal (1957) study of fear reactivity and learning in psychopathy, psychological scientists have devoted considerable investigative effort to identifying deficits or deviations in learning, emotion, or brain function that are robustly associated with this disorder (for recent reviews, see Blackburn, 2006; Fowles & Dindo, 2006; Hare, 2003; Hiatt & Newman, 2006; Lorber, 2006).

Although such deficits are sometimes referred to as "mechanisms," it should be borne in mind that they need to be regarded as *correlates* of the condition rather than as causes. Despite current assumptions, there is no evidence that the explanatory value of a correlate is related to "how far down it goes on the causal chain—the more basic and biological the better" (Kendler, 2005, p. 438). In exploring these basic correlates, the goal is to help develop clues to the etiology of psychopathy and inform efforts to identify more unitary variants of this condition.

In the subsections that follow, we summarize literature on, and theories about, psychobiological correlates of psychopathy under two broad categories: emotional-reactivity deficits and cognitive-processing deviations. We also provide a brief overview of findings from neuroimaging studies of psychopathy.

Emotional-reactivity deficits. Emotional deficits represent one major form of processing deviations that have been examined in psychopathy. Cleckley (1976) accorded both the superficial, manipulative quality of psychopaths' interactions and the whimsical nature of their behavior to a general poverty of inner emotional experience.

> Behind the exquisitely deceptive mask of the psychopath the emotional alteration we feel appears to be primarily one of degree, a consistent leveling of response to petty rages and an incapacity to react with sufficient seriousness to achieve much more than pseudo experience or quasi-experience. (p. 383; see also Table 1)

Nevertheless, most subsequent affect-oriented models of psychopathy have posited a more selective impairment, involving deficits in *negative* emotional reactivity specifically (e.g., to aversive events). For example, in his groundbreaking laboratory study of anxiety in psychopathy, Lykken (1957) demonstrated that psychopathic delinquents were deficient in sensitivity to signals of punishment (but for an alternative interpretation in keeping with the cognitive perspective described in the next subsection, see Gorenstein & Newman, 1980). Using an array of experimental tasks, Lykken found that, compared with nonpsychopathic criminals, psychopaths showed weak aversive conditioning to buzzers paired with electric shock (using skin-conductance response to index fear), and poor passive-avoidance learning—learning to withhold responses that lead to punishment. Specifically, a "mental maze task" was used to evaluate their ability to learn to avoid button presses that signaled an approaching electric shock. These pioneering findings led Lykken to propose that lack of fear (what he termed a "low fear IQ"; Lykken, 1978, 1995, 2006) gives rise to all of the essential clinical features of psychopathy.

Hare (1965a, 1978)—based on his early research on autonomic reactivity in anticipation of and in response to physical

stressors (e.g., needle injections, electric shock)—similarly posited that psychopathy is marked by an abnormally steep gradient of fear arousal: Psychopaths exhibit fear only in relation to proximal aversive events. Using a "count-down" procedure in which participants viewed a display of sequential digits leading up to an electric shock, Hare found that, compared with nonpsychopaths, psychopaths showed substantially weaker skin-conductance increases in anticipation of the shock. Notably, in both Lykken's and Hare's work, psychopaths did not differ from nonpsychopaths in their physiological reaction to the shock itself, only in their anticipation of it, suggesting that their deficit lay in an insensitivity to *cues* for danger, not to aversive stimuli themselves.

Fowles (1980; see also Lykken, 1995), referencing J. A. Gray's (1971) neurobiological theory of motivation, postulated that Cleckleyan psychopaths have a weak behavioral-inhibition (anxiety) system but a normal behavioral-activation (appetitive) system. This model dovetails with the above-noted finding that psychopaths are relatively insensitive to signals of threat, as demonstrated by a failure to inhibit behavior that leads to punishment even when signals of threat are present.

More recently, in contrast with Lykken (1995), Fowles and colleagues (e.g., Fowles & Dindo, 2009) have argued that a lack of fear may predispose people to some—not all—of the core deficits of psychopathy (see "Dual-Process Model of Psychopathy" below). Indeed, Lykken's more extreme position is difficult to square with a substantial body of data indicating that deficits in fear reactivity are associated primarily with the interpersonal-affective (Factor 1) features of psychopathy, and not antisocial behavior (Factor 2; e.g., Dvorak-Bertsch, Curtin, Rubinstein, & Newman, 2009; Patrick, 1994; Vaidyanathan, Patrick, & Bernat, 2009). Lykken's model also predicts that psychopaths should exhibit a generalized difficulty in learning from punishment. In contrast, at least some research suggests that psychopaths can display adequate passive-avoidance learning in punishment-only conditions of certain types (Newman & Kosson, 1986). On balance, available evidence indicates that fearlessness is a key component of psychopathy but that it is unlikely to account for all of the affective, interpersonal, and behavioral aspects of the condition.

A broader affective deficit entailing impairments in both positive and negative emotional reactivity—more in line with Cleckley's etiologic perspective—was proposed by Blair (2006). Empirical support for this broader-deficit hypothesis is provided by studies showing reduced autonomic and electrocortical reactivity to pleasurable stimuli in PCL-psychopaths (e.g., Verona, Patrick, Curtin, Bradley, & Lang, 2004; Williamson, Harpur, & Hare, 1991). This reduced reactivity to positive stimuli would again not be readily predicted by Lykken's low-fear model.

Cognitive-processing deviations. Deviations in higher cognitive processing represent the other category of psychobiological processes characteristic of psychopathy. In their influential work, Newman and colleagues (e.g., Hiatt & Newman, 2006; Patterson & Newman, 1993) proposed an underlying deficit in *response modulation*, defined as the ability to switch from an ongoing (dominant) action set to an alternative mode of responding when environmental cues signal the need for a shift. One foundation for this hypothesis consists of findings indicating that psychopaths, compared with nonpsychopaths, show passive-avoidance deficits mainly in contexts involving competing reward and punishment contingencies (e.g., Newman & Kosson, 1986). The implication is that psychopaths' failure to learn from punishment may stem from a failure to attend to extraneous stimuli—including, but not limited to, punishment—once engaged in a dominant response set that is oriented toward reward. A related possibility is that psychopaths may ignore peripheral cues when their attention is captured by a specific task (Jutai & Hare, 1983; Kosson & Newman, 1986), or more specifically, that their information processing is deficient on tasks that demand left-hemisphere-specific processing resources (Kosson, 1996, 1998).

A more recent line of work—ostensibly directed at evaluating the response-modulation hypothesis—entails measurement of eye-blink startle response to noise probes during exposure to shock-threat or safety signals, in the presence or absence of concurrent distraction (e.g., Baskin-Sommers et al., 2010; Newman, Curtin, Bertsch, & Baskin-Sommers, 2010). Findings from studies of this type indicate that fear-reactivity deficits in PCL-R psychopathic offenders occur primarily under conditions of concurrent distraction. This result has been interpreted as indicating that PCL psychopaths' diminished reactivity to fear stimuli, and to emotion-related cues more generally, "reflect idiosyncrasies in attention that limit their processing of peripheral information" (Newman et al., 2010, p. 66). However, the finding can be alternatively interpreted as supporting a low-fear (Lykken, 1995) perspective, insofar as fear activation normally operates to direct and constrain attentional processing (Bradley, 2009; LeDoux, 1995). From this standpoint, diminished fear reactivity under conditions of distraction implies impairment in the brain's normal, automatic propensity to prioritize attention in the direction of cues signaling threat.

Newman's response-modulation model represents an elegant attempt to integrate seemingly contradictory findings from the diverse laboratory literature on psychopathy. Nevertheless, it is not clear how this model accounts for a number of replicated findings in the psychopathy literature that do not require a shift of attention, such as deficient classical conditioning to aversive stimuli (Hare, 1965b; Flor, Birbaumer, Hermann, Ziegler, & Patrick, 2002; Lykken, 1957). On the methodological front, much of the evidence for the response-modulation model derives from extreme group designs, in which high- and low-scoring psychopaths are compared (e.g., Lorenz & Newman, 2002). Such designs often result in inflated effect sizes (MacCallum, Zhang, Preacher, & Rucker, 2002), raising the possibility that this model may not explain as much of the variability in psychopathic traits as it initially appears. Finally, clarification of the extent to which

response-modulation findings can be explained by potentially confounding variables like limited intelligence is needed (see Blair et al., 2004; Epstein et al., 2006; cf. Kosson, Miller, Byrnes, & Leveroni, 2007).

Neuroimaging correlates. A growing body of published neuroimaging research on psychopathy has appeared over the past decade, providing another basis for inferences about basic mechanisms. These studies use either structural-imaging methods focusing on volume differences in specific brain regions or functional-imaging techniques focusing on activity differences within specific brain regions during performance of affective or cognitive tasks (for recent reviews, see: Koenigs, Baskin-Sommers, Zeier, & Newman, 2011; Patrick, Venables, & Skeem, in press; Y. Yang & Raine, 2009).

Most such research with adults has either compared groups selected to be low or high in overall PCL-R psychopathy in volume or functional activation in brain regions of interest or has examined relations between overall PCL-R scores and volume or activation in particular regions. These studies have often revealed a wide variety of structural or functional differences in high-PCL psychopaths, most notably in the amygdala, hippocampus and parahippocampal gyri, anterior and posterior cingulate cortex, striatum, insula, and frontal and temporal cortex.

Findings for a few of these studies dovetail with psychobiological correlates of psychopathy discussed in preceding sections; for example, the finding that psychopaths show abnormalities in volume or reactivity of the amygdala—a brain structure implicated in fear and other negative emotions—is potentially consistent with the low-fear hypothesis. Nevertheless, in view of evidence that the amygdala plays a role in both positive and negative emotions (e.g., Hamann & Mao, 2002) and in attentional processing as well (e.g., Gallagher & Holland, 1994), other interpretations are possible. Moreover, important and pronounced inconsistencies in results are evident across imaging studies: In some studies, activity in particular regions appears *diminished* in psychopaths, whereas in others it is *enhanced* (e.g., Birbaumer et al., 2005; Müller et al., 2003). The reasons for these discrepancies require clarification. In part, they may reflect small sample sizes, varied laboratory tasks, or other methodological limitations that are common in current neuroscience on psychopathy.

Two brain-imaging studies of youth have yielded somewhat more consistent effects. These studies compared conduct-disordered children with the distinctive interpersonal-affective ("callous-unemotional") features of psychopathy to (a) healthy children or (b) children with attention deficit hyperactivity disorder (ADHD). These studies have identified reduced amygdala reactivity for conduct-disordered youth with callous-unemotional features during processing of fearful versus neutral faces, as compared to the other groups of youth (Jones, Laurens, Herba, Barker, & Viding, 2009; Marsh et al., 2008). This provides further evidence for the hypothesis that psychopathy entails a deficiency in fear or, perhaps, in emotional reactivity more broadly. This evidence is by no means definitive, however, given the small number of studies and lack of a conduct-disordered-only comparison group.

Dual-process model of psychopathy. Drawing in part on the evidence reviewed in the preceding two sections, the dual-process model (Fowles & Dindo, 2006, 2009; Patrick, 2007a; Patrick & Bernat, 2010) is an etiologic theory that posits distinct mechanisms underlying the interpersonal-affective (i.e., meanness/boldness) and antisocial (i.e., disinhibition) features of psychopathy. From the dual-process perspective, boldness and, to a lesser extent, meanness reflect a weakness in emotional reactivity, particularly defensive (fear) reactivity. This temperamental deficit is presumed to go hand-in-hand with differences in the functioning of affective-motivational systems including the amygdala and affiliated brain structures. This first process in the model, then, resembles the mechanism proposed by researchers such as Lykken and Hare as a complete explanation for psychopathy. But distinctively, the dual-process model postulates that a second temperamental process underpins the disinhibition component of psychopathy: *externalizing-propensity*, or the liability toward impulse-control problems of various types, including antisocial behavior and substance use (Patrick et al., 2005). This propensity may be associated with dysfunction in fronto-cortical brain systems that help to regulate emotion and guide decision making and action.

One foundation for the dual-process model consists of research on the distinctive correlates of the PCL-R and PPI-R factors. As we explained previously, although the PCL-R's factors are moderately correlated, they often diverge sharply in their relations with other variables. In fact, the two factors sometimes display cooperative (mutual) suppressor effects—that is, when the correlation between the two factors is statistically controlled, this magnifies the association of each factor with the other variable in opposite directions. For example, after controlling for the association between the PCL-R factors, the interpersonal-affective factor tends to be significantly inversely correlated with negative affectivity, whereas the antisocial factor is significantly directly correlated with negative affectivity (e.g., Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999; Hicks & Patrick, 2006). These effects often point to the existence of separable constructs embedded within a single measurement instrument (see Paulhus, Robins, Trzesniewski, & Tracy, 2004; for an opposing perspective, see Lynam, Hoyle, & Newman, 2006).

Evidence for the first of these dual processes—the temperamental disposition reflecting weak reactivity of the defensive (fear) system—comes from correlates of PCL-R Factor 1 (interpersonal-affective) and PPI-I (fearless dominance). In addition to the correlates reviewed earlier (e.g., dominance, low empathy, low negative emotionality; see "Modern Operationalizations" above), a number of investigators have found that the PCL-R and PPI-I interpersonal-affective factors are associated with reduced fear-potentiated-startle response during viewing of aversive picture stimuli (Benning, Patrick, & Iacono, 2005; Bertsch, Böhnke, Kruk, & Naumann, 2009; Patrick et al., 1993; Vaidyanathan et al., 2011; Vanman, Mejia, Dawson, Schnell, & Raine, 2003) and with deficient amygdala reactivity to aversive or fearful stimuli (Birbaumer et al., 2005; Gordon, Baird, & End, 2004; Marsh et al., 2008).

Evidence for the second process in the model—externalizing propensity—comes from studies that link this propensity to impaired performance on frontal-lobe tasks (e.g., Morgan & Lilienfeld, 2000; Peterson & Pihl, 1990) and reduced event-related-brain-potential responses in cognitive-processing tasks. For example, proneness to impulse-control problems is associated with reduced amplitudes of the P3 (P300) component of the event-related potential (Iacono, Carlson, Malone, & McGue, 2002; Patrick et al., 2006) and the error-related negativity (ERN), a fronto-cortical brain potential that occurs following errors in speeded-performance tasks. These deviations are hypothesized to reflect impairments in frontal brain circuits that operate to moderate emotional reactions and restrain behavior (Davidson, Putnam, & Larson, 2000; Patrick, 2008).

Two key questions for future research arise from the dual-process perspective. First, how should we conceptualize individuals with high overall scores on such instruments as the PCL-R or the PPI? Do high overall scores reflect the two processes (low dispositional fear, high externalizing propensity) operating in concert, as the model implies? Or are there subsets of high scorers whose psychopathy reflects one or the other process? Consistent with (but by no means proof of) the latter possibility, studies of psychopathy variants (see next section) reveal a subgroup of high PCL-R scorers who appear predominantly hostile and distressed rather than deficient in negative emotionality. This underscores some of the unresolved diagnostic controversies reviewed earlier. That is, if future research indicates that two subgroups of individuals can be identified with different psychobiologic correlates and etiological factors, does this signify two different disorders (rather than a single disorder underpinned by two different processes)?

Second, how does the dual-process model, which focuses on etiology, map onto the triarchic model, which focuses on description? Ostensibly, the low-fear mechanism is most relevant to boldness and the externalizing-propensity mechanism to disinhibition. But what mechanisms give rise to meanness? We *speculate* that temperamental dispositions involving either fearlessness or disinhibition (cf., "difficult temperament"; Hirshfeld-Becker et al., 2002) could contribute in differing ways to the emergence of callous, antagonistic tendencies (Patrick et al., 2009). But distinctive genetic and/or environmental influences could also contribute specifically to the appearance of meanness early in life (Patrick, 2010). Clearly, developmental-longitudinal studies that focus on the bases of these distinctive phenotypic facets in early temperament and their temporal course will be crucial to an understanding of what psychopathy is and where it comes from.

Are there different kinds of psychopathy?

An intriguing, even perturbing, contrast exists between construal of psychopathy in the scientific literature and its construal in settings in which psychopathy most clearly meets the "real world." If in theory and research psychopathy is a diversely defined disorder with a correspondingly unclear etiology, in most clinical and legal contexts psychopathy is instead construed and assessed as if it were a single thing: a homogeneous diagnostic category underpinned by a single causal process, such as fearlessness or deficient response modulation.

For example, Cleckley (1941, 1988) appeared to conceptualize psychopathy as a single syndrome even though he viewed the psychopathic individual as a hybrid creature whose "skein of apparent madness has been woven by a person of (technically) unimpaired and superior intellectual powers and universally regarded as sane" (p. 364; see Lilienfeld et al., in press, for a discussion). Notwithstanding Cleckley's unitary perspective, we review evidence in this section that there may be different kinds of psychopathy: not only "primary" or Cleckleyan, but also "secondary" psychopathy—and not only "unsuccessful" but also "successful" psychopathy.

Does "secondary psychopathy" exist? According to the dual-process model described earlier, psychopathy can be viewed not as a homogeneous disorder with a single cause but instead as reflecting processes that involve temperamental fearlessness, weak inhibitory control, or both (Fowles & Dindo, 2006, 2009; Patrick, 2007a; Patrick & Bernat, 2010). This alternative model is loosely related to a larger body of theory and research suggesting that psychopathy can be disaggregated into primary and secondary variants (see N. G. Poythress & Skeem, 2006; Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). That is, individuals with similarly high scores on commonly used measures of psychopathy appear to differ markedly from one another in emotional stability, and there are tentative hints that they may differ also in some etiologic factors. These findings are consistent with seminal theories regarding the heterogeneity of psychopathy. After highlighting these theories, we outline key studies, identify what are known to be the most consistent differences among psychopathy variants, and draw together the most important unresolved issues.

At the outset, we urge the reader to bear two important issues in mind. First, there is legitimate debate about whether secondary psychopathy is properly construed as "true" psychopathy as opposed to "pseudopsychopathy" (Poythress & Skeem, 2006; Skeem & Cooke, 2010b; see "Unresolved Controversies. . ." above). We unpack this debate at the end of the current section. We put "secondary psychopathy" in quotes in the heading to this section to convey our skepticism about whether these individuals are properly construed as psychopathic. Still, we use the widely applied term *secondary* rather than a replacement term (e.g., "low anxious" and "high externalizing") because (a) it seems premature to assign a replacement term, given the nascent state of rigorous empirical work on this topic; and (b) there is a rapidly growing body of theoretical and empirical work on secondary psychopathy.

Second, it is vital to conceptualize primary and secondary psychopathy not as entirely distinct categories but instead as

groups that occupy different areas of multidimensional space (i.e., space defined by the intersection of various traits). We refer to these groups as "variants" rather than "subtypes" because they share significant traits but differ across other key dimensions that include emotional stability or negative emotionality. Given that psychopathy itself appears to be a dimensional rather than categorical construct (see "What Is Psychopathy?" above), descriptions of primary and secondary variants may best be regarded as prototypes or idealized individuals (Tucker & Messick, 1964) that fall near the grand mean of each variant and manifest all of the variant's most defining characteristics. As Lykken (1995) observed, "[h]uman nature being as complex as it is, . . . even an ideal taxonomy will yield 'fuzzy' and overlapping types" (p. 42). Although we emphasize differences among variants, it is likely that we will continue to discover areas of overlap in both their surface characteristics and etiologic factors.

Conceptualizations of secondary variants. Around the time that Cleckley (1941) offered his conceptualization of what many now call primary psychopathy, Benjamin Karpman (1941, 1955) argued that there were two different variants of psychopathy. In many ways, Karpman's psychodynamic theory of primary and secondary psychopathy set a template for modern theories that span biological, evolutionary, interpersonal, and other paradigms (Blackburn, 1998; Lykken, 1995; Mealey, 1995; Porter, 1996).

Karpman sought to address a problem that—as we have noted already—persists today: the tendency to conflate persistent criminal and other antisocial behavior with psychopathy. According to Karpman (1948a), both primary and secondary psychopaths "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" (p. 457). However, the two variants arrive at psychopathic traits and antisocial behavior via different routes. In essence, Karpman proposed, primary psychopaths are born with an emotional deficit, whereas secondary psychopaths acquire an emotional disturbance in response to such adverse environmental experiences as parental rejection and abuse. For individuals whose psychopathy is secondary, "careful analytic scrutiny . . . will disclose that behind the wall of aggression, hostility, and unremitting criminal behavior is a full-fledged neurosis" (Karpman, 1955, p. 13). In Karpman's view, such differences have crucial implications. The secondary variant's behavior can be changed through treatment, but primary-variant psychopaths lack the capacity to improve, given that they ostensibly lack the emotional capacity to benefit from therapy.

According to Karpman, the two variants are difficult to distinguish based on psychopathic personality characteristics or antisocial behavior per se. He noted that secondary psychopaths, unlike their primary counterparts, may occasionally experience guilt, empathy, love, or a wish for acceptance (Karpman, 1941). But "in secondary psychopathy the guilt may lie deeply buried, overlaid for the most part with so much aggression and hostility that it is brought to surface only with great difficulty" (Karpman, 1949, p. 174). Secondary psychopaths could be distinguished, however, based on their greater vulnerability to anxiety and depression, anger and interpersonal aggression, and impulsivity (Karpman, 1955). For example, the primary psychopath may dispassionately plan his/her actions, rather than aggressing in the more characteristically "hot headed," impulsive, reactive manner of the secondary psychopath.

Like Karpman, Lykken (1995) viewed secondary psychopaths as more impulsive and prone to anxiety and other negative emotions than primary psychopaths. However, Lykken linked both primary and secondary psychopathy to biological predispositions. He saw each variant as reflecting an extreme temperament, with either impaired fear sensitivity or impaired reward sensitivity (see J. A. Gray, 1982). In contrast, "sociopaths" largely lack a psychopathic temperament but manifest behavior similar to psychopaths chiefly because of inadequate socialization or abuse. As noted earlier, Lykken viewed primary or Cleckleyan psychopathy as reflecting an innately fearless temperament. Given reduced fear sensitivity, he hypothesized that individuals of this type show little response to punishment signals and other cues that parents and teachers use in an effort to shape prosocial behavior and attitudes. Secondary psychopathy, in contrast, partially reflects innately elevated reward sensitivity. For these individuals, powerful appetitive urges often overwhelm normal inhibitions, resulting in antisocial behavior. Lykken's theory differs in key ways from Karpman's. Unlike Karpman's secondary psychopath, Lykken's secondary psychopath fails to inhibit behavior that results in punishment and would therefore—like the primary psychopath, although for a different reason—manifest poor passive-avoidance learning. Lykken also suggested that primary psychopaths would exhibit more interpersonal and affective traits of psychopathy (e.g., lack of guilt and empathy) than would secondary psychopaths.

Some of these themes overlap with Blackburn's (1998, 2006) interpersonal theory. Blackburn (2006) suggested that primary psychopaths possess fearless temperaments (*plus* elevated reward sensitivity) and that secondary psychopaths have elevated reward sensitivity (*plus* elevated fear sensitivity). However, Blackburn and Lee-Evans (1985) viewed psychopathic patterns as shaped partly by early learning. Blackburn (1998) described secondary psychopaths as particularly dysphoric, socially anxious, withdrawn, and submissive and primary psychopaths as socially dominant, potent, and confident. Secondary psychopaths, he believed, "may be predominantly borderline personalities" (Blackburn, 1996, p. 19), whereas primary psychopaths manifest more narcissistic traits.

Like Karpman, Mealey (1995) and Porter (1996) hypothesized that environmental factors played a greater role in the development of secondary than primary psychopathy, which they viewed as largely innate. Briefly, Porter (1996) argued that individuals acquire secondary psychopathy after experiencing parental abuse or abandonment, which leads the child

Table 4. Comparison of theoretical variants of secondary "psychopathy"

	Interpersonal-affective traits (F1)	Impulsive & antisocial features (F2)	Anxiety, fear, or broader negative emotionality	Primary etiologic emphasis
Karpman's neurotic	=	+	+	Environmental
Lykken's reward sensitive	−	=	+	Biologic
Blackburn's borderline	−	+	+	Environmental
Mealey's disadvantaged	−	=	+	Environmental
Porter's dissociative	=	=	+	Environmental

Note. −, =, +: less than, similar to, or greater than primary psychopathy

to "turn off" or "de-activate" their capacity to form emotional bonds, arresting the development of their conscience. As an adaptation to stressful experiences, the child dissociates and becomes progressively more emotionally blunted. Eventually, according to Porter's model, the secondary psychopath looks indistinguishable from the primary psychopath in terms of affective traits and antisocial behavior.

Mealey's (1995) evolutionary perspective is somewhat different. She viewed psychopathy as a mechanism for maintaining cheating, a deceptive strategy used in speciation and extinction contests in which an individual defects after signaling cooperation. Secondary psychopaths become psychopathic "phenocopies when [society's] carrying capacity of the 'cheater' niche grows" (p. 530). They pursue a life strategy that involves frequent (but not emotionless) antisocial behavior, largely because they are competitively disadvantaged in their ability to obtain resources and mating opportunities due to such factors as low socioeconomic status (SES), inconsistent discipline, and exposure to violence. Phenotypically, Mealey would expect primary psychopaths to manifest greater interpersonal and affective features of psychopathy (e.g., PCL-R Factor 1) than secondary psychopaths, who would more often manifest antisocial behavior (e.g., PCL-R Factor 2). She would also expect secondary psychopaths to come from poorer and more disadvantaged environments. Some key differences among theories of secondary psychopathy are shown in Table 4. Although the table specifies an "environmental" or "biological" primary etiological emphasis of the theories, it is important to recognize that environmental and biological sources of influence often interact and are difficult to disentangle.

Evidence for secondary psychopathy. A growing body of research suggests that individuals with high scores on widely used measures of psychopathy can be disaggregated into groups with characteristics that echo some theories of primary and secondary variants. Given space limitations, we focus on studies of adult male offenders assessed with the PCL-R (Blackburn, Logan, Donnelly, & Renwick, 2008; Hicks, Markon, Patrick, Krueger, & Newman, 2004; N. G. Poythress, Edens, et al., 2010; Skeem, Johansson, Andershed, Kerr, & Louden, 2007; Swogger & Kosson, 2007; Swogger, Walsh, & Kosson, 2008; Vassileva, Kosson, Abramowitz, & Conrod, 2005). After outlining three of the most rigorous studies, we integrate the findings of the larger body cited earlier to evaluate the current state of evidence for variants. We refer the reader to Skeem, Poythress, et al. (2003) for a comprehensive review of earlier clustering research that relied upon less rigorous techniques, but generally yielded similar findings.

In the first study, Hicks et al. (2004) selected 96 inmates with high PCL-R scores (>30). To test for subgroups, the authors applied model-based cluster analysis to inmates' responses to a self-report measure of general personality. They identified an "emotionally stable" primary subgroup and a larger "aggressive" secondary subgroup. Compared with a nonpsychopathic control group (n = 125) on the clustering variables, the primary subgroup manifested less stress reactivity and greater social alienation (generally, greater positive emotionality), whereas the secondary subgroup manifested greater aggression and social alienation and less social closeness (generally, greater negative emotionality and lesser constraint; all ds > .50). The authors then tested whether the psychopathic subgroups differed on theoretically relevant variables that were not used to cluster the groups. The subgroups did not differ in their alcohol use, but the secondary group reported significantly greater anxiety, more fights, and an earlier age of first arrest than the primary subgroup, and they obtained slightly lower scores on an intelligence screen and a measure of socialization designed to assess internalization of traditional (rather than antisocial) norms.

Hicks and colleagues (2004) interpreted the primary subgroup as largely consistent with Cleckley's conception of psychopathy (i.e., high PCL-R scores indicative of deviance in the presence of relatively high stress tolerance and a superficially normal interpersonal presentation). They speculated that the secondary subgroup reflected an adult manifestation of Moffitt's (1993) life-course-persistent offender, given the earlier onset of antisocial behavior, lower verbal intelligence, and generally maladjusted personality profile. Although seemingly different, these two subgroups were difficult to distinguish in terms of psychopathic features as indexed by the PCL-R. The secondary subgroup obtained higher scores than the primary subgroup on the PCL-R antisocial factor (d = 0.52), but there were no significant differences in total or interpersonal-affective factor scores.

In the second study, Skeem et al. (2007) selected 124 inmates with histories of serious violent offenses and high PCL-R scores (> 29). Their application of model-based cluster analysis to the PCL-R and a measure of trait anxiety revealed two groups. Compared to primary psychopaths, secondary psychopaths had significantly higher trait anxiety (d = .91) and lower PCL-R scores (Total = 32 vs. 34; d = –.98). Specifically, the secondary group scored lower on PCL-R interpersonal (d = –.63), affective (d= –.75), and lifestyle (d = –.62) facets but did not differ from the primary group on the antisocial facet, which chiefly represents criminal behavior and its early precursors. Across external-validation variables, the subgroups did not differ significantly in their narcissistic traits or impulsivity. However, as hypothesized, secondary psychopaths manifested more borderline personality features, poorer interpersonal functioning (e.g., irritability, withdrawal, lack of assertiveness), more symptoms of major mental disorder, poorer clinical functioning, and a trend toward greater potential treatment responsivity (as operationalized by a risk-assessment tool) than did primary psychopaths. The authors interpreted the primary group as largely consistent with Cleckley's conception, whereas the secondary group appeared consistent with Blackburn's theory of secondary psychopathy.

The third study (N. G. Poythress, Edens, et al., 2010) differs from the preceding two in that it involved a substantially larger offender sample (N = 691), subgrouping (using model-based cluster analysis) focused on individuals meeting criteria for a diagnosis of DSM-IV ASPD rather than psychopathy per se, and cluster variables were selected on the basis of theoretical considerations. In this study, scores on the three of the four PCL-R facets (interpersonal, affective, lifestyle) were included as cluster variables to test for the presence of psychopathy variants among individuals diagnosed with ASPD. The other cluster variables consisted of self-report measures of fearlessness, reward sensitivity, and childhood abuse. The analysis revealed four subgroups, three of which exhibited high scores on the three PCL-R facets. The latter psychopathic groups were termed "primary," "secondary," and "fearful." Compared with the primary subgroup on the clustering variables, the secondary subgroup differed significantly (*familywise* p < .01) in childhood abuse (d = 3.30), fearlessness (d = –.97), anxiety (d = .56), affective traits of psychopathy on the PCL-R (d = –.56), behavioral drive (d = –.60), and fun seeking (d = –.39). There were no significant differences in reward responsiveness (d = –.10), or interpersonal (d = –.30) or lifestyle (d = –.13) features of psychopathy on the PCL-R.

Compared with the primary subgroup on the external-validation variables, the secondary subgroup manifested greater internalizing and externalizing symptoms (d = .61, .41), marginally better passive-avoidance learning (d = .27), and greater impulsivity (d = .22), but not significantly less interpersonal dominance. Although statistical power for some analyses was limited, the authors also examined potential differences in institutional adjustment (for imprisoned subsamples) and treatment responsivity (for treated subsamples), given the policy relevance of these indices. During imprisonment, secondary psychopaths were more likely to incur infractions for both general and aggressive incidents. After release from prison, secondary psychopaths manifested a trend (p < .06) toward greater likelihood of rearrest for violent offenses. In substance-abuse treatment, secondary psychopaths manifested greater treatment motivation (d = .50 –.56), but did not differ significantly from primary psychopaths in disruptive behavior, skill mastery, end-of-treatment status (success/failure), or likelihood of rearrest during the year after treatment. The authors concluded that these variants conformed broadly to several theoretical descriptions of primary psychopathy and Karpman's theory of secondary psychopathy (more than Lykken's, Blackburn's, or Porter's secondary conception).

The third psychopathic group identified in this study was unexpected. Poythress, Edens, et al. (2010) cautiously interpreted this group as consistent with Mealey's conception of secondary psychopathy. This group manifested marked interpersonal and affective traits of PCL-R psychopathy (contrary to Mealey's conception), along with substantially greater fear (d = 1.79) than did the primary group. In partial keeping with Mealey's theory, this group was also more likely to be Black (z = 3.38), have large families of origin (z = 1.72), and obtain lower IQ estimates (d = –.27) than the primary group. However, because this group could also have arisen as an artifact of racial differences in responding to self-report measures of fear, it requires replication in other samples.

Together, these three studies and others like them (e.g., Blackburn et al., 2008; Swogger et al., 2008; Swogger & Kosson, 2007; Vassileva et al., 2005) provide fairly compelling support for the proposition that individuals with PCL-R scores in the psychopathic range can be disaggregated into variants that resonate with general theoretical conceptions of primary and secondary psychopathy. These variants often emerge despite variation across studies in basic design, methodological rigor, and the variables and analyses chosen to derive and validate groups. It is premature to determine which theories best match the variants identified and are most worthy of further evaluation—particularly for (overlapping) theories of primary psychopathy. If theories of secondary psychopathy could be arrayed on a dimension of "current promise," however, the general descriptive themes of Karpman's "neurotic" secondary psychopath would anchor one end, and the specifics of Porter's "dissociative" secondary psychopath, which find limited support (Poythress, Edens, et al., 2010; see also N. G. Poythress, Skeem, & Lilienfeld, 2006), would anchor the other.

Empirical consistencies and unresolved issues. At a more practical level, how can variants of psychopathy be differentiated most reliably? In general, there is little or no support for equating interpersonal and affective personality features as operationalized by Factor 1 with primary psychopathy and impulsivity and/or antisocial behavior as operationalized by PCL-R Factor 2 with secondary psychopathy. Although PCL-R total, factor, and facet scores are routinely included in

studies, there is little consistency in whether and how variants differ across them, and, in cases where differences have been reported, effect sizes are typically modest. Instead, two domains seem to distinguish between variants relatively robustly: trait anxiety and/or fearfulness (secondary > primary) and, perhaps to a lesser extent, hostility and/or aggression (secondary > primary). The first domain is consistent with the notion that secondary psychopaths are neurotic (Karpman, 1941) whereas primary psychopaths "are very sharply characterized by a lack of anxiety" (Cleckley, 1964, p. 271) or by fearlessness (Lykken, 1995). This difference is important. In broader research, high-anxious (secondary) psychopaths often fail to show the cognitive-affective deficits that characterize low-anxious (primary) psychopaths, including deficits in passive avoidance learning, modulation of responses to emotional and neutral stimuli, and fear-potentiated-startle response (e.g., Arnett, Smith, & Newman, 1997; Dindo & Fowles, 2011; Hiatt, Lorenz, & Newman, 2002; Lorenz & Newman, 2002; Newman & Schmitt, 1998; Newman, Schmitt, &Voss, 1997; Sutton, Vitale, & Newman, 2002).

With respect to the second domain, research suggests that secondary psychopaths' proneness to anxiety and fearfulness can signal a more widespread tendency toward negative affect and even serious psychopathology (both internalizing and externalizing disorders). In contrast, primary psychopathic groups seem quite emotionally stable. More specifically, both theory (Blackburn, 1996, 1998; Karpman, 1948a) and research (Hicks, Benning, Patrick, Blonigen, & Iacono, 2005; N. G. Poythress, Edens, et al., 2010; Skeem et al., 2007; cf. Vassileva et al., 2005 for mixed findings) suggest that secondary psychopaths are more prone to hostility, anger, and aggression than are primary psychopaths. Secondary psychopaths are also more likely to indicate histories of child abuse or trauma (e.g., Blackburn et al., 2008; N. G. Poythress, Edens, et al., 2010), which represent risk factors for violence and other criminal behavior (e.g., Farrington et al., 2006; Monahan et al., 2001).

Although it is tempting to draw causal conclusions from such indirect data, several unresolved issues mitigate against doing so. First, little is known about the etiologic factors that underpin phenotypic differences between primary and secondary variants of psychopathy. The few studies that have evaluated relations between childhood abuse and variants of psychopathy have assessed abuse retrospectively based on self-report, and current psychopathology (which disproportionately affects secondary psychopaths) can inflate reports of past abuse. Most theories of psychopathic variants emphasize distinctions that are broadly etiological (i.e., explaining psychopathy in terms of distal biological and/or environmental causal factors) or specifically mechanistic (i.e., decomposing psychopathy into proximal physical and/or mental parts and operations; see Betchel, 2008). In part, this emphasis is placed on such distinctions because understanding etiology and mechanisms is crucial to effective prevention and intervention. For these reasons, much more—and more rigorous—research on etiology and mechanisms is needed. Second, few studies have prospectively examined whether secondary variants are, as hypothesized, (a) at greater risk for future involvement in violence and (b) more amenable to treatment than are primary psychopaths. Although there is preliminary support for the hypothesis regarding violence (Kimonis, Skeem, Cauffman, & Dmietrieva, in press; N. G. Poythress, Edens, et al., 2010) and, to a lesser extent, treatment amenability (N. G. Poythress, Edens, et al., 2010; Skeem et al., 2007), more rigorous research with adequately sized samples is needed to address these policy-relevant questions.

As suggested earlier, the most important unresolved conceptual issue is whether so-called secondary psychopaths are genuinely psychopathic. There is at least preliminary evidence that these individuals (a) exhibit features such as excessive anxiousness and high rather than low fear that are wholly incompatible with classic psychopathy descriptions (e.g., Cleckley's; Lykken's) and (b) manifest intact performance on laboratory indices of affective and cognitive deficits that traditionally are viewed as central to psychopathy (see "Psychobiological Processes . . ." above). Given such troubling conceptual issues, Lykken (1995) explicitly reserved the term "sociopathic" for (phenotypic) psychopathic groups characterized by unique mechanisms and etiologic features.

This approach is consistent with efforts in the larger psychopathology literature to disaggregate a given diagnosis (e.g., schizophrenia) into subtypes when there is evidence that the diagnosis references not a single disorder but rather multiple disorders with different symptom constellations and different potential etiologic pathways. Identifying more homogeneous groups can facilitate the discovery of psychological and biological mechanisms that underpin a disorder and the development of effective treatment that targets those mechanisms.

Although a detailed discussion is beyond the scope of the present review, we invite the reader to consider this perspective: The "jingle fallacy" involves labeling two quite different things equivalently—in this case, labeling primary and secondary variants as psychopathic (see Thorndike, 1904). The fallacy introduces unique dangers in the present context because the label "psychopath" tends to invite assumptions from laypeople and professionals alike that an individual is an unfeeling, hardwired superpredator (e.g., Edens, 2006; Stevens, 2008; Vidal & Skeem, 2007; cf., Cox, DeMatteo, & Foster, 2010). This assumption is questionable for either variant (see "Common Misconceptions" above) but is particularly questionable for emotionally reactive secondary psychopaths. In short, the fallacy has important implications in practice and policy domains, which we will unpack in the final section of the monograph.

Does successful psychopathy exist? Cluster-analytic studies suggest that individuals with primary psychopathy are substantially more resilient to stress, emotionally stable, and psychologically healthy than their secondary counterparts. This finding is consistent with the possibility that distinctive components of psychopathy like boldness can be adaptive for

individuals, as Cleckley and some evolutionary scholars have suggested. In theory, such traits could promote attainment of wealth, power, and other indices of success in traditional society.

In other words, psychopathic tendencies may not invariably lead to chronic criminal behavior and psychosocial failure. Theorists have long distinguished between basic tendencies (underlying dispositions or source traits) and characteristic adaptations (concrete habits, attitudes, and skills that are a product of basic tendencies and the shaping forces of the environment; Cattell, 1957; Costa & MacCrae, 2003). For any basic tendency, there are many potential characteristic adaptations.

Lykken (1995) opined that the "hero and psychopath are twigs on the same genetic branch" (p. 118). That is, although both the hero and psychopath possess a fearless temperament (the basic tendency), the hero's exposure to highly effective socialization efforts and/or possession of greater resources (e.g., social capital, educational opportunities, intelligence) yield a characteristic adaptation that is "successful" in legitimate society. Clearly, however, the characteristic adaptation need not be heroic: "Psychopathic shortages of fear, conscientiousness, and altruism have been, alas, observed in businessmen, investment counselors, media personnel, actors, and entertainers, even in at least one former chief judge of the state of New York" (Lykken, 1995, p. 11; see also pp. 36–37). Successful psychopaths may excel in strategic behavior that is not technically illegal but violates social norms and the rights of others (friends, family, coworkers; Hall & Benning, 2006; see also Babiak, 1995; Babiak & Hare, 2006; Cangemi & Pfohl, 2009).

Little is known about successful psychopathy. In part, this is because the leading measure of psychopathy (the PCL-R) seems to assume there is chiefly one characteristic adaptation to psychopathic traits: violent and other criminal behavior (Skeem & Cooke, 2010a, 2010b). The vast majority of research has used the PCL-R and with criminal samples—by methodological fiat, yielding information only on unsuccessful psychopathy.

Although some efforts have been made to study successful psychopathy using alternative samples (e.g., community residents), many of these investigations reflect an assumption that successful psychopaths are successful only in the sense that they have avoided conviction and punishment for (inevitable) criminal behavior. As a group, the successful psychopaths recruited for such investigations often have histories of arrest and fail to attain what might be regarded as even average professional, economic, or social status. For example, Widom (1978) placed a classified ad in a local newspaper to recruit "charming, aggressive, carefree people who are impulsively irresponsible but are good at handling people and at looking after number one" (p. 83). The majority of her 28 community respondents were socioeconomically disadvantaged and had histories both of arrest and psychiatric treatment. In a more recent series of studies conducted with samples from temporary employment agencies, "successful psychopaths were defined as those scoring high on the PCL-R but who had never been *convicted* for any crime based on official criminal records" (Gao & Raine, 2010, p. 198, emphasis added). Some of these studies yield no significant differences between successful and unsuccessful psychopaths in SES, intelligence, psychopathology, and other theoretically relevant indicators (e.g., Ishikawa, Raine, Lencz, Bihrle, & Lacasse, 2001; Raine et al., 2004). The disjunction between high-functioning cases described in theoretical work (e.g., slick and coldhearted businessmen, egotistical and manipulative politicians) and the struggling antisocial groups recruited for these studies points to a need for alternative ways of operationalizing successful psychopathy (cf., Hall & Benning, 2006).

We noted earlier that the PPI-R is a well-validated alternative for operationalizing psychopathy—a self-report measure that does not directly reference criminal behavior. A variety of studies have been conducted with the PPI-R and undergraduate samples of convenience. As a group, these studies suggest that psychopathy in this nonreferred population manifests a pattern of correlates that is similar (but not identical) to that observed in the traditional criminal context (i.e., PCL-R and incarcerated offenders; Hall & Benning, 2006; Lilienfeld & Widows, 2005). For example, undergraduates who are high in fearless dominance fail to show the typical intensification of the startle response (e.g., blinking in response to noise blasts) when viewing unpleasant pictures (e.g., of a gun aimed at the viewer) rather than pleasant pictures (e.g., of an attractive model; Vaidyanathan et al., 2009). The startle response is directly relevant to psychopathy because there is evidence that it is an indicator of trait fear reactivity (Vaidyanathan et al., 2009), which, according to prominent theorists, is deficient among psychopaths (e.g., Lykken, 1995). Results like those obtained with college students also have been obtained in samples of young adult male twins (Benning, Patrick, & Iacono, 2005) and a more diverse sample of men (but not women; Justus & Finn, 2007) recruited from the community. In keeping with the dual-process model outlined earlier, these studies suggest that the most distinctive features of psychopathy—interpersonal and affective traits; boldness and/or meanness—are present in noncriminal samples and correlate with indices of stress immunity and emotional stability, particularly compared to (maladaptive) impulsive and antisocial features. Given that fearless dominance and impulsive antisociality are genetically distinguishable (Blonigen et al., 2005), individuals high only in fearless dominance theoretically could do quite well in life.

As this example suggests, it is probably impossible to obtain a type of sample that captures the entire range of variance on all the dimensions that may characterize psychopathy. Offender, community, and undergraduate samples can be expected to differ in their distribution of various dimensions of psychopathy. Research with a diverse array of populations is therefore necessary to yield data that provides insights into the nature and correlates of psychopathy.

This is particularly true for successful psychopathy. The college and community groups recruited for the studies reviewed above seem closer to the target population than

highly antisocial individuals recruited for past research. Arguably, however, they are still a far cry from high-functioning cases described in the classic literature on successful psychopathy. To our knowledge, no published studies have gone beyond problems with operationalization to address the most formidable barrier to studying successful psychopathy: recruitment difficulties. Base rates of psychopathy could be rare in samples of interest (e.g., CEOs, lawyers), and it is not clear that a sufficiently representative sample of busy, high-performing, self-interested individuals would be persuaded by the usual incentives to take part in research (e.g., modest payment, potential contribution to knowledge).

Some studies have been designed to circumvent such recruitment difficulties, however. For example, Mullins-Sweatt, Glover, Derefinko, Miller, and Widiger (2010) asked a variety of professionals (e.g., American Psychology-Law Society members, criminal lawyers, psychology professors) to think of someone they viewed as a successful psychopath and rate him or her on a general personality measure. Qualitatively, respondents ($N = 147$; 6% of those surveyed) generally seemed to describe individuals who were high functioning (e.g., a dean, a mayor, a "hero") and psychopathic (e.g., manipulative, lacking empathy), with some clear exceptions (e.g., lawyer respondents tended to describe criminal defendants). Personality ratings of these individuals were substantially less strongly correlated with a theoretical psychopathic profile ($r = .49$) than with theoretical antisocial ($r = .80$) and narcissistic ($r = .86$) profiles. Although there was substantial overlap with the psychopathic prototype in low agreeableness (e.g., straightforwardness, altruism, compliance), successful psychopaths were rated as higher in conscientiousness (e.g., self-discipline, deliberation) than the traditional (unsuccessful) prototype.

Using a strikingly different approach, Lilienfeld, Waldman, Landfield, Watts, Faschingbauer, and Rubenzer (2011) obtained expert ratings of 42 U.S. presidents' personality traits to estimate PPI-R scale scores, including fearless dominance (top scorers: T. Roosevelt, J. F. Kennedy, F. D. Roosevelt) and impulsive antisociality (top scorers: W. Clinton, L. B. Johnson, A. Johnson). Unlike impulsive antisociality (PPI-II), fearless dominance or boldness (PPI-I) was associated with superior independent ratings of presidential performance and leadership as well as with objective indicators of successful performance (e.g., initiating new legislation, being viewed as a world leader). Indeed, impulsive antisociality was associated with objective indicators of unsuccessful performance (e.g., impeachment resolutions, abuse of power). These relationships held after controlling for potential confounds including level of intelligence. This study is perhaps the first to provide evidence that at least some features of psychopathy, namely those relevant to boldness, can be identified among very-high-functioning individuals and relate directly to superior performance.

In summary, the strongest support for the notion of successful psychopathy comes from case studies and research based directly or indirectly on the PPI-R. Other research on successful psychopaths largely identifies (by design or default) individuals with criminal and other antisocial behavior who seem quite unsuccessful, by most yardsticks (SES, intelligence, etc.). The state of present research raises again the question of what psychopathy is, exactly. It seems that few scholars would regard exceptionally bold presidents, CEOs, and other leaders as psychopathic in the absence of other psychopathy-defining traits. Referring to the triarchic descriptive approach offered earlier, it is possible that boldness is more likely to combine with meanness to define successful psychopathy than is disinhibition, which relates to both poor functioning and criminal behavior. It is possible, however, that boldness coexists with a mild form of disinhibition (one that largely excludes negative emotionality and criminal behavior), much as Cleckley described.

Scholars have long been calling for more research of successful psychopathy (e.g., Lilienfeld, 1994). Decades later, we still need studies that explicitly define assumptions about the construct, apply multiple methods and measures to assess it, and directly recruit high-functioning psychopaths. These studies are needed because they could inform prevention and treatment efforts. For example, if basic psychopathic tendencies can be shaped into successful rather than criminal characteristic adaptations (Lykken, 1957), we could identify the "shaping" forces and then target them to prevent high-risk children from developing a criminal adaptation. These forces could draw on individual temperamental characteristics (e.g., conscientiousness, intelligence), contextual factors (e.g., SES, social capital), or socialization experiences with parents, educators, or treatment providers.

To what extent does psychopathy apply to children?

Nearly 20 years ago, the leading adult measure of psychopathy (the PCL-R) was extended downward developmentally to adolescents and children. Since that time, a large literature on "juvenile psychopathy" has accrued. Although the downward extension has touched children as young as age 3 (e.g., Kimonis, Frick, Fazekas, & Loney, 2006), most research focuses on prepubescent children and teenagers. This research has attracted considerable attention from practitioners and policymakers, given (a) an awareness that psychopathy measures predict violence and other crime; and (b) a demand to identify inalterably dangerous youth, in light of the U.S. juvenile justice system's increasingly punitive policies and rapid dissolution of protections traditionally afforded to children (for a review, see Muncie, 2008). Although researchers have long expressed hope that psychopathy assessments would be used to identify a subgroup of at-risk youth to target for intervention, recent legal reviews suggest that such assessments are most often used to determine whether a youth should be tried as an adult. Youth identified as psychopathic are typically portrayed as untreatable (Viljoen, MacDougall, Gagnon, & Douglas, 2010), despite evidence to the contrary (Caldwell, Skeem, Salekin, & Van

Rybroek, 2006; O'Neill, Lidz, & Heilbrun, 2003; Spain, Douglas, Poythress, & Epstein, 2004). Some of the assumptions and practical implications of psychopathy assessment, then, have been extended downward to youth, along with the measures.

Before unpacking these developments, we highlight relevant diagnostic issues and describe evidence on the validity of two leading conceptualizations of juvenile psychopathy. We then turn to a largely unanswered validity question with both research and policy implications: How many children and adolescents who appear psychopathic on extant measures will mature into adults with psychopathy? It is crucial to answer this question, especially if youth measures of psychopathy continue to be used to make legal decisions that have enduring consequences.

Recent evolution of efforts to parse conduct disorder. As was the case for adults (see "What is Psychopathy?" above), research interest in psychopathy for youth was sparked largely by the promise of reducing heterogeneity in a DSM diagnostic category largely defined by aggressive, criminal, and other antisocial behavior: In this case, conduct disorder as opposed to ASPD for adults. Generally, researchers hoped that measures of psychopathy would help to identify—among those with conduct disorder—a subgroup of youth with more serious and persistent antisocial behavior (for greater predictive utility) and more homogeneous affective, interpersonal, and motivational characteristics (for greater validity and to inform intervention efforts; see Kazdin, 1997; R. T. Salekin, 2006).

Early emphases on antisocial behavior and disinhibition. Currently, the DSM-IV allows for differentiation of two subtypes of conduct disorder: childhood onset (prior to age 10) and adolescent onset (at age 10 or after). This differentiation is based on Moffitt's (1993, 2006) research-based distinction between two types of antisocial behavior: (a) a life-course-persistent type with onset during childhood (thought to reflect a personality disorder that arises out of neurological deficits that interact with criminogenic environments) and (b) an adolescent-limited type with onset around puberty (thought to reflect a "maturity gap" that encourages largely normative and temporary mimicking of criminal behavior). This theory has some limitations (see Laub & Sampson, 2003). For example, Moffitt's own lab has identified a third, large class of "childhood limited" conduct disorder (comprising 24% of male children; Odgers et al., 2008), raising questions about the diagnostic utility of age of onset. Nevertheless, there is substantial evidence for a life-course-persistent subtype (Farrington et al., 2006; Lynne-Landsman, Graber, Nichols, & Botvin, 2011; Moffitt, 2007). For example, in a 30-year prospective birth-cohort study of over 1,000 individuals from Dunedin, New Zealand, children who were empirically classified in the life-course-persistent group manifested poorer adult outcomes than did those in both adolescent-limited and childhood-limited groups. This finding held not only in the domain of violence but also in the domains of mental health, physical health, and economic status (Odgers et al., 2008; see also Moffitt et al., 2002).

In an effort to better identify life-course-persistent offenders among children with early-onset conduct disorder, Lynam (1996; Moffitt & Lynam, 1994) proposed a focus on co-occurring ADHD, a condition marked by restless, inattentive, and impulsive behavior. He argued that co-occurring ADHD and conduct disorder would identify the "fledgling psychopath" (Lynam, 1998). On one hand, there is evidence that children with these co-occurring disorders behave in a more aggressive and antisocial manner than do those with conduct disorder alone (e.g., Lilienfeld & Waldman, 1990; Loeber, Brinthaupt, & Green, 1990). There is some evidence that they also manifest deficits in behavioral inhibition similar to those observed in psychopathic adults (Lynam, 1998). On the other hand, children with co-occurring ADHD are not particularly distinct from the larger group of those with early-onset conduct disorder. In fact, in clinic-referred samples, the vast majority of young children with conduct disorder also meet criteria for ADHD (80%, Greene et al., 2002; see also Abikoff & Klein, 1992). Moreover, children with co-occurring ADHD may be no more likely than those with conduct disorder alone to manifest either the core interpersonal and affective features of psychopathy or associated deficits in emotional processing (e.g., Michonski & Sharp, 2010).

New emphasis on callous-unemotional features. In contrast to the earlier emphasis on indices of disinhibition, affective features of psychopathy play a central role in proposed modifications to the diagnostic criteria for Conduct Disorder in DSM-V. Specifically, "With Significant Callous-Unemotional Traits" has been proposed as a specifier. This specifier would be attached when youth meeting criteria for conduct disorder manifest at least two of four of the following features for at least 1 year across settings: lack of remorse/guilt, callousness/lack of empathy, shallow or deficient affect, and lack of concern about performance (Frick & Moffitt, 2010). As shown below, these callous-unemotional features relate to fearlessness and/or low anxiety, constructs emphasized in various key theories of (adult) psychopathy (see, e.g., Blair, 2006; Cleckley, 1941; Fowles, 1980; Hare, 1965a, 1965b; Lykken, 1995; Patrick, 1994).

If the goal is to disaggregate conduct disorder, a callous-unemotional subtype should add incremental utility to the life-course-persistent subtype. Despite early assumptions to the contrary (e.g., Blair, Mitchell, & Blair, 2005; Forth & Burke, 1998), the callous-unemotional or psychopathic subtype is not synonymous with the life-course-persistent offender. Instead, some scholars speculate that callous-unemotional features identify a subgroup of early onset, conduct-disordered youth with quite different characteristics from those of the larger group, including more boldness and/or meanness, more aggression, less disinhibition, less negative emotionality and emotional reactivity, fewer intellectual impairments, and less exposure to poor parenting practices (for reviews, see Frick & White, 2008; R. T. Salekin, 2006).

Integration: dual developmental pathways or variants? Fowles and Dindo (2006) hypothesized that callous-unemotional and life-course-persistent subtypes of conduct disorder mark dual

developmental pathways to adult psychopathy. As shown above, the groups differ—at least superficially—in manners that are theoretically consistent with adult primary psychopathy (or callous-unemotional, marked by low fear or anxiety) and adult secondary psychopathy (or life-course-persistent, marked by behavioral disinhibition and emotional dysregulation). Indeed, studies of youth with high scores on multifaceted measures of juvenile psychopathy (as opposed to measures of callous-unemotional features only) often reveal two subtypes that are consistent with those reviewed earlier for adults (e.g., Kimonis et al., in press; Tatar, Cauffman, Kimonis, & Skeem, in press). As shown next, however, the primary subtype generally is more consistent with leading conceptualizations of—and policy-relevant assumptions about—psychopathy than is the secondary subtype.

Leading conceptualizations of juvenile psychopathy: description and evidence. As the proposed modification to the DSM-5 criteria for conduct disorder suggests, the leading conceptualization of juvenile psychopathy (Frick, 2009) emphasizes callous and unemotional traits (the proposed specifier) but clearly includes criminal and antisocial behavior as well (given the nesting within conduct disorder). According to this perspective, a person who is a juvenile psychopath is a youth with conduct disorder who also manifests callous and unemotional traits. This person-centered conceptualization is rooted in—but not identical to—the more general trait- or dimension-centered perspective. According to the latter perspective, the construct of juvenile psychopathy is the same as adult psychopathy, with essentially the same interpersonal, affective, and behavioral features. In this section, we describe and outline evidence for both views.

Juvenile and adult psychopathy as one. The dimension-focused perspective largely originates from measures. Although one recent measure shows considerable promise (see Andershed et al., 2002), the most established and widely used measures of juvenile psychopathy are the Youth Version of the Psychopathy Checklist (PCL:YV: Forth et al., 2003) and the Antisocial Process Screening Device (APSD; Frick et al., 1994; Frick & Hare, 2001). Both the PCL:YV and APSD are 20-item adaptations of the leading adult measure of psychopathy, the PCL-R. Chiefly, the items and scoring criteria were modified to remove developmentally inappropriate content (e.g., "many short term marital relationships") and to better reference youths' peer, family, and school experiences (e.g., the "irresponsibility" item references lack of concern about schoolwork). The guiding assumption for these measures is that psychopathy is manifested in broadly similar features, whether one is 11 or 33 years old. As one might expect given the adult literature (see "Does 'Secondary Psychopathy' Exist?" above), youth identified as psychopathic on these measures appear heterogeneous in their emotional reactivity and other characteristics (e.g., Kimonis, Cauffman, Goldweber, & Skeem, 2011; Vaughn, Edens, Howard, & Smith, 2009).

Despite these general similarities, there are administrative differences between the PCL:YV and APSD. The APSD can be completed by parents and teachers as a rating scale (for 6–13 year olds) or by adolescents as a self-report scale (for 13–18 year olds). In contrast, like the PCL-R, the PCL:YV (for 13–18 year olds) is meant to be completed by a highly trained rater who scores the items based on a semistructured interview with the youth and a review of criminal and other records.

Not surprisingly, given their derivation from the PCL-R, the PCL:YV and APSD often manifest two-factor and either three- or four-factor structures that largely are in keeping with their parent measure (for a review, see Kotler & McMahon, 2010). Specific scales emphasize interpersonal dominance (narcissism), affective deficits (callous-unemotional traits), disinhibition, and (for the PCL:YV) criminal and other antisocial behavior (e.g., Fite, Greening, Stoppelbein, & Fabiano, 2009; R. T. Salekin, Brannen, Zalot, Leistico, & Neumann, 2006).

Across samples of youth and adults, measures of psychopathy often exhibit similar associations with other variables. For example, in the personality domain, psychopathy measures are usually associated with high antagonism (e.g., suspiciousness, deceptiveness) and low constraint (e.g., impulsivity, nontraditional values) in both adults and adolescents, although they appear more selectively associated with high neuroticism (e.g., angry hostility, vulnerability, depression) in adolescents (Lynam, 2010; Lynam & Gudonis, 2005). In the emotional-processing domain, there are preliminary suggestions that higher scores on juvenile-psychopathy measures—particularly scales that measure affective or callous-unemotional features—are associated with less responsiveness to negative emotional stimuli on laboratory tasks, including attentional orientation to pictures depicting distress (e.g., a crying face; Kimonis et al., 2006, Kimonis, Frick, Munoz, & Aucoin, 2008) and speed in recognizing negative emotional words as words in lexical-decision-making tasks (e.g., Loney, Frick, Clements, Ellis, & Kerlin, 2003). These results are based on a small number of studies with methodological limitations but overlap with those found for adults (see "What Causes Psychopathy?" above). In the behavioral domain, although there are some differences across studies and subsamples, measures of juvenile psychopathy generally are just as predictive of violence and other criminal behavior as are their adult counterparts (Edens & Campbell, 2007; Edens, Campbell, & Weir, 2007; Leistico et al., 2008). In fact, as is the case with adults, juvenile-psychopathy measures can be as predictive as purpose-built, multifaceted risk-assessment tools (Edens et al., 2007; Olver, Stockdale, & Wormith, 2009; see "Psychopathy, Crime, and Violence" below). But also as for adults, the predictive utility of psychopathy measures for youth derives more from scales assessing impulsive and antisocial behavior than from scales assessing interpersonal and affective features per se (Edens et al., 2007; Leistico et al., 2008; Olver et al., 2009; Vincent, Odgers, McCormick, & Corrado, 2008). In a possible departure from the adult literature, evidence is mixed for whether measures of juvenile psychopathy add incremental

predictive utility to general risk factors such as past antisocial behavior and substance abuse (for offenders, compare Douglas, Epstein, & Poythress, 2008; Langstrom, N., & Grann, 2002; with Gretton, Hare, & Catchpole, 2004; Schmidt, McKinnon, Chattha, & Brownlee, 2006).

Given general similarities in the structure and correlates of measures, some scholars view the downward extension of psychopathy from adults to children and adolescents as a success (e.g., Lynam, 2010; R. T. Salekin, Rosenbaum, & Lee, 2008). Although acknowledging such similarities, others are less sanguine about the downward extension given critical unanswered developmental questions about the approach (see below) and empirically demonstrated weaknesses of the extension (e.g., Kotler & McMahon, 2010; see also Edens & Vincent, 2008; Skeem & Cauffman, 2003; Vincent & Hart, 2002).

With respect to weaknesses, although studies have yielded mixed results, measures of psychopathy generally tend to be more positively correlated with anxiety, depression, and other indices of negative emotionality among adolescents than they do among adults (for a review, see Sevecke & Kosson, 2010). Counter to most major conceptualizations of (primary) psychopathy, then, youth categorized as psychopathic are probably more anxious and dysphoric (secondary?) than their counterparts. In addition, recent studies indicate that widely used measures of juvenile psychopathy are relatively ineffective in predicting long-term offending (Cauffman, Kimonis, Dmitrieva, & Monahan, 2009; Edens & Cahill, 2007; Stockdale, Olver, & Wong, 2010; cf., Gretton et al., 2004). For example, based on a sample of 116 youthful offenders (mean age = 16) followed for an average of 7 years, Stockdale et al. (2010) found that the PCL:YV predicted general recidivism prior to age 18 quite well (area under the receiver operating characteristic curve, or AUC = .79)—at levels often observed with purpose-designed risk-assessment tools. But it predicted general recidivism during adulthood (after age 18) quite poorly (AUC = .63)—that is, at levels no better than those reported for unaided clinical judgment (Skeem et al., 2005). The fact that so-called psychopathic youth may not reliably continue criminal behavior into adulthood has both theoretical and applied implications: It both (a) suggests that making psychopathy part of the diagnostic criteria for conduct disorder may not improve our ability to identify a group of homogeneous children and adolescents who are likely to mature into antisocial adults (see "Efforts to Parse Conduct Disorder" above) and (b) contradicts assumptions that underpin dominant legal uses of juvenile-psychopathy measures, including whether to transfer youth to the adult criminal justice system (Viljoen et al., 2010).

Juvenile psychopaths as conduct-disordered youth with callous-unemotional features. For the dimensional perspective described above, scores across subscales of the PCL:YV and ASPD are typically combined into a single indicator, just as they are for adults with the PCL-R. This approach differs somewhat from the second leading perspective on juvenile psychopathy, which is more person centered.

The person-centered perspective largely originates from research indicating that callous-unemotional features of psychopathy identify a relatively homogeneous subgroup of youth with conduct disorder (see Frick, 2009; Frick & White, 2008). In an early and oft-cited study of 120 clinic-referred youth (mean age = 9), Christian, Frick, Hill, and Tyler (1997) applied cluster analysis to APSD scores and conduct-disorder symptom counts to identify four subgroups. Two of these subgroups—labeled "impulsive" (n = 29) and "psychopathic" (n = 11) manifested substantial antisocial behavior. Compared with the impulsive subgroup, the psychopathic subgroup manifested greater callous-unemotional features, intelligence, conduct-disorder symptoms (aggression and delinquency), and histories of school suspensions and police contacts.

Subsequent findings suggest that callous-unemotional features can characterize a subgroup of youth with conduct problems that displays distinctive features. For example, studies indicate that children with callous-unemotional features (typically, in combination with antisocial behavior) tend to exhibit both emotional deficits (see above) and reduced sensitivity to punishment when a reward-dominant response set has been primed (for a review, see White & Frick, 2010). When controlling for antisocial behavior, callous-unemotional traits tend to be associated with low anxiety and fearlessness (e.g., Frick et al., 1999; Pardini, Lochman, & Powell, 2007). This is consistent with the adult literature, which suggests that adults with high PCL-R scores *combined* with low anxiety—who might be viewed as primary psychopaths—manifest deficits in response modulation (see "What Causes Psychopathy?" above). Moreover, callous-unemotional features generally moderate—specifically, weaken—the association between harsh and inconsistent parental discipline and antisocial behavior (Edens, Skopp, & Cahill, 2008). Notably, however, parenting can make a difference with these children; in one study, effective parenting practices (e.g., consistent, nonauthoritarian discipline) predicted reduced callous-unemotional features 4 years later (Frick, Kimonis, Dandreaux, & Farrell, 2003).

It is often assumed that callous-unemotional features designate a subgroup of conduct-disordered youth that is more likely to engage in aggressive, criminal, and other antisocial behavior than conduct-disordered youth without such features. Evaluating this assumption, however, is challenging because (a) children in this subgroup often have not only callous-unemotional features but also more serious impulsivity and antisocial behavior than their conduct-disordered counterparts (e.g., Christian et al., 1997; Frick, Cornell, Barry, Bodin, & Dane, 2003) and (b) callous-unemotional features are generally less predictive of future aggression, crime, and other antisocial behavior than are impulsivity and past antisocial behavior (Corrado, Vincent, Hart, & Cohen, 2004; Frick, Bodin, & Barry, 2000; White & Frick, 2010). In other words, it is often not clear whether more serious past misbehavior (rather than callous-unemotional features per se) is driving most of the prediction of future misbehavior.

A number of studies create groups of children based on extreme scores on scales that assess callous-unemotional features and/or conduct-disorder symptoms. These studies often are cited in support of the utility of callous-unemotional features for predicting aggressive and other antisocial behavior. However, even in these studies, results often are not significant after controlling for initial differences between groups in antisocial behavior (e.g., Frick, Cornel, et al., 2003), in which only one effect, of many tested, remained significant). In contrast, dimensional studies (i.e., studies that examine scores on measures of callous unemotionality and conduct disorder) suggest that callous-unemotional features *add* modest predictive validity to impulsivity and past antisocial behavior (e.g., Pardini, Obradović, & Loeber, 2006; R. T. Salekin, Ziegler, Larrea, Anthony, & Bennett, 2003). Moreover, a recently developed self-report tool, the Inventory of Callous-Unemotional Traits, does not reference aggressive or other antisocial behavior, but preliminary evidence suggest that it relates to self-reported aggression and delinquency (Kimonis, Frick, et al., 2008; Roose, Bijttebier, Decoene, Claes, & Frick, 2010).

Given the practical importance of this issue for the person-centered perspective and the current state of the science, it would be useful to meta-analytically combine prospective studies to test whether callous-unemotional features and conduct problems *interact* statistically to predict violent and other criminal behavior. For adults assessed with the PCL-R, interpersonal and affective traits of psychopathy (Factor 1) do not exponentially increase the likelihood of violence in conjunction with impulsive and antisocial features (Factor 2; Kennealy, Skeem, Walters, & Camp, 2010). Finding a disjuncture on this point for children or adolescents would not only strengthen the person-centered perspective on juvenile psychopathy but would also inform developmental hypotheses to guide future research.

Stability of psychopathic features from childhood to adulthood. The evidence reviewed above indicates that measures of adult psychopathy that have been extended downward to children and adolescents often (with some very important exceptions) relate to other variables in a theoretically coherent manner. (This is true of both dimensional—i.e., full measure—and person-centered—i.e., callous-unemotional/conduct disorder—approaches, although one might speculate that the latter group isolates a more heterogeneous group of youth.) Put simply, it seems that researchers are capturing something that looks like psychopathy. However, we lack the necessary collateral evidence that what we are assessing in children is indeed psychopathy, a personality disorder that will remain quite stable within individuals into adulthood (Hart, Watt, & Vincent, 2002).

Basic principles of developmental psychopathology suggest that (a) psychopathic traits can be expressed differently across developmental stages (e.g., impulsivity and irresponsibility may be more diagnostic of psychopathy in adulthood than adolescence, when such features are relatively normative; Seagrave & Grisso, 2002), (b) adult psychopathy may be the product of different developmental pathways (e.g., callous-unemotional and "life-course persistent" pathways; Fowles & Dindo, 2006), and/or (c) what appears to be psychopathy during childhood or adolescence may predispose to outcomes other than adult psychopathy (see Hart et al., 2002). Similarly, general personality research indicates that (a) the rank order of individuals within a group in their level of a given trait is only moderately stable in childhood and adolescence, becoming highly stable by age 30 and very highly stable by age 50; and (b) the basic shape of an individual's personality profile can be fairly stable by early adolescence, but there is considerable change in his or her level of traits and the scatter among them well into adulthood (for a review, see Clark, 2007). Considering these principles and findings in light of the adverse effects of labeling, diagnoses of personality disorders should be applied to children and adolescents only "in those relatively unusual instances in which the individual's particular maladaptive personality traits appear to be pervasive, persistent, and unlikely to be limited to a particular developmental stage" (APA, 1994, p. 631).

Perhaps because of such admonitions, we are not aware of any recent, major efforts to extend personality disorders other than psychopathy downward developmentally (i.e., from adults to youth). This is remarkable, given that psychopathy is a particularly stigmatizing disorder—one that invites mistaken assumptions that children are fundamentally (and inalterably) "different" and "dangerous" (see "Common Misconceptions About Psychopathy" above). Measures of psychopathy are being used to make long-term legal decisions about adolescents (e.g., waiver to adult court; see "How is the Concept of Psychopathy Used in the Real World?"). For all of these reasons, we believe the bar for stability of psychopathy across developmental periods should be set higher than some researchers view as fair (see e.g., Frick, 2009; R. T. Salekin, 2006).

Thus far, there is little compelling longitudinal evidence that individuals who manifest psychopathic features in childhood will remain highly psychopathic through developmental transitions into adolescence and then adulthood. Most studies focus on relatively short time intervals and assess rank ordering of psychopathic traits within groups rather than changes in these traits over time within individuals. The results of several small studies suggest that measures of juvenile psychopathy show moderate to high rank-order stability from late childhood to early adolescence, provided that the same informant (e.g., a parent) repeatedly completes the measures (for a review, see Andershed, 2010). For example, Frick, Kimonis, et al. (2003) administered the APSD annually to a sample of 98 nonreferred 3rd–7th graders and found high rank-order stability within parental ratings across a 4-year period (intraclass correlation coefficient or ICC > .70); at the individual level, however, only 30% of children who initially were very high in callous-unemotional traits remained very high across that period.

There is less compelling evidence that measures of juvenile psychopathy are highly stable from early- or mid-adolescence into adulthood. For example, Lynam, Caspi, Moffitt, Loeber, and Stouthamer-Loeber (2007) used a sample of 200 individuals to study the relation between a measure of juvenile psychopathy rated by mothers at age 13 and a screening version of the PCL at age 24. Over this 10-year period, there was relatively poor stability (ICC = .27), and most of the shared variance was between the measures' Impulsive- and Antisocial-Behavior scales. Of adolescents who obtained extremely high psychopathy scores (i.e., top 5%) at age 13, less than one third (29%) were classified as psychopathic at age 24. Moreover, Cauffman, Skeem, and Dmitrieva (2011) administered the PCL measures repeatedly to approximately 200 adolescents and 100 adults. Over a 2-year period, the rank-order stability of adolescents' PCL:YV scores was moderate (ICC = .34). More importantly, adolescents' PCL:YV scores decreased significantly more than adults' PCL-R scores over time.

In summary, although there clearly is some rank-order stability in psychopathic features across development, a sizeable proportion of children and adolescents who appear psychopathic at one time point will not remain so later in development. When imported into practical and legal arenas, these findings raise important ethical concerns about the possibility of misclassifying youth as psychopathic. We return to these issues in the final section of this monograph. Before we do so, we review two remaining topics of major practical and legal relevance: psychopathy's association with crime and violence and whether psychopaths respond to psychological treatment.

Is psychopathy linked with violence and other criminal behavior?

A relatively small proportion of the population (5–7%) is responsible for the majority of crimes, including violent crimes (Piquero, Farrington, & Blumstein, 2003; Wolfgang, Figlio, & Sellin, 1972). The personality characteristics of individuals who repeatedly commit criminal behavior defy homogeneous classification (Blackburn, 1986; Blackburn et al., 2008; Kirkpatrick et al., 2010; N. G. Poythress, Edens, et al., 2010). This strongly suggests that psychopathy is not *the* personality disorder that underlies criminal behavior.

Nevertheless, because the PCL-R and its derivatives have been shown to predict violent and other criminal behavior, these measures are often applied by forensic psychologists as risk-assessment tools to inform legal decisions that turn upon future dangerousness (see "How is the Concept of Psychopathy Used in the Real World?" below). As we will see, research has established that measures of psychopathy predict criminal behavior, but there is little understanding as yet of *how* psychopathy contributes causally and under what circumstances. In this section, we review research on how well measures of psychopathy predict violence and other criminal behavior, whether they predict such behavior more accurately than purpose-built risk-assessment tools, and the extent to which they provide unique information about criminal behavior. Before doing so, we provide a context for digesting this information.

Context

Methodological context. Most research on this topic is based on samples of criminal offenders and applies the PCL-R and its derivatives. Earlier, we defined criminal psychopathy in terms of meanness and severe disinhibition. Psychopathic criminals probably represent a subset of chronic offenders who more exclusively manifest severe disinhibition. Also noted earlier, Factor 2 or antisocial scales mostly tap disinhibition, which is not specific to psychopathy. Rather than indicating a unique influence of psychopathy on crime, predictive utility for antisocial-factor scores may instead be viewed as reflecting more generic risk factors for offending like antisocial behavior. These variables have predictive accuracy mainly because past—in this case crime-related—behavior predicts future behavior.

The PCL-R and its derivatives (the PCL:SV and PCL:YV) have an important design feature that must be borne in mind when interpreting the results of studies on its predictive utility. The use of criminal behavior as part of the assessment of PCL-psychopathy creates criterion contamination—that is, the criterion behavior is included in the predictor (see Lynam & Gudonis, 2005; Skeem & Mulvey, 2001; Swogger & Kosson, 2007). Although this issue is particularly salient for the antisocial factor items (e.g., Criminal Versatility, Adult Antisocial Behavior) criminal behavior also may be used to rate Factor 1 items that assess interpersonal-affective features of psychopathy. For this reason, at best, the first step to building an argument that psychopathy per se predicts criminal behavior is to demonstrate that PCL-R interpersonal-affective scale scores can do so, independently of antisocial scale scores. The PPI-R does not share this problem of rating psychopathy directly, in part, from criminal behavior (see "Modern Operationalizations" above).

Practice context. A variety of alternatives to the PCL-R and other measures of psychopathy are available for assessing risk, to inform legal decisions made routinely in the criminal justice system. Indeed, a variety of tools have been designed specifically to estimate the likelihood that an individual will commit new acts of criminal behavior. The simplest, most inexpensive, and in some cases most accurate purpose-built risk-assessment tools are computer-generated or rapidly hand-scored algorithms based on previous-validated indices of offenders' past behavior (e.g., age of first conviction, current age, gender, number of previous convictions; see for example the UK's Offender Group Reconviction Scale (version 2); Copas & Marshall, 1998; New Zealand's RoC*RoI; Bakker, Riley, & O'Malley, 1999; Static-99 for sex offenders; Hanson & Thornton, 1999). At the other end of the spectrum are structured clinical-judgment tools that can be scored and then used actuarially, such as the Violence Risk Scale (VRS; S. Wong & Gordon, 2006). These tools—which may be viewed as encompassing the PCL-R/SV—are time consuming and expensive, since they require a very highly trained user, extensive data collection

before scoring even begins, and rigorous standards to ensure that scoring is reliable and valid. Pragmatically, to justify the use of these tools over those toward the other end of the continuum requires that they provide better information. Are they more accurate, making them suited to particularly important decisions (e.g., imposition of the death penalty)? Or do they provide information additional to how dangerous the person may be, such as indications about how to mitigate that risk on a day-to-day basis, or the type of interventions that could reduce it?

From the standpoint of the research literature on the PCL-R, does its popularity as the "tool of choice" for assessing risk make sense? To answer this question, we first review research on its predictive validity and then compare those results with other risk-assessment tools.

How well do psychopathy measures predict criminal behavior? Several meta-analyses have examined the predictive validity of the PCL-R/SV and also compared them with other risk-assessment instruments. They are built on individual studies that report correlations between scores from PCL-R/SV assessments conducted in some form of institution with dichotomous outcome variables: mainly, institutional misbehavior, postrelease crime, or postrelease violent crime. Overall, the meta-analytic results are similar for all three outcomes: weighted mean effect sizes in the small to medium range: $r = 0.23$ to 0.30[3] (M. A. Campbell, French, & Gendreau, 2009; Gendreau, Goggin, & Smith, 2002; Guy, Edens, Anthony, & Douglas, 2005; Hemphill, Hare, & Wong, 1998; Leistico et al., 2008; R. Salekin, Rogers, & Sewell, 1996; Singh et al., in press; Walters, 2003; M. Yang, Wong, & Coid, 2010).

Based on individual studies rather than meta-analyses, the PPI/PPI-R similarly significantly predicts institutional misconduct, criminality, and violence with adult offenders and also, more broadly, with forensic psychiatric samples, community samples, and youth (Camp, Skeem, & Barchard, 2011; Edens & McDermott, 2010; Edens, Poythress, Lilienfeld, & Patrick, 2008; Edens, Poythress, Lilienfeld, Patrick, & Test, 2008; Uzieblo, Verschuere, Van den Bussche, & Crombez, 2010; Vaughn, Howard, & DeLisi, 2008).

The PCL-R/SV is less successful in predicting sexual-reoffending risk than other outcomes (Barbaree, Seto, Langton, & Peacock, 2001; Hanson & Morton-Bourgon, 2004; Hare, 2003) but predicts *general* recidivism in sex offenders about as well as in other offenders (Barbaree et al., 2001; Hanson & Morton-Bourgon, 2005).

Do measures of psychopathy predict such behavior better than purpose-built risk assessment tools? The previous section suggests that using the PCL-R/SV as a risk-prediction tool is empirically justified; it shows moderate predictive validity for several important criminal outcomes. But does this finding account for its popularity? How does it compare with other risk-prediction tools?

This question can be answered by examining studies that pit against each other tools developed using diverse approaches: some theoretical, some empirical. Meta-analyses that compare risk-prediction instruments for adults and youth offenders find that the PCL scales are about equivalent in predictive accuracy to other commonly used measures, whether we look at general, violent, or sexual recidivism (Barbaree et al., 2001; Kroner & Mills, 2001; Olver et al., 2009; Singh et al., in press; M. Yang et al., 2010).

In fact, each of these instruments—regardless of the purpose for which it was developed (e.g., crime prediction, violence prediction, psychopathy assessment) or whether the tool's development was empirically or theoretically driven—draws substantially on shared variance for its predictive validity. In an innovative approach known as the "coffee can study," Kroner, Mills, and Reddon (2005) examined this contention, by comparing the PCL-R and three other risk-assessment instruments with four new scales. To construct the new scales, they placed all of the items from the original scales into a 1 kilogram coffee can, then drew them back out into four new piles. In effect they created four scales randomly derived from items commonly used to measure criminal risk. For men released from prison, there were no significant differences between the eight measures—the four original scales and the four newly created—in ability to predict new convictions. The results fit with the meta-analytic findings for risk assessment in general.

So the popularity of PCL-R/SV is not due to superior accuracy in predicting future criminal risk; it is comparable to various other tools and methods, some of which are markedly quicker, cheaper, and easier to use. Likely it is favored partly because of its age; the PCL-R is among the oldest of the instruments validated for use in actuarial criminal risk assessments, and its large research base continues to grow. A PsycInfo search of PCL AND (crimin* or violen*) revealed 142 scholarly articles published in 2010 alone.

Practitioners particularly favor the PCL-R when undertaking violence-risk assessments (Edens, 2006; Khiroya, Weaver, & Maden, 2009). Here, their preference may also continue to be influenced by the puzzling—and today clearly erroneous—conclusions of an early meta-analysis by R. Salekin et al. (1996). Though they focused only on a single risk assessment tool—the PCL-R—Salekin et al. concluded that "Despite its limitations, the PCL-R appears to be unparalleled as a measure for making risk assessments [of dangerousness] with white male inmates" (p. 211).

The number and range of empirically validated violence-risk tools has grown considerably in the last 20 years. Notable recent developments include validated purpose-designed instruments (e.g., Historical-Clinical-Risk Management-20; Webster, Douglas, Eaves, & Hart, 1997; Ontario Domestic Assault Risk Assessment; Hilton et al., 2004; Violence Risk Appraisal Guide; Quinsey, Harris, Rice, & Cormier, 1998; VRS; S. Wong & Gordon, 2006; STABLE and ACUTE; Hanson, Harris, Scott, & Helmus, 2007; Level of Service/Case Management Inventory; Andrews, Bonta, & Wormith, 2004a, 2004b), some of which are capable of identifying treatment

targets, measuring treatment change, identifying acute changes in risk that can be used for day-to-day offender management, and assessment of specific types of violence risk. Commonly these instruments have also been validated so that probabilities of offending over fixed time periods can be inferred from specific ranges of scores (e.g., S. Wong & Gordon, 2006).

The PCL-R was developed to diagnose a personality disorder; it was not intended to have the capabilities of these specialized instruments, and it would be surprising if it were more effective at risk prediction than these instruments (Hare, 2003). Two new meta-analyses raise questions about whether other instruments should be chosen in preference to the PCL-R/SV when assessing violence in particular. Using only studies published since 1999, M. Yang et al. (2010) compared 9 instruments, including three based on dynamic, clinical information including treatment response. All 9 predicted violence at a similar moderate level. Two additional findings are particularly notable. First, the PCL-R/SV interpersonal-affective scale predicted no better than chance, calling into question the relationship between distinctively psychopathic traits and violence. Second, among the instruments were some based on hard-to-rate dynamic items, which have traditionally been regarded as too unreliable for use for actuarial purposes (e.g., M. Rice, 2007).

Singh et al. (in press) also compared nine risk-assessment instruments, using studies published since 1995 with a total sample size of 25,980 participants. Instruments designed specifically for violence prediction produced the highest effect sizes; the PCL-R yielded the lowest predictive validity of the nine scales. Singh et al. conclude that "[t]he present meta-analysis would therefore argue against the view that the PCL-R is unparalleled in its ability to predict future offending" (p. 11). They suggest that the variations they found in predictive performance argue for selecting prediction tools based on the needs of the current assessment; "risk assessment procedures and guidelines by mental health services and criminal justice systems may need review" (pp. 12–13). Together, these two new analyses argue against the practice of turning to the PCL scales as the first tool for risk assessment, given the range of choices that have developed since the first PCL scales, the range of purposes for which risk information is needed and the availability of instruments that are cheaper and simpler to use.

Do psychopathy measures provide unique information to decision makers? One possibility for why clinicians may prefer the PCL-R/SV for use in risk assessments remains: They reason that a high score on the PCL-R indicates that (a) psychopathy is present and (b) the assessed person's criminal behavior is caused by it. Taken together, these two assumptions are presumed to create a more severe picture of ongoing criminal risk than would be inferred from a risk score alone (e.g., more harmful offending, or a reduced likelihood that the person will become less dangerous with age, or that he or she will respond to treatments that reduce criminal risk in other offenders). We reviewed research on the longitudinal (in) stability of psychopathy in the section on development and will consider treatability in the section that follows. In the remainder of this section, we first review research on whether we can reasonably conclude that scoring high on the PCL-R links psychopathic characteristics with criminal risk. Finally, we look at attempts to establish that psychopathy has a unique association with a particular type of violence that makes people with high PCL-R scores more dangerous in some way than other high-risk offenders.

Unique information about the cause of criminal behavior. We opened this section by reminding readers that heterogeneous personality characteristics underpin chronically criminal lifestyles. Still, might it be that for people with high PCL-R scores, more homogeneous psychopathic characteristics not only predict their crimes but also cause them?

Earlier we noted that Factor 2 scores on both the PCL-R (lifestyle and antisocial facets) and the PPI-R (impulsive antisociality) index predictors of criminal behavior that are common in criminal populations, including among psychopathic criminals. In contrast, Factor 1 interpersonal-affective scores index features more distinctive of psychopathy, albeit that for the PCL-R, both primary (emotionally stable and detached) and secondary (emotionally reactive) psychopaths can score similarly on this scale (e.g., Hicks et al., 2004).

These differences have been used to explore statistically what role more distinctively psychopathic traits may play in predicting criminal behavior. Although such analyses cannot be used to infer causality, demonstrating that the interpersonal-affective scale plays a role in criminal risk prediction is a logical first step in that direction, based on the argument noted in the opening to this section—that it is less obviously affected by the problem of predictor–criterion contamination. We return now to risk-prediction studies to examine the relative predictive contributions of the interpersonal-affective factor versus the more generically criminal antisocial factor. Again, most studies use the PCL-R, but we will also report PPI/PPI-R studies if they are available.

It turns out that the PCL-R/SV factors are not equally good at predicting crime. The interpersonal-affective factor has a small, sometimes statistically nonsignificant relationship to crime, including violent crime (range .10 to .21; Gendreau et al., 2002; Guy et al., 2005; Hemphill et al., 1998; Leistico et al., 2008; M. Yang et al., 2010). The antisocial factor is a significantly stronger predictor of criminal behavior, similar in strength to total scores (Gendreau et al., 2002; Leistico et al., 2008) with correlations (r) between .19 and .30 (Gendreau et al., 2002; Guy et al., 2005; Leistico et al., 2008; M. Yang et al., 2010). The factors predict each outcome at a similar level of accuracy; there is no evidence, for example, that the interpersonal-affective factor is better at predicting violence than other crime.

Once again, this pattern of findings has been mirrored by research on the PPI. Edens, Boccacini, and Johnson (2010) found similarly that the second but not the first factor of the PPI predicted both antisocial behavior and risk for violence.

The above findings indicate that a closer look at how each factor operates to predict these outcomes—both alone and in concert—is warranted. The first question of interest is whether the uniquely psychopathic interpersonal-affective factor provides any *additive* utility in predicting crime, after controlling for its association with the more nonspecific antisocial factor. Statistically, we examine this issue by entering the factors into a multivariate prediction equation in a specific order—that is, after entering the factor whose influence we wish to control, we then enter the factor for which we want to examine the unique effects.

The second question of interest is whether the two factors work together synergistically to predict crime beyond the simple additive contributions of each constituent factor (Kennealy et al., 2010; Lilienfeld, 1998). Statisically, we examine this question by first controlling for each factor's individual contribution to prediction and then examining whether the two scales interact with one another to significantly enhance predictive accuracy.

Few studies have tested either the additive or interactive models directly. Walters, Knight, Grann, and Dahle (2008) examined the *additive* model, with facet analyses of the PCL-R/SV with six samples (See Table 2 for facets). All four facets did indeed predict both criminal and violent convictions, but the fourth or antisocial facet was significantly better at doing so than the other three. Furthermore, in all 11 comparisons, it still made a unique contribution to crime prediction beyond that of the first three facets when they were already entered into the analysis in a single step. By contrast, when entered into the prediction equation after the antisocial facet, the first three facets only made an additional contribution to prediction in 2 of 11 comparisons. In other words, most of the predictive power of the PCL-R/SV in these samples came from a single facet, antisocial, capturing mainly childhood and adult antisocial behavior, irresponsible behavior, criminal versatility, and the like. The authors concluded that the additive model had little support: Crime prediction in these samples was mainly achieved using historical behavioral variables that are generally well-established predictors of criminal risk.

A recent meta-analysis—this time examining only violent outcomes—tested both additive and interactive models. Based on 32 effect sizes, it found no support for the interactive model; there was no interaction between Factors 1 and 2 in the prediction of violence ($d = 0$). The analyses of the additive model confirmed the small unique contribution ($d = .11$) of the interpersonal-affective personality characteristics (Kennealy et al., 2010). Since then, a study using both the PCL-R and the PPI-R with offenders found that PPI-II (impulsive antisociality) predicted violence, but fearless dominance (PPI-I) and the interaction between them did not (Camp, Skeem, Barchard, Poythress, & Lilienfeld, 2011).

Taken together, these findings suggest that the most distinctively psychopathic features measured in the PCL-R/SV have, on their own, little or no statistical relationship to crime, including violence. In contrast, those lifestyle and antisocial-behavior characteristics shared with other criminals have a moderate relationship to crime. These findings may generalize across major measures of psychopathy, but the number of studies using the PPI-R is still very small. If the same pattern is found with scales such as the PPI-R, it may suggest that it is not simply criminal behavior embedded in the PCL-R that drives the superior performance of the antisocial factor, but disinhibitory psychopathology more generally. Indeed, this possibility has some empirical support: Even after controlling for past criminal behavior, the PCL measures' antisocial factor still predicts violence (e.g., Skeem & Mulvey, 2001), suggesting that it assesses traits of antagonism and/or disinhibition that are not necessarily psychopathic but raise one's likelihood of involvement in violence (see Skeem et al., 2005).

The main function of risk assessments is arguably to make decisions that will contribute to initiatives to increase community safety: specifically, to protect against criminal victimization. One remaining program of research has sought to argue that PCL-R scores—as indices of psychopathy—have implications beyond those of other risk-assessment scores in enhancing community safety.

Unique information about a particular type of violence. Under the heading "Nature of Psychopathic Violence," Hare's (2003) PCL-R manual reports on a series of studies that have been widely interpreted to indicate that, in addition to being quantitatively different (i.e., more frequent), "the violence of psychopathic offenders often is also qualitatively different from that of other offenders" (p. 136). Such studies pose an intriguing question: Are criminal psychopaths' violent crimes different in some way from those of other violent criminals?

To investigate the question, these studies—and several newer ones—use a longstanding two-category typology of violence (for a review and critique, see Bushman & Anderson, 2001). *Instrumental violence* is committed proactively and for pragmatic reasons (e.g., material gain) in a relatively emotionally stable state. *Expressive* or *reactive violence* instead refers to acts committed in a state of high emotion—often anger—with the primary goal of hurting or destroying the victim. Researchers have asked whether instrumental violence is related to psychopathy, based on the possibility that the emotional stability that is a core characteristic of primary psychopaths differentially leads them to instrumental violence. However, the research is difficult to conduct and interpret. There are two especially significant challenges: (a) Flaws in the underlying theory (see Bushman & Anderson, 2001) create difficulties in operationalizing the dichotomy consistently across studies; and (b) few offences are solely of one type or the other, and individual offenders' histories often contain a mixture of types. Existing studies also have varied in the quality of the data used to classify offences (see Camp et al., 2011, for more details).

A handful of studies have revealed higher PCL-R scores among violent offenders whose current offence or history of violence includes instrumental features (e.g., Cornell et al.,

1996; Hart & Dempster, 1997; Vitacco et al., 2009; Woodworth & Porter, 2002). This finding should not surprise us; higher-risk violent offenders use violence to achieve diverse goals. Violence with instrumental properties should be positively correlated with any measure of criminal risk, as it seems likely that the traits that underpin it are common to a criminal lifestyle (Camp et al., 2011). Confirming this view, several studies have found that PCL-R/SV antisocial factor scores alone significantly predict instrumental violence (Camp et al., 2011; Cornell et al., 1996; Woodworth & Porter, 2002).

But is instrumental violence psychopathic? There is confusion on this point. A few studies have found small associations between scores on the more distinctively psychopathic interpersonal-affective features captured by PCL-R Factor 1 and instrumental violence (Cornell et al., 1996; Hart & Dempster, 1997; Vitacco et al., 2009; cf., Camp et al., 2011). However, the conclusion that psychopathic individuals commit distinctively instrumental violence seems to derive mostly from an influential study conducted by Woodworth and Porter (2002), who concluded that "psychopaths engage in far more instrumental or cold-blooded homicides than other offenders" (p. 443).

Woodworth and Porter's statement appears to suggest that people with high PCL-R scores are at greater risk of committing instrumental homicides than are those with lower scores. But actually the research didn't pose this question. Rather than sampling psychopathic killers to see whether—when they commit crimes—they are unusually prone to committing instrumental homicides (or any homicides), they examined a convenience sample of 125 imprisoned homicide offenders to determine how many were psychopaths, based on traditional PCL-R cutoff scores. The majority was not.

However, PCL-R psychopaths' (PCL-R $\geq$ 30) homicides were more likely to be *purely* instrumental (i.e., with no reactive features) than those of nonpsychopaths (PCL-R $\leq$ 20). The authors did not demonstrate that instrumental offences are necessarily "cold-blooded," as would be predicted if we wanted to link these offences to primary psychopathy. Even in PCL psychopaths, more than one third of instrumental homicides were not cold-blooded at all. Rather, they contained evidence of emotional reactivity. Classifying people as psychopaths also did not indicate those most likely to have committed homicides with instrumental elements: Most were actually committed by *non*psychopaths (Woodworth & Porter, 2002).

To date, the small amount of evidence available—using instrumental violence as a model for serious crimes conducted with little emotional involvement—does not support or refute the idea that there is a unique form of psychopathic violence; more research is needed. But even if it did, what might be the practical implications? Would it mean that psychopathic individuals were more dangerous in some way?

Dangerousness is a notoriously slippery concept. Here we define it as increased risk of serious victim harm. Seriousness of individual offences has rarely been examined directly in relation to psychopathy, but if primary psychopaths—when they committed violent offences—were more emotionally stable, then would the offences be more serious? Perhaps not. It is axiomatic to experienced FBI profilers that serious victim injury indicates an emotionally driven offence (O'Toole, 2006), and research is tentatively supportive, at least for sexual offending (see Knight & Prentky, 1990). By contrast, if a robbery—arguably the most prototypical instrumental-violence offence—goes smoothly, typically no one is physically harmed (Williamson, Hare, & Wong, 1987). Consistent with this reasoning, Williamson et al. found that the offences of PCL-R psychopaths were *less* serious (typically armed robbery and property offenses) than those of nonpsychopaths (who committed most of the murders in the sample).[4]

Is it possible, even, that some psychopathic characteristics may be protective from a "dangerousness" point of view? Scores on the affective facet of the PCL-R were also found recently to predict reduced offense seriousness (Camp et al., 2011). If you were unfortunate enough to be caught up in a bank robbery, you would arguably feel somewhat safer if the robber were calm than if he were screaming angrily and behaving erratically.

This is a worthwhile area for future investigation: A better understanding of whether and how psychopathic traits are linked to particular forms of behavior can only benefit our understanding of psychopathy as a construct. But more, and more rigorous, research is needed.

Overall conclusions. We conclude that the current state of the scientific evidence suggests that psychopathic criminals are at elevated risk for future crime. Most currently available evidence suggests that distinctively psychopathic characteristics make little or no contribution to that risk, but more well-conducted research is needed. By contrast, the evidence is compelling that those portions of psychopathy measures—most notably the antisocial factor on the PCL scales—are moderate predictors of criminal risk; this relationship drives most of the scales' overall predictive validity. This pattern of results also supports other research suggesting that it is externalizing and disinhibitory psychopathology—with its diverse associated personality characteristics—that is the main contributor to criminal risk. As research using psychopathy measures other than the PCL scales increases, so will confidence that psychopathy's relationship to antisocial and criminal behavior is not a function only of that tool. At present there are few such studies.

Improved research design is important in this domain. When researchers understand that psychopathy is not the only personality constellation underlying criminality and incorporate this understanding into research design—for example by including empirically-derived risk measures alongside psychopathy scales and making comparisons between primary psychopaths and other high risk criminals, not between PCL psychopaths and low-risk criminals—more informative results may emerge.

When aligned with these research results, the popularity of the PCL scales with clinicians undertaking criminal risk assessments is surprising; their performance is not superior to

other instruments, they are labor intensive, they require extended training, and they are more challenging to score reliably than some simpler measures. Finally, they yield limited information about criminal risk, especially information that would be useful in treating or managing the risks posed by individual offenders.

Do psychopathic people respond to treatment?

Many clinicians and researchers today assume that psychopathy is untreatable (R. T. Salekin, 2002), a view that has led to formal policies and local practices that exclude PCL-psychopaths from taking part in offender interventions (e.g., S. Campbell, 2003). Surprisingly little research has tested this assumption. In this section, we review evidence on the extent to which treatment reduces psychopathic individuals' (a) violent and other criminal behavior, (b) risk factors for offending, and (c) traits of psychopathy per se. We then discuss whether treating psychopathic offenders is uniquely challenging, compared to treating other high-risk offenders. First, however, we provide a context for digesting this evidence.

Context

Historical and methodological context. Cleckley (1976) believed that psychopathy was untreatable. However, in Cleckley's era, few major psychiatric disorders could be treated effectively; the most developed psychological treatments were forms of insight-oriented psychotherapy, and these often are viewed as most suited to the concerns of the "worried well." Since then, a much wider range of effective therapies has become available, including behavioral and cognitive-behavioral interventions, and a much broader variety of disorders have been shown to respond to treatment. Indeed, therapeutic advances have made it possible to effectively treat people with borderline personality disorder (Linehan, 1993) and those with long histories of criminal offending (Andrews & Bonta, 2006; McGuire et al., 2008).

It may be that, as with these conditions, effective treatment of Cleckleyan psychopathy requires principles and techniques that are specifically designed for this group. At present, we simply do not know. First, relevant research is limited. For example, R. T. Salekin (2002) reported 42 studies documenting treatment efforts with psychopaths since the 1940s—just 6 since 1980. However, few used validated measures of psychopathy, included an untreated control group, or used sound measures of outcome. Second, it seems that no specialty treatment programs for psychopathy have been empirically validated.

Nevertheless, newer research—still imperfect, but much more scientifically rigorous than before in how it diagnoses psychopathy and measures change and outcomes—is available. This research uses the PCL-R and its derivatives to assess psychopathy and focuses on the outcome of violent and other criminal *behavior*.

Principles of effective correctional treatment. Some of the treatment programs in these recent studies rest on the basic assumption that criminal risk itself can be treated effectively. This assumption is supported by meta-analyses that have helped to distill three broad principles of effective correctional intervention: *risk*, *need*, and *responsivity* (Andrews, Bonta, & Hoge, 1990). Put simply, treatment programs for offenders yield the largest reductions in criminal behavior when they (a) target relatively intensive services at higher-risk offenders (the risk principle), leaving lower-risk offenders with little or no therapeutic service; (b) focus on changing empirically established correlates of criminal risk (e.g., criminal attitudes, substance abuse, impulsivity), also referred to as dynamic risk factors or criminogenic needs (the need principle); and (c) deliver intervention in a manner that maximizes offender engagement in the treatment process (the responsivity principle). Ideally, warm, enthusiastic, respectful, and well-supervised therapists apply these principles using the most effective cognitive and behavioral techniques for treating criminal risk (Andrews & Bonta, 2006). These therapists endeavor to work *with* difficult client characteristics (e.g., hostility, poor motivation) because they are (a) inherent in those who can benefit the most from treatment, at least partly because (b) these same characteristics likely contribute to criminal behavior.

The more that programs adhere to these principles with general offenders, the more they reduce reconviction risk. The impact on crime for those adhering to all three principles is modest but important; effect sizes range from 0.15 to 0.34; (Andrews & Bonta, 2006). An effect size of .15 indicates that if during follow-up, 40% of untreated offenders were reconvicted, the corresponding outcome for treated offenders was 25%—a reduction of more than 35%. In short, criminal offending can be treated effectively by focusing on challenging cases, directly targeting strong risk factors for crime, and requiring therapists to skillfully persist with uncooperative and frustrating clients.

Relevance of general correctional treatment research to psychopathy. But what is the relevance of these findings to understanding research on PCL-psychopathy and treatment? Although PCL-psychopaths are widely viewed as untreatable, PCL-R/SV scores predict criminal recidivism and are highly correlated with purpose-built risk-assessment tools (see previous section). These risk-assessment tools, in turn, are used in progressive correctional systems to prioritize high-risk offenders for specialized intervention. Arguably, then, in accordance with this risk principle, high-PCL-scoring clients should be among those most highly prioritized for intensive intervention. Having provided this context, we now examine research on the effect of treatment on psychopathic offenders.

Does treatment reduce psychopathic individuals' violent and other criminal behavior? At least four studies have specifically examined whether treatment reduces psychopathic individuals' violent and other criminal behavior. Three of these have yielded relatively optimistic results. In a uniquely non-criminal-justice-oriented study, Skeem, Monahan, and Mulvey (2002) found that intensive treatment reduced violence among psychiatric patients regardless of PCL-R score.

Further, PCL psychopaths who received fewer than 6 treatment sessions were 2.5 times more likely to behave violently in the following 10 weeks than were those who attended more sessions. The same pattern of findings has been demonstrated with young adults. Graduates of an intensive institutional program for seriously criminal and violent youth had less than half the risk of later violent reconviction compared to a sample who attended a conventional juvenile correctional facility, and PCL:YV scores ($M = 27$) were unrelated to outcome (Caldwell et al., 2006). Graduates of a similarly intensive program for high-risk, violent adult prisoners that generally followed risk-need-responsivity principles (PCL-SV $M = 17.8$ for treatment sample) also showed reductions in general and violent offending (Polaschek, 2011). PCL-SV scores were unrelated to violent reconviction ($r = .05$; Polaschek, 2008).

None of these studies is a randomized controlled trial (RCT). To our knowledge, no RCTs of psychopathic individuals' response to legitimate treatment have been published, so no causal conclusions regarding the effect of treatment on psychopathic tendencies can be drawn. Some reviewers seem to believe that only an RCT can provide convincing evidence that psychopathic individuals can be effectively treated (Harris & Rice, 2006). For two reasons, we have a different perspective. First, we believe that until proven otherwise (via RCTs or other rigorous quasi-experimental studies), the default assumption should be that individuals with psychopathy *can* be effectively treated. To assume the opposite is to risk creating a caste of untreatables—as we have mistakenly done in the past for those with other disorders (e.g., borderline personality disorder, antisocial personality disorder, even schizophrenia; see "Context" above; see also Petrila & Skeem, 2003).

Second, empirically, several meta-analyses of intervention protocols for high-risk offenders have found little or no difference in effect sizes for randomized versus high-quality quasi-experimental designs (for a review, see Hollin, 2008). The studies reviewed above are high-quality, quasi-experimental designs that apply state-of-the-art methods to conservatively estimate treatment response (e.g., include treatment noncompleters in analyses, involve case matching on criminal risk, and/or apply propensity scores to statistically control for nonrandom assignment to treatment and control groups when estimating treatment effects). In our view, these studies are relatively rigorous, and their findings effectively challenge conventional wisdom that "treatment makes psychopaths worse."

Only one retrospective study provides evidence of an intervention that actually increases recidivism for psychopathic offenders (Harris, Rice, & Cormier, 1991, 1994; M. E. Rice, Harris, & Cormier, 1992; see also Barbaree, 2005; Langton, Barbaree, Harkins, & Peacock, 2006). This intervention was a highly unusual therapeutic community implemented in a Canadian maximum-security forensic psychiatric hospital in the 1960s (Barker, 1980; Barker & Mason, 1968; see also Harris & Rice, 2007). Decades later, M. E. Rice et al. (1992) assessed the outcomes of the program. They matched on age, criminal history, and index offence former detainees in this novel environment and a sample of inmates who had merely been imprisoned. They used chart data to score retrospectively both samples on the PCL-R. Although treated and untreated psychopathic offenders shared similar rates of general recidivism after release, more of those who were treated were reconvicted for violent offenses: 78% versus 55%. By contrast, among those with low PCL-R scores, fewer treated men were reconvicted for violence than their fellow prisoners.

The authors speculated that treatment helped psychopaths to "read people" better, a skill they applied to their advantage when carrying out their violent crimes (M. E. Rice et al., 1992, p. 409). But how? Violence is often thought of as the refuge of the socially unskilled. According to this view, reading people better in order to use them for one's own ends should actually *decrease* the use of so blunt a tool as violence or at least aid in avoiding conviction for it (Porter & Porter, 2007; see also Vidal, Skeem, & Camp, 2010).

An alternative interpretation is that this program harmed psychopathic offenders. By today's scientific standards, the program would be considered unsuitable for high-risk offenders—or anyone, for that matter. This program was intended to be coercive, and attendance was involuntary (Barker, 1980). As part of its explicit aim to strip patients of their psychological defenses, offenders resided together in continuous, minimally-monitored contact for 24 hours a day, were administered LSD and other drugs, and took part in marathon and nude encounter group sessions. Patients were responsible both for the re-education and the physical security and safety of other patients (Barker, 1980; Barker & Mason, 1968).

Psychopathic individuals were disproportionately exposed to the most intrusive and punitive aspects of this treatment. Those with higher PCL scores received more sodium amytal, LSD, and other drugs to disrupt their glib, aloof, and hostile interpersonal styles (Harris, Rice, & Cormier, 1994; Skeem, Polaschek, & Manchak, 2009), and they were referred for disciplinary action and sent to seclusion more often than were patients with lower PCL-R scores (M. E. Rice et al., 1992). These treatment-experience variables, in turn, predicted recidivism across the whole sample but were not controlled for in examining outcomes. Put another way, psychopathic offenders were more extensively subjected to the more damaging aspects of the program; the end result was in keeping with the general literature, which suggests that punitive and some peer-oriented psychosocial treatments can have harmful effects (Lilienfeld, 2007).

Although relevant research is limited, on balance it seems that a variety of treatment programs (for psychiatric patients, delinquent youth, and high-risk criminal offenders) can reduce psychopathic individuals' violent and other criminal behavior. In many ways, this may be viewed as the most policy-relevant outcome investigated, given its obvious relevance to public safety.

Does treatment reduce psychopathic offenders' risk factors for recidivism? Given these promising findings for recidivism, is there evidence that the mechanism of change for

psychopathic offenders is reduced criminogenic needs? The best methods for measuring these offenders' changes in treatment remain unclear (Langton et al., 2006; Seto, 2003). However, there are two studies in which trained raters gathered observations from multiple informants across two time points (beginning and end of intervention), using a validated measure of relevant treatment needs—in this case, the VRS (S. Wong & Gordon, 2006; VRS-Sexual Offender version; S. Wong, Olver, Nicholaichuk, & Gordon, 2003). The VRS (a) assesses initial level of risk on each of a large range of dynamic risk factors (e.g., sexual preoccupation, substance abuse, impulsivity, criminal attitudes); (b) determines, for each offender, which risk factors are treatment goals; (c) measures progress against these goals; and (d) sums that progress into a change score at the end of treatment that indicates how much reduction in risk has occurred.

Olver and Wong (2009) found that psychopathic individuals in an intensive high-risk sex offender program not only made progress on these risk-related treatment targets but, the more they changed, the fewer sexual and violent reconvictions they had. A similar study with serious high-risk violent offenders (PCL-R $M = 26$) obtained similar results. The more psychopathic offenders changed, the less likely they were to be reconvicted for violent offenses (Lewis, Olver, & Wong, 2011). So these two studies not only rigorously document change in PCL-psychopaths during treatment but also statistically link that improvement to actual changes in outcome. In keeping with the results above, they suggest that if we define treatability as the ability to make changes that result in less socially harmful behavior, psychopathic individuals can indeed be treated effectively in intensive treatment. It seems that this is a topic worthy of much more high-quality scientific investigation.

Does treatment reduce psychopathic traits? Reducing criminal behavior is—and arguably should remain—the chief policy goal when it comes to psychopathic individuals, but is there any direct evidence that we are treating the core interpersonal and affective traits of psychopathy?

In a word, no. There is no direct evidence yet of change on criteria used to diagnose psychopathy. In fact, we found no research that explicitly asked this question. There isn't even a validated tool designed to track such change, although a very promising one is under development (see Cooke, Hart, Logan, & Michie, 2011). Indeed, leading experts appear to assume that distinctive traits of psychopathy are less treatment targets than something to work around while reducing the risk of reoffending (Doren, 1987; S. C. P. Wong, 2000; S. C. P. Wong & Hare, 2005). Despite the absence of empirical backing, this stance has intuitive appeal for at least two reasons. First, people are usually referred for treatment for something else—for example, to reduce their risk of reoffending or of substance abuse —not to fix their unpleasant personality characteristics. Second, traits are assumed to be intractable; for example, S. C. P. Wong (2000) argued "it is unrealistic to try to change the psychopath's personality structure" (p. 99).

But are psychopathic traits really intractable, and therefore best avoided as the direct targets of intervention? Again, indirect evidence suggests that the answer may turn out to be no. First, personality traits can change for the better merely with the passing of time (Seivewright, Tyrer, & Johnson, 2002). Second, some treatments improve symptoms of borderline personality disorder (Clarkin, Levy, Lenzenweger, & Kernberg, 2007), which overlaps with PCL-psychopathy, especially its antisocial factor (Newhill, Vaughn, & DeLisi, 2010).

Third, and most importantly, intensive treatment programs designed explicitly for high-risk offenders arguably target psychopathy-relevant traits including meanness and disinhibition. These programs focus on changing dynamic risk factors that may be viewed as relatively stable psychological characteristics (Mann, Hanson, & Thornton, 2010; Ward, Polaschek, & Beech, 2006), including grandiosity and arrogance toward others, low empathy, callousness and lack of guilt, conning, lying, and manipulating others. Similar items have been used to rate psychopathic individuals' treatment progress, using the VRS (Lewis et al., 2011) study. Progress on dynamic risk factors may well turn out to be progress on altering traits. But research that is already ongoing in a number of countries must directly test this proposition. If such research provides support for a functional link between current treatment targets and psychopathic traits, it will clearly challenge assumptions that we lack the therapeutic technology to alter basic psychopathic tendencies.

Is the process of treating psychopathic offenders a unique challenge? Evidence that intensive treatment reduces psychopathic offenders' risk factors and, more importantly, their criminal behavior should reduce therapeutic pessimism about this group. However, just as classroom teachers may regard hostile, noncompliant, and egocentric students as "unteachable" even if they pass the course, psychotherapists may similarly judge treatability not on the basis of improved outcomes but, instead, on their experiences of challenges in the therapy *process* with the client. This raises a question: To what extent is the process of treating psychopathic offenders a unique challenge?

Putting aside the issue of psychopathy for a moment, an extensive research base suggests that high-risk offenders generally are challenging to treat. In no small part, the features that predispose them to criminal behavior, and that therefore need to change, also challenge the process of treatment. High-risk offenders are often angry and irritable, prone to feeling victimized, suspicious of others' motives, antagonistic, aggressive, untrustworthy, egocentric, noncompliant, and uncommitted to change (Blackburn, 1999; Krueger et al., 1994; Lowenkamp & Latessa, 2004; Moffitt, 2003; R. R. Ross, Fabiano, & Ewles, 1988). Crime-reducing therapies are centrally concerned with teaching new skills, but higher-risk offenders make "poor students": They do not persist with treatment when they find tasks hard, and they lack self-reflection and self-control (Cale, 2006). Deficient verbal abilities and a range of other neuropsychological impairments, a history of failing

at school, and negative attitudes to new learning only make matters worse (Golden, Jackson, Peterson-Rohne, & Gontkovsky, 1996; Moffitt, Lynam, & Silva, 1994).

Nevertheless, these are the very clients that the risk principle suggests we prioritize for scarce treatment resources, because differentially allocating resources to them will have a bigger effect on community safety. But it is easy to imagine from the factors listed above why interventions need to be intensive and why progress can be slow. Programs designed for high-risk offenders understand that these challenges go with the territory. Therapists in these programs work hard to engage, motivate, and help clients learn (Beyko & Wong, 2005; Polaschek, 2010). From a public safety perspective, "difficult to treat" cannot be equated with untreatable.

Within this broader, difficult-to-treat population, do psychopathic individuals present unique challenges to the treatment process? Correlational research shows that those with high PCL scores—like other high-risk offenders—tend to be evasive, verbally combative, hostile, prevaricating, disruptive and less ready to change, less committed to adjunct activities such as work and education, and more likely to be removed from or leave treatment prematurely, compared to lower-scoring offenders (Alterman, Rutherford, Cacciola, McKay, & Boardman, 1998; Caldwell, McCormick, Umstead, & van Rybroek, 2007; Chakhssi, de Ruiter, & Bernstein, 2010; Hildebrand, de Ruiter, & de Vogel, 2004; Hobson, Shine, & Roberts, 2000; Ogloff, Wong, & Greenwood, 1990; Olver, Wong, Nicholaichuk, & Gordon, 2007; Rice et al., 1992; Seto & Barbaree, 1999; Taft, Murphy, Musser, & Remington, 2004). Are there unique challenges? No research has controlled for criminal risk to examine whether PCL-R/SV scores add incremental value in predicting these challenges. Although tests are clearly needed, we hypothesize that they do not.

It has also been assumed that psychopathic traits uniquely compromise one essential ingredient in effective therapies of all kinds—the therapeutic alliance (Galloway & Brodsky, 2003; S. C. P. Wong & Hare, 2005). But again, this assertion has received almost no empirical attention, and the scant research fits the same picture. In an intensive program for high-risk offenders that generally followed risk-need-responsivity principles—a program in which therapists are accustomed to working to engage challenging clients—Polaschek and Ross (2010) found that alliance scores were not significantly related to PCL-SV scores ($M_{PCL:SV}$ = 19.5, above the diagnostic cutoff suggestive of psychopathy). Moreover, prisoners', therapists', and observers' alliance ratings were high in the first week of treatment and increased as treatment progressed. But in a relatively low-criminal-risk sample—a community treatment program for men who sought help for partner assaults—scores on the Hare Self-Report Psychopathy Scale consistently predicted lower alliance ratings (Taft et al., 2004).

In programs that mainly work with less crime-prone clientele, "badly behaving" higher-risk, higher-PCL-scoring clients stand out the way disruptive students do in a mainstream school classroom. It is easy to assume from their conspicuously poorer behavior in treatment that they will not profit from the experience by demonstrating later a reduced likelihood of reconviction. However, the little available evidence on change and outcome suggests otherwise. Arguably, therapists should not use challenges to the therapy process as a rubric for judgments about who will benefit most from the treatment, but instead as identifying those clients they should work hardest to help.

We speculate that when therapists rise to the challenge of working with such difficulties, as they have to in programs that prioritize high-risk offenders, offenders stay longer in treatment and change can result, both in the difficulties themselves (e.g., reduced hostility, impulsivity) and—because the same difficulties can contribute to offending—in criminal risk. Excluding such clients from treatment is based not on scientific evidence but on a preference to work with potentially more pleasant and compliant lower-risk clients (Wormith & Olver, 2002).

How is the concept of psychopathy used in the real world?

Application context. Research on psychopathic offenders' risk of criminal behavior and treatment amenability reviewed above begins to convey how the concept of psychopathy is used in the real world. Although there are important international variations in specific practices, it seems that in most Western countries, psychopathy measures chiefly are applied to inform legal decisions about offenders that turn upon dangerousness and treatability. What kinds of legal decisions? In the juvenile and/or criminal justice systems, risk assessment and treatment amenability have long been a component of decision making about bail, sentencing, institutional placement, parole, and transfer of youth from juvenile to adult court. Risk assessment also features prominently in more recent and controversial preventive-detention laws, which a number of countries have enacted to allow for indefinite incarceration of certain offenders after they have already served their sentence if there is evidence that they still pose a high risk of reoffending (see McSherry & Keyser, in press). These are sometimes referred to as "dangerous offender" or "sexually violent predator" laws.

These legal developments, combined with recent pressure to implement cost-effective and evidence-based sentencing and correctional practices, have made risk assessment and risk management big business in criminal justice and related settings. Because research has established that using validated, structured risk-assessment tools significantly improves professionals' ability to predict future criminal behavior including violence, these tools increasingly are being applied in response to a variety of statutes and regulations that require specialized assessments to identify "high risk" individuals for detention or "low risk" individuals for release (for a review, see Skeem & Monahan, 2011).

PCL-R dominance in applied contexts. Available data suggest that the PCL-R and its direct derivatives (the PCL:SV and

PCL:YV) are highly regarded and widely applied in these justice contexts, particularly in North America. In contrast, other psychopathy assessment tools (e.g., PPI, YPI) are rarely mentioned. First, practitioner guides and surveys suggest that many forensic psychologists are of the opinion that "consideration of possible psychopathy and use of instruments specifically designed to guide assessment of this key personality construct (e.g., the PCL-R and PCL-SV) should be routine in the evaluation of dangerousness risk" (Tolman & Mullendore, 2003, p. 230). According to a survey of forensic psychologists, the PCL-R is the number one specialty assessment tool that these experts use in violence-risk assessments; in fact, its use is endorsed twice as often as purpose-built violence-risk-assessment tools (Tolman & Mullendore, 2003; see also Archer, Buffington-Vollum, Stredny, & Handel, 2006). A more recent survey indicates that forensic psychologists use the PCL measures to assess violence risk more often with adults than with youth, but the vast majority (79%) report using the PCL:YV at least once in a while to assess juveniles' risk (Viljoen, MacLachlan, & Vincent, 2010). This practice seems at odds with the test developers' admonitions about (in)appropriate uses of the measure (see Forth et al., 2003).

Second, case reviews indicate that expert evidence on psychopathy (typically as assessed by the PCL measures) is often offered in both juvenile and adult criminal cases. As suggested earlier, Viljoen et al.'s (2011) review of 111 juvenile-court cases in North America indicates that court references to psychopathy had rapidly increased since the 1990s, particularly in cases meant to determine whether a youth should be transferred to the adult criminal justice system; in these cases, psychopathy tends to be linked with inferences about dangerousness and untreatability (e.g., "prognosis is grim"; R. v. M.B.W., 2008, para. 8, as cited in Viljoen et al., 2011, p.266). Lloyd, Clark, and Forth (2010) reviewed 136 adult "dangerous offender" hearings in Canada, which ultimately focus on whether to indefinitely detain an offender who is at high risk of violence and unlikely to respond to treatment. Psychopathy (typically as assessed by the PCL-R) was mentioned in a majority of judgments (62%). PCL-R scores were strongly associated with experts' testimony that an offender was both high risk and unlikely to respond to treatment, and opinions on treatment amenability were, in turn, associated with judges' ultimate determinations. DeMatteo and Edens (2006) found that the use of the PCL-R in U.S. court cases increased substantially in a step-wise function between 1991 and 2004, with most often raised legal issues being whether an offender should be indefinitely involuntarily committed as a sexually violent predator (at the state level), released from incarceration to probation or parole (at the state and federal level), or sentenced to death (at the federal level). In most cases reviewed in this study (85%), PCL-R evidence was introduced by a witness called by the prosecution.

(Un)reliability and bias of PCL-R scores in applied context. Although the PCL-R and its progeny can attain high ratings of interrater reliability in research contexts (Hare, 2003), there is evidence that these figures do not generalize to common real-world contexts. In applied settings, interrater-reliability estimates tend to be in the poor range (Boccaccini, Turner, & Murrie, 2008; Murrie, Boccacini, Johnson, & Janke, 2008; ICCs = .43 and .39, respectively), particularly for Factor 1 scores, which assess the interpersonal and affective features of psychopathy (Edens et al., 2010).

The PCL-R item criteria—particularly for the interpersonal-affective factor—allow for some subjectivity in scoring (T. W. Campbell, 2006) that could act as a vehicle for misapplication in contexts in which clinicians can be unduly influenced by financial or other sources of potential gain. Indeed, prosecution experts have been shown to produce PCL-R scores that consistently are much higher (d = 1.03) than those of defense experts in sexually violent predator cases (Murrie et al., 2008). PCL-R scores presented in court, then, may be biased toward the side that called the expert to testify.

More recent research that applies generalizability theory to examine sources of disagreement suggests that "real world" PCL-R scores are affected not only by adversarial allegiance but also by individual examiners' idiosyncratic scoring tendencies, regardless of the side for whom they testify: Boccaccini, Turner, and Murrie (2008) estimated that "about 45% of the variance would be attributable to offenders' true standing on the PCL–R; about 30%, to evaluator differences; and about 20%, to adversarial allegiance" (p. 279).

Although there is preliminary evidence that forensic assessment tools other than the PCL-R are also subject to some expert bias in adversarial contexts (Murrie et al., 2009 found that this was true of one of two actuarial risk-assessment tools), misuse of psychopathy measures may be especially prejudicial, given widespread misconceptions about psychopaths (e.g., that they are a different class with an untreatable emotional deficit that causes them to violently prey upon others). Analogue studies in which psychopathy evidence is manipulated in legal-case vignettes have produced mixed results on whether psychopathy diagnoses or trait descriptions unduly influence laypersons' or professionals' judgments about an offender's dangerousness, treatment amenability, culpability, and appropriate sentence (see Lloyd et al., 2010; Viljoen et al., 2011). Still, these analog studies yield clearer findings that the specific label psychopath has prejudicial effects on decision makers (Boccaccini, Murrie, Clark, & Cornell, 2008). Moreover, examples of serious misuse of psychopathy measures—where expert testimony is inconsistent with research or greatly exaggerates the implications of psychopathy—have been identified in reviews of real-world legal cases (DeMatteo & Edens, 2006, Viljoen et al., 2011; Walsh & Walsh, 2006).

Policy Implications

Evidence reviewed in the previous section indicates that there is enormous applied interest in psychopathy, particularly in juvenile and criminal justice settings, and that adversarial forces in these settings can promote misapplications of, and

misunderstandings about, this condition. Setting descriptive data about the status quo aside, what are the most promising implications of psychological science on the nature, etiology, development, and consequences of psychopathy for practice and policy? In this section, we draw upon research reviewed in the first part of this monograph to acknowledge current gaps in knowledge and ongoing controversies while highlighting areas of near consensus that can inform practice and policy.

Before beginning, we note one overarching gap in scientific knowledge, highlight unresolved controversies, and note one area of near consensus that apply to virtually all domains of practice and policy. First, we know a great deal about offenders with high scores on the PCL-R. However, the predominant focus on criminal samples and near-exclusive use of a single operationalization (namely the PCL-R and its variants), we know distinctly less about the construct of psychopathy itself. In a related sense, the bulk of knowledge so far generated has been about White male offenders; distinctly less is known about women and ethnic minorities. The review above suggests that some, but not all, findings generalize across divergent samples and psychopathy measures (e.g., scale structures and some key correlates). When findings are shown to hold across a greater "heterogeneity of irrelevancies" (different samples, psychopathy measures, laboratories, etc.; Shadish, 1995, p. 425), it will lend greater confidence that we are building knowledge about the construct of psychopathy rather than about the correlates of a single measure in a particular population (see Skeem & Cooke, 2010a, 2010b). Second, although most historic and contemporary definitions of psychopathy include elements of boldness, meanness, and/or disinhibition (as distilled in the triarchic description), there is a lack of consensus about what psychopathy really is. Predominant use of a single measure of psychopathy may conceal relevant ongoing controversies from practitioners and policymakers (i.e., whether adaptive features or antisocial behavior belong in the definition; whether psychopathy is a unitary or configural construct; and whether anxious, emotionally reactive individuals are fundamentally psychopathic). Third, setting these gaps in knowledge and controversies aside, there is fairly consistent evidence that the PCL-R identifies different kinds of offenders as psychopathic. Although these offenders share high scores on the PCL-R (which taps disinhibition, meanness, and, to a lesser extent, boldness), one kind of offender generally is consistent with classic theories of primary psychopathy, whereas the other is differentiated by significant anxiety, hostility, and emotional disturbance. As explained later, these differences appear policy relevant.

Having noted these generally applicable gaps, controversies, and consistencies, we now review implications of current research on psychopathy in three global domains: justice and intervention, prevention, and employment. In doing so, we distinguish when relevant between implications for practice (i.e., for individuals and the professionals who work directly with them) and policy (i.e., for groups of people and the stakeholders with an interest in how they are processed or treated, such as administrators, legislators, and members of the public). Given the breadth of the intended audience, policy implications are emphasized over those for clinical or legal practice.

Implications for justice and intervention domains

As noted earlier, psychopathy is most often applied in juvenile and criminal justice settings to inform legal decisions that turn upon dangerousness and treatment amenability. As shown later in this section, substantial data are available to inform these applications, given that the vast majority of psychopathy research focuses on offenders, uses the PCL-R and its derivatives, and focuses on predictive utility for crime including violence. Considerably less data are available to address the issue of criminal responsibility—particularly when issues of psychopathic brain function, structure, or both are raised.

Criminal responsibility

Applicability of general science on psychopathy. Opinions differ sharply on whether the psychological condition of psychopathic individuals who have been convicted of crimes should be a mitigating or aggravating factor in sentencing (Lyon & Ogloff, 2000). Scholars who emphasize *deontological* (fairness-related) moral considerations in criminal sentencing focus on data that psychopathy is a disorder that impairs moral judgment (e.g., S. J. Morse, 2008) and argue that psychopathy should generally be a mitigating factor (Glannon, 2008). These scholars assume that psychopathic individuals possess a deep-seated emotional deficit over which they have little or no control, so that punishing them for crimes they do not fully comprehend would be unjust. In contrast, scholars who emphasize *utilitarian* (consequentialist) moral considerations in sentencing focus on data that psychopathy is a risk factor for future crime and criminal recidivism (e.g., R. Salekin et al., 1996) and argue that psychopathy should generally be an aggravating factor in sentencing. The debates here are not easily resolved and hinge at least as much on social values as on scientific data.

The same holds for the even thornier question of whether psychopathic individuals should be held responsible *at all* for their crimes. In recent years, several prominent legal scholars (e.g., Levy, 2007; S. J. Morse, 2008) have proposed that psychopathic offenders should be excused from criminal responsibility on the basis of the not guilty by reason of insanity (NGRI) defense. For example, Morse contended that psychopathic individuals "do not have the capacity for moral rationality, at least when their behavior implicates moral concerns, and thus they are not responsible" (p. 208). For Morse and others, punishing individuals who are fundamentally incapable of comprehending the moral implications of their actions is ethically problematic. This argument runs counter to substantial legal precedent, which has traditionally excluded psychopathy and related conditions (e.g., antisocial personality disorder) from the NGRI defense (Reider, 1998). For instance,

Maibom (2008) argues that exonerating psychopaths on the grounds that they are "bad" (immoral) subverts the core purpose of the NGRI defense, which is to excuse people who are "mad" (legally insane). For such dissenters, the fact that psychopathic individuals often fail to grasp the full moral implications of their crimes is all the more reason to punish them and shield them from society (see also Erickson & Vitacco, in press).

Debates concerning whether psychopathic people should be excused from criminal punishment on the basis of the NGRI defense are complicated by at least two factors: (a) As noted earlier, increasing data suggests that psychopathy is dimensional rather than categorical, so it is unclear where on the psychopathy continuum (or continua, if, as we have argued, psychopathy is a confluence of two or more dimensions) society should draw the line for absolving criminals of responsibility (see also Morse, 2008, p. 209); and (b) there is no single NGRI standard, and hence no single answer to the question of whether psychopathic individuals should qualify for the NGRI defense. NGRI defenses differ largely in whether they emphasize primarily cognitive (thinking) considerations (e.g., knowing the difference between right and wrong), volitional (motivational) considerations (e.g., the capacity to conform one's conduct to societal norms), or both (Gracek, 2006; see also Skeem, Eno Louden, & Evans, 2004).

With respect to (b), data may inform, although cannot dictate, the question of whether the NGRI defense should apply to psychopathy; they can at best only inform because insanity is a legal, not a strictly scientific, concept. Bearing on the question of whether psychopathic people fulfill the cognitive prong of NGRI, as exemplified in the well-known McNaugten Rule (Moran, 2000), most evidence demonstrates that their reasoning about moral problems does not differ significantly from that of nonpsychopaths, leading one research team to conclude that "psychopaths know the difference between right and wrong but don't care" (Cima, Tonnaer, & Hauser, 2009, p. 59; but see Blair, Jones, Clark, & Smith, 1995). In one study, psychopathic inmates actually scored significantly *higher* than nonpsychopathic inmates and healthy comparison participants on a measure of moral reasoning using Kohlberg's familiar moral dilemmas (Link, Scherer, & Byrne, 1977). Still, S. J. Morse (2008) might contend that although psychopathic individuals can perform adequately on standardized tests of moral reasoning, they do not grasp the underlying emotional significance of morally laden transgressions, such as stealing, rape, or murder: They "know the facts and the rules" but are "color blind to moral concerns" (p. 209). There may well be some merit to this argument, but extending the NGRI verdict to encompass color-blindness to moral concerns may open up a Pandora's Box (Erickson & Vitacco, in press). One might well contend, for example, that many nonpsychopathic individuals who commit crimes, such as physically assaulting someone who has offended them deeply, are morally color-blind in the specific domain of their offense (see Johnson & Szurek, 1952, for classic writings on "superego lacunae"). Hence, Morse's argument could open the floodgates to exculpation for scores of crimes committed by nonpsychopathic people.

With respect to the question of whether psychopathic individuals would fulfill the volitional prong of the NGRI defense, matters become even murkier. Blair (2008) observed that there is growing evidence from brain-imaging studies that at least some psychopathic individuals are characterized by functional and perhaps structural deficits in brain areas that are relevant to impulse control and rational decision making, such as the ventromedial prefrontal cortex, amygdala, and perhaps the superior temporal cortex. As Blair noted, these deficits also "put the [psychopathic] individual at increased risk for frustration-based reactive aggression" (p.154). Still, the question of whether these deficits should excuse psychopathic people from criminal responsibility or mitigate their punishment is a remarkably complicated one that we do not intend to resolve here. We point out only that such deficits are almost surely matters of degree rather than of kind, so that even highly psychopathic individuals probably retain at least some modicum of control over their antisocial impulses. Hence, where one elects to draw the line for elimination or mitigation of criminal responsibility—if one elects to draw it at all—becomes a difficult societal decision that lies largely outside the boundaries of science.

Applicability of neuroscience to psychopathy. Contemporary enthusiasm about neuroscience and its potential application to legal issues have prompted some scholars to argue that psychopathic individuals should not be (harshly) punished for their criminal acts, given their deficits in brain function, structure, or both (e.g., Glenn, Raine, & Laufer, 2011; see also Kiehl & Buckholz, 2010). A case example is illustrative. Brian Dugan, a 52-year-old man already serving time for multiple murders, was newly convicted in 2009 of raping and murdering a young woman several years prior to the other murders and was facing the death penalty. He hired neuroimaging researcher Kent Kiehl to assess him with the PCL-R and an fMRI (26 years after the murder in question) to support a mitigation argument that he "is a psychopath and could not control his killer impulses" (Hughes, 2010, p. 340; see also Haederle, 2010). The jury, apparently unconvinced, unanimously voted to sentence Dugan to death. Beyond sentencing mitigation, this kind of argument may be offered to support NGRI or diminished-capacity defenses.

We believe that most attempts to apply current neuroscience on psychopathy to legal decisions about criminal responsibility and sentencing are premature. First, this research is methodologically limited, with small samples, diverse designs, and an assortment of nonreplicated findings (for a review, see Patrick et al., in press). Before the difficult process of validly applying group-based research findings to an individual case can be undertaken, there must be a coherent set of findings to apply.

Second, at present, it is unclear whether such data add to already-known information about psychopathic individuals' affective, interpersonal, and behavioral characteristics. For example, the finding that psychopathic people display deficits

in the processing of emotions, including fear, is already well established (e.g., Fowles & Dindo, 2006; Patrick, 1994), as is the finding that these people tend to exhibit poor impulse control. As a consequence, it is unclear what, if anything, structural or functional brain images add to this corpus of knowledge. Moreover, the finding that psychopathic individuals' emotional deficits are associated with functional brain correlates of some sort is hardly surprising, and indeed is a logical necessity from the standpoint of mind–body monism (the well-accepted scientific credo that the "mind" is merely the central nervous system in action).

Third, like some observers (e.g., Bloom, 2006; Racine, Bar-Ilan, & Illes, 2005), we worry that brain images may foster a seductive sense of "neurorealism" in jurors. Neurorealism is the tempting but erroneous belief that a psychological phenomenon is somehow "more genuine" if accompanied by brain evidence. As a result of neurorealism, triers of fact may place undue weight on brain-imaging evidence (see also McCabe & Castel, 2008). In a related sense, the finding of a structural or functional difference between the brains of psychopaths and nonpsychopaths does not indicate that this difference (a) is congenital, (b) immutable, or (c) leads inexorably to psychopaths' behavioral deficits. Nevertheless, some jurors may assume incorrectly that a brain-imaging abnormality in someone classified as a psychopath provides evidence of a longstanding lesion that propels that individual on a virtually ineluctable path toward a criminal career.

Fourth, arguments that an individual is not responsible for a given criminal act because of psychopathic brain deficits requires leaps that go well beyond any scientific data. If a defendant manifests reduced amygdala activity while viewing aversive photographs in an fMRI scanner, this does not explain why he murdered his spouse 2 years ago. The legal question of interest, is whether a particular individual manifested psychopathy-related brain deficits at the time of the crime *and* whether those deficits caused the criminal act of interest. Even among those with psychopathy, a given criminal act may reflect a host of factors other than psychopathic personality deviation.

For all of these reasons, we advocate caution in the use of psychopaths' brain-imaging abnormalities in courts of law. In addition, expert witnesses who elect to testify about psychopaths' brain-imaging deficits should be certain to inform triers of fact of the caveats we have presented.

"Dangerousness" or risk of future crime including violence. As suggested by practitioner surveys and case reviews, principally from North America, psychopathy measures—especially the PCL-R—are often applied to assess risk of violence and other forms of crime. Although psychiatric patients may be assessed for psychopathy to inform decisions about involuntary or civil commitment (see Skeem & Mulvey, 2001), the focus most often is on juvenile or criminal offenders and risk of reoffense. Given substantial relevant research on the PCL-R measures in this context, there are a number of implications for both practitioners and policymakers. Although these implications apply predominantly to the PCL-R and its progeny, many ostensibly would apply to other measures of psychopathy as well.

Score the psychopathy measure competently, fairly, and transparently. As shown earlier, poor rates of interrater reliability have been found for the PCL-R in adversarial contexts, based largely on the influence of evaluators' idiosyncratic scoring tendencies and whether an evaluator has been hired by the prosecution or the defense. Clear implications for practice are (a) to recognize that research-based reliability estimates for the PCL-R (and other clinician-rated tools) may not generalize to adversarial contexts, (b) to demand (lawyer, judge) and be prepared to offer (evaluator) evidence that the evaluator is capable of independently scoring the PCL-R in a manner that is consistent with expert ratings on a series of training cases, and (c) to clearly document (evaluator) and communicate all objective evidence *both* for and against a high score on each of the 20 PCL-R items in a particular case before arriving at a judgment about the appropriate score.

These recommendations are meant to maximize the consistency of the PCL-R assessment process with ethical principles of forensic practice, which stress accurate communication of an evaluator's competencies; documentation of relevant data and explanation of inferences drawn from those data; and avoidance of "partisan presentation of unrepresentative, incomplete, or inaccurate evidence that might mislead finders of fact" (Specialty Guidelines for Forensic Psychology Revision Committee, in press, p. 3). They also are consistent with the principle that an evaluator's job is to inform, not to usurp, the judgment of the trier of fact. As is the case in other psycholegal domains, an evaluator's conclusion about psychopathic traits (whether in the form of a PCL-R score or narrative summary) should rise no higher than the data and reasoning on which it is based (see *United States v. Horowitz*, 1973).

Precisely interpret what the psychopathy measure does and does not mean for risk. In both practice and policy contexts, a large body of research (see "Is Psychopathy Linked with violence and other crime?" above) is available to challenge widespread misconceptions about the relationship between psychopathy and criminal behavior. Most of this research is based on the PCL-R and its derivatives, which complicates understanding of the relationship because these measures include one variable of interest (antisocial behavior) in their definition of the other (psychopathy; see Blackburn, 2007). Nevertheless, some clarity has been introduced by consistencies across a number of studies that disaggregate the PCL-R scales, control for past criminal and other antisocial behavior, and use alternative measures of psychopathy like the PPI-R.

First, as we stated earlier, contrary to a widespread misconception, psychopathy does not invariably translate into violence or other criminal behavior. Conversely, criminal behavior including violence can be based on a host of factors other than psychopathic personality deviation (e.g., major mental disorder and substance abuse, neighborhood disadvantage, or

criminal associates; see Andrews, Bonta, & Hoge, 1990). Plainly speaking, high total scores on measures of psychopathy simply convey modestly to moderately higher risk of criminal behavior ($r \approx .25$) compared with lower scores.

Second, widespread claims to the contrary, the PCL-R and its derivatives—indeed, measures of psychopathy in general—have no special powers in predicting violence or other crimes. Instead, they are about as predictive as purpose-built violence-risk-assessment tools (e.g., Singh, Grann, & Fazel, 2011; M. Yang et al., 2010), perhaps because they are highly correlated with, and tap many of the same risk factors as, those broader-band tools (Kroner et al., 2005). Psychopathy measures derive most of their predictive utility from their Factor 2 assessment of past criminal behavior and disinhibitory traits (impulsivity, anger, negative affect); Factor 1 assessment of interpersonal and affective traits that are more specific to psychopathy play a distinctly lesser additive role (e.g., Walters, 2003) and have not been found to consistently interact with Factor 2 antisocial behavior to predict violent reoffending (Kennealy et al., 2010). In future research, it will be useful to examine the independent, additive, and potentially interactive utility of disinhibition, meanness, and boldness in predicting criminal behavior including violence. We speculate that the first two traits (particularly disinhibition and the aggressive components of meanness, which are conceptually close to violence and other crime) will possess considerably greater power to predict such outcomes than core boldness or fearlessness. Setting aside this gap in knowledge, existing data on offenders suggests that high scores on Factor 2 features of antisocial behavior (or, in children, conduct problems) convey greater risk of criminal behavior than Factor 1 interpersonal-affective traits of psychopathy.

Third, there is little or no empirical support for inferring that psychopathy *causes* or *explains* criminal behavior. Given the content of the PCL-R and its derivatives, a dense history of violent, criminal, and other antisocial behavior will (by definition) increase one's score on these measures. A large body of research indicates that high psychopathy scores (the antisocial factor and, to a much lesser extent the interpersonal-affective factor) precede and increase the likelihood of criminal behavior. So it is appropriate to infer that psychopathy is a risk factor for violence and other crime. However, little evidence is available to support widespread policy-relevant assumptions that psychopathy *causes* violence and other crime. In short, a high score on a psychopathy measure signifies, but does not uniquely or necessarily explain, increased risk.

Consider using a measure of anxiety, fearlessness, or negative emotionality to supplement the PCL-R. Although there are differences among the three constructs, anxiety, fearfulness, and negative emotionality seem to distinguish offenders with high scores on the PCL-R into subgroups that generally appear consistent with theories of primary and secondary psychopathy (e.g., Newman & Kosson, 1986). If practitioners and policymakers wish to disaggregate PCL-R psychopaths into more homogeneous groups, they should consider using measures of these constructs. There are two reasons to do so. First, although more research is needed, there is at least preliminary evidence that individuals with secondary psychopathy are at greater risk for violence than those with classic Cleckleyan or primary psychopathy. Ironically, the psychopathy variant that may be most relevant to public safety and public health (i.e., secondary) is the one that has received the least systematic attention. Second, when a high-risk offender (i.e., one with a high PCL-R score) is more emotionally reactive than emotionally deficient, conveying this to legal decision-makers will help challenge intuitive assumptions that high PCL-R scores signify fearlessness, a lack of anxiety, or general emotional stability.

Avoid suggesting that psychopathic features observed during childhood will remain stable into adulthood and relate to chronic offending. Juvenile psychopathy is a promising construct deserving further research, particularly research that focuses on developing novel and targeted intervention (see below). However, given current gaps in knowledge about the (a) long-term stability of psychopathic traits from childhood to adulthood and (b) the long-term predictive utility of juvenile psychopathy measures for adult antisocial behavior, we recommend that these measures *not* be used to inform decisions about youth that will have long-term implications. Given the lack of evidence that these measures identify inalterably dangerous youth who will mature into adult psychopaths, it seems inappropriate to apply psychopathy measures to determine whether a youth should be tried in the adult court system . . . even though this appears to be one of the most common uses of the concept of psychopathy with youth (Viljoen et al., 2010). Asserting that a youth "had an emerging personality disorder with psychopathic traits and therefore was a long-term risk" (R. v. L. [V.T.], 2001, as cited in Viljoen et al., 2010, p. 268) rests on little sound evidence. In the context of an adult-transfer hearing, it seems inappropriate to risk a false-positive error of this magnitude, given its likely enduring consequences on the youth's life.

What legal uses of these measures might be appropriate for youth in the risk-assessment context? Given their predictive utility, measures of juvenile psychopathy might be used as risk-assessment tools to inform short-term decisions about placement, particularly levels of security. Given that psychopathy measures seem to be even more associated with negative emotionality during adolescence than during adulthood (see above), using supplemental measures of anxiety, fearfulness, or negative emotionality may be particularly helpful for informing such risk-management decisions. Still, before selecting a measure of psychopathy over a validated risk-assessment tool, one must consider the potential for stigmatizing a child or adolescent with the unsavory label of "psychopath."

Ensure that a psychopathy measure is the best choice for addressing the psycholegal issue. This is perhaps the clearest implication of a well-developed body of research on the nature and strength of the relation between psychopathy measures and future criminal behavior. If practitioners' or policymakers' chief goal is to identify offenders who are relatively likely to

engage in such behavior, the PCL-R is a well-validated tool for doing so. However, the PCL-R—and indeed any extant measure of psychopathy—performs no better than a variety of purpose-built risk-assessment tools that encompass a broader range of risk factors and may invite fewer mistaken causal attributions about dangerousness. Before choosing a measure of psychopathy, it seems important to articulate what value that measure or construct will add in reaching a particular practice or policy goal, beyond that of a purpose-built risk assessment and/or risk management tool. This articulation is particularly vital in under-resourced systems. Because some validated risk-assessment tools (e.g., those that are automatically generated from computer algorithms or quickly completed by front-line staff) are infinitely less expensive than PCL-R assessments, the PCL-R arguably should be chosen only if it adds more information than simply whether someone is at high risk for reoffending. Similarly, if the purpose of assessing risk is to manage or reduce it, tools other than the PCL-R may be most appropriate. The PCL-R is poorly suited for use in planning management or treatment strategies, largely because it is relatively insensitive to change. Practitioners who are familiar with relevant psychological science on psychopathy and risk assessment may sometimes need to take an educational role with judges, lawyers, or other referral agents who may seek to specify the use of the PCL-R over other instruments, especially if there is reason to be concerned that they may misattribute the significance of the results.

Treatment amenability. Currently, the PCL-R and related measures are often used to inform legal issues that turn upon both dangerousness and treatment amenability (see "How is the Concept of Psychopathy Used in the Real World?" above). There is, for example, an interest in identifying offenders who are inalterably dangerous and therefore should be (a) transferred from the juvenile justice system (which traditionally has a rehabilitation focus) to the adult criminal justice system (which traditionally does not), or (b) designated a "dangerous offender" and indefinitely detained after serving a full sentence as punishment for a given offense. Beyond the courtroom, high PCL-R scores are sometimes interpreted as a "cannot be treated" marker that is used to deny offenders services (see, e.g., D'Silva, Duggan, & McCarthy, 2004). Perhaps because of entrenched therapeutic pessimism about psychopathy, very few controlled studies that actually assess psychopathic individuals' treatment outcomes have been conducted. Nevertheless, our review of relevant research has clear implications for practice and policy.

Precisely interpret what a high psychopathy score does and does not mean for treatment progress and outcome. Offenders with high scores on the PCL-R are, given the content of the measure, likely to manifest substantial traits of meanness and disinhibition. When these general traits encompass callousness and a lack of social connectedness, many clinicians will be reluctant to undertake what they may reasonably expect to be a challenging course of treatment. Indeed, our review indicates that those with high PCL-R scores behave in a relatively unpleasant, disruptive, and noncompliant manner in treatment . . . like other high-risk offenders. High PCL-R scores mean that there will almost certainly be challenges to the treatment process. The same may be true of those with high scores on the PPI-R as well as on other well-validated psychopathy measures.

In our view, high scores on measures of psychopathy also identify the clients that policymakers and practitioners should work hardest to help. Why? Because of growing evidence that youth and adults with psychopathy, particularly as assessed by the PCL measures, respond to appropriate treatment with reductions in violence and other criminal behavior . . . again, like other high-risk offenders. Arguably, reducing psychopathic offenders' risk for antisocial behavior is the chief policy goal for this group, given its direct relevance to public safety. For the primary behavioral outcome of interest, there is little or no compelling evidence that psychopathic individuals are untreatable. Put simply, a high score on a measure of psychopathy does not mean that an individual is inalterably dangerous.

We suspect that some clinicians' therapeutic nihilism may reflect a belief that offenders' basic psychopathic tendencies (that is, their core personality traits like lack of empathy) will never change, even if treatment successfully reduces the criminal nature of their characteristic adaptation to those tendencies (for more on the basic tendencies–characteristic adaptations distinction, see "Successful Psychopathy" above). For example, one examiner opined that a 15-year-old offender would "remain detached, egocentric, and unempathic, no matter what treatment he receives" (in R. v. M.[G.], 1992; as cited in Viljoen et al., 2010, p. 266). Given the paucity of research on this issue, it is premature to conclude that deep-seated psychopathic traits cannot be changed in treatment. Indeed, there is preliminary evidence that psychopathic individuals' risk factors for criminal behavior (if not their core psychopathic traits) can be reduced with appropriate treatment.

More importantly, a failure to distinguish between changing traits (about which little is known) and changing behavior (about which more is known) may continue to fuel such scientifically unfounded, blanket statements as "there is no effective treatment for psychopathy." These statements provide little or no useful direction for legal decision making and social problem solving. We recommend that practitioners and policymakers use science to interpret high scores on measures of psychopathy most precisely: These scores predict a challenging course of treatment, but appropriate treatment can reasonably be expected to reduce violent and other criminal behavior in at least some offenders.

Reframe offenders with high scores on measures of psychopathy as high-risk cases that are appropriate to target with intensive treatment. Our review suggests that findings on psychopathic offenders' treatment progress and treatment outcomes generally are consistent with the well-validated principle that correctional programs maximize public safety when they target high-risk offenders for intensive treatment and services. Rather than excluding those with high PCL-R scores from

treatment (as if the measure identifies a unique class), we recommend that these individuals be identified and referred for appropriate correctional treatment along with other high-risk offenders (as discussed earlier, "Do Psychopathic People Respond to Treatment"?).

Focus treatment-development efforts on psychopathic processes or mechanisms. Part of the reason that it may be unclear whether treatment goes beyond reducing antisocial behavior to change basic psychopathic tendencies is that there currently are no empirically supported treatment programs designed specifically for psychopathy, although several initiatives are underway (Wilson & Tamatea, 2011; Wilson & Wales, 2008).

In the United Kingdom, Canada, and Australasia, some high-intensity correctional treatment programs for high-risk offenders may be on the right track for changing psychopathic traits, even though they are not explicitly designed for this purpose. For example, both the Aggressive Behavior Control program in Saskatchewan, Canada (S. Wong, Gordon, & Gu, 2007; S. C. P. Wong, Witte, Gordon, Gu, & Lewis, 2006), and the Violence Prevention Unit program in New Zealand (Polaschek, 2011; Polaschek & Ross, 2010) are designed to work therapeutically to reduce the risk of violence and other crime in incarcerated men who happen to have high levels of psychopathic traits. In contrast, in the United States, most efforts to date have involved applying treatments designed for other problems (e.g., mental illness, substance abuse, antisocial behavior; see Skeem et al., 2009) to those with psychopathy, largely ignoring (or attempting to ignore) psychopathic traits.

An important policy-relevant gap in knowledge is whether treatment that is specifically designed for psychopathy yields even greater reductions in antisocial behavior than the less specific treatments studied to date . . . and whether such treatment reduces psychopathic personality traits per se. In principle, understanding the psychological processes that underlie psychopathy could inform the development of effective methods of treatment (Seto & Quinsey, 2006). To the extent that primary and secondary psychopaths differ in their emotional reactivity, different methods of treatment may optimize their outcomes. For example, treatment that targets high emotional reactivity (e.g., improving distress tolerance, reducing emotion-focused maladaptive coping, and problem solving) may be particularly relevant to reducing violence risk for those with secondary psychopathy.

These recommendations—interpret implications of psychopathy scores for treatment precisely, target those with high scores for intensive services, and develop treatment that specifically targets psychopathic mechanisms—apply particularly strongly to youthful offenders. Given that personality traits generally appear to be more malleable during childhood and adolescence than during adulthood, intervention for psychopathy may be particularly effective if it targets earlier developmental periods or key inflection points. There is reason to believe that early adolescence, in particular, is a key period for emotional learning and intervention (Dahl, 2004). Although scholars have long justified research on juvenile psychopathy by making the argument that relatively early identification to support relatively early intervention is needed, we are not aware of any treatment programs that have been specifically validated for psychopathic youth. This is a crucial gap in knowledge, particularly given case evidence that assumptions about lack of treatment amenability are sometimes extended downward to youth along with psychopathy measures themselves.

Implications for the domain of prevention

Although the outlook may change in the future, the current science on psychopathic personality disorder bears few specific implications for targeted prevention or true early-intervention efforts (defined as those focused on children ages 0–3). First, it is not clear that psychopathic personality deviation can be validly identified among infants and young children. Despite some efforts to assess psychopathy in children as young as age 3 (and even a few claims about doing so prenatally), validated measures of callous and unemotional traits have primarily been developed with considerably older children with conduct disorder. Given data on the (in)stability of relevant personality traits from early childhood to adulthood, it seems likely that error rates for psychopathy diagnoses in infants and very young children would be too high to justify attaching such a potentially stigmatizing label.

Second, even if a relatively stable and accurate measure of "baby fearlessness" or callous-unemotional traits existed, it is not clear that targeting these children specifically or differently with prevention and early-intervention efforts would appreciably increase public safety. According to available research, callous-unemotional traits alone do not identify a particularly problematic subgroup of children—it is when these traits are combined with conduct disorder that the group becomes more policy relevant. Given that broad-band prevention and early-intervention programs are available for conduct disorder and antisocial behavior (e.g., see Losel & Beelman, 2003), it is not clear that much would be gained by trying to focus on a still-more-narrow group of infants and toddlers at risk for psychopathy per se. As understanding of the nature and etiology of psychopathy improves, there may be more specific implications for prevention.

Implications for the domain of employment

Our review points to several implications concerning the use of psychopathy measures for screening applicants in employment settings. Some authors have advocated screening out applicants with elevated levels of psychopathy from certain occupations (G. Morse, 2004); their assumption is that psychopathic characteristics place applicants at heightened risk for destructive behaviors in the workplace (see Boddy, 2006). One blogger even wrote that "The time is ripe for a worldwide effort to formulate simple standardized procedures to filter

acutely psychopathic individuals from positions of economic, political, and social leadership" (Podolyak, 2010).

Have psychopathy-relevant tools been validated for pre-employment screening? Despite apparently keen interest in the topic, few tools are available to detect psychopathic traits specifically in employment settings. Using the PCL-R as a starting point and adapting its items to the business world, Babiak and Hare (2005; see also Babiak & Hare, 2006) developed the Business (B-Scan) 360 to detect psychopathic traits in the workplace. Nevertheless, as of this writing, there is no published peer-reviewed work on its validity.

Indeed, virtually nothing is known regarding the predictive validity of psychopathy measures for counterproductive work performance, nor about the likely error rates (false positives and false negatives) that could result from using such measures for pre-employment screening. For this reason, we regard the routine use of the measures for pre-employment screening as premature, both scientifically and ethically.

Although not specific to psychopathy, self-report "integrity tests," most of which consist of items assessing admissions of, and attitudes toward, antisocial behavior in the workplace, are used by several thousand U.S. companies to screen out employees who are ostensibly at risk for counterproductive work behaviors like stealing and absenteeism (Berry, Sackett, & Wiemann, 2007). A typical integrity-test item might ask respondents whether a financially strapped coworker who pilfers $100 from the cash register on a Friday afternoon but returns it first thing on Monday morning should be fired; those who answer "No" are presumed to be at risk for dishonest behavior in the workplace (Alliger, Lilienfeld, & Mitchell, 1996). Integrity tests correlate moderately to highly with psychopathy measures, particularly their Factor 2 antisocial factor (Connelly, Lilienfeld, & Schmeelk, 2006; see also Blonigen et al., in press).

Is psychopathy likely to predict uniformly poor job performance? Our review suggests that screening out applicants on the basis of global psychopathy scores is ill-advised, because some evidence suggests that psychopathy, at least those features relevant to boldness, are associated with successful functioning in certain work domains such as those involving leadership (see "Successful Psychopathy" above). For example, in a methodologically limited but intriguing study of 203 corporate professionals, Babiak, Neumann, and Hare (2010) found that PCL-R total scores (and scores on most PCL-R facets) were associated not only with being a poor "team player" and with a worse management style but also with superior communication skills, creativity, and strategic thinking.

Directions for addressing current gaps in knowledge. We speculate that the triarchic model could eventually provide a helpful framework for conceptualizing and testing the utility of psychopathy measures for pre-employment screening purposes. For example, high levels of boldness may be adaptive in some workplace positions, especially those that require leadership skills, but may be maladaptive when conjoined with high levels of disinhibition, meanness, or both. Research to test these potential statistical interactions is needed. Research to explore potential curvilinear relations between facets of psychopathy and performance in various employment positions will also be required. For example, at least in certain occupations (e.g., military, law enforcement, firefighting), a moderate "dose" of boldness may be adaptive, but at extreme levels boldness may merge into recklessness (e.g., the character of Sgt. William James as depicted by actor Jeremy Renner in the 2008 Academy Award winning film, *The Hurt Locker*; Bigelow, 2008).

Conclusion

Our review of the current status of knowledge on the concept of psychopathy highlights notable advances that have occurred in recent years along with gaps in a number of areas that bear important implications for practice and policy. Empirical and applied work on psychopathy over the past two decades have been dominated by one operationalization in particular—Hare's PCL and its variants, which include adult (PCL-R), child (APSD), and adolescent (PCL:YV) forms and a shorter-length screening version (PCL:SV). A considerable amount has been learned about the empirical correlates of the PCL-R inventories and their predictive utility for clinically relevant criteria (Hare, 1991, 2003). In this respect, these measures have helped to advance our knowledge about psychopathy and bring some degree of order to a literature previously marked by diverse and often poorly overlapping operationalizations. Moreover, in part because of the PCL measures, the field of psychopathy research is far more vibrant than it was several decades ago.

At the same time, growing data point to heterogeneity in what the PCL inventories measure as well as gaps in their coverage of essential aspects of psychopathy. Heterogeneity is evident both in the contrasting correlates of distinctive item subsets ("factors") within these inventories and in the trait profiles of individuals who attain very high overall scores on such inventories (i.e., so-called "psychopaths"). Indeed, perhaps the key bottom-line conclusion emerging from our review is that psychopathy, whether measured by the PCL or other measures, is not monolithic; it appears to be a combination and perhaps configuration of multiple traits, including disinhibition, boldness, and meanness (Lilienfeld & Fowler, 2006; Patrick et al., 2009). As a consequence, efforts to apply one-size-fits-all interventions and public policies to psychopaths may be doomed to failure. Moreover, public-policy efforts, such as those directed toward risk assessment or the pre-employment screening of individuals with marked psychopathic traits, will need to come to grips with the heterogeneity of psychopathy.

Gaps in the PCL's coverage include lack of criteria dealing directly with absence of anxiousness or fear (or, more broadly, the construct of boldness), which accounts at least in part for

the heterogeneity among high overall scorers on these inventories. As discussed in the latter sections of our review, the tendency of practitioners to interpret high scores on inventories of these types in a stereotypic manner, without considering issues of heterogeneity or content coverage, has perpetuated misunderstandings about the propensities and treatability of high-scoring individuals. Indeed, we have learned that many individuals meeting standard criteria for psychopathy appear to respond to psychosocial treatments, although many significant questions concerning treatment responsivity remain.

The fact that 20-plus years of research directed at understanding psychopathy in terms of one particular operationalization has left more questions unresolved than answered is not cause for concern or dismay. Rather, it is fundamentally what one expects to see over the course of systematic efforts to validate clinical constructs. As described by Cronbach and Meehl (1955), construct validation is an ongoing, iterative process in which measures developed to operationalize hypothetical constructs serve as transitional referents, giving way to new measures as their limitations become recognized and as the construct itself is refined to accommodate new observations, often from other measures. Alternative inventories such as the PPI and LSRP have garnered increasing interest in recent years as vehicles for expanding the study of psychopathy to individuals in the general population and improving our understanding of psychopathy facets and variants. These and other measures should shed light on the extent to which findings derived from the PCL and its variants extend both to other measures and to nonclinical populations. They may also help to elucidate controversies regarding the behavioral implications of psychopathy in noncriminal settings, such as the still-contentious and poorly understood construct of successful psychopathy (Hall & Benning, 2006), a construct that bears obvious implications for the worlds of business, politics, and other domains.

Efforts to understand similarities and divergences across findings for the PCL inventories in relation to alternative measures have contributed to valuable new perspectives on the nature and scope of the psychopathy construct and key issues to consider in measuring it (e.g., Lynam & Derefinko, 2006; Patrick et al., 2009). Although these perspectives and issues are too recent to have had a substantial impact on clinical practice or public policy, it is likely that further research that sheds light on the unresolved issues we have highlighted will translate naturally into these applied domains.

Notes

1. An alternative structural model of the PCL-R proposed by Cooke and Michie (2001) is based on a subset of 13 PCL-R items selected on the basis of conceptual and quantitative (e.g., item response theory) considerations. This model contains three factors organized around a coherent higher-order (superordinate) factor. For a recent critique of this model, see Hare and Neumann (2008).

2. As is true for the PCL-R item set (e.g., Cooke, Michie, & Hart, 2006; Hare & Neumann, 2006), the question of what higher-order structure best characterizes the PPI subscales remains a topic of some debate. The PPI two-factor model reported by Benning et al. (2003) has been replicated in subsequent exploratory factor analyses of data from college (Benning, Patrick, Salekin, & Leistico, 2005) and mixed college/prisoner samples (S. R. Ross, Benning, Patrick, Thompson, & Thurston, 2009). By contrast, a study by Neumann, Malterer, and Newman (2008) that focused exclusively on prisoner participants reported inadequate fit for the Benning et al. two-factor model using confirmatory factor analytic (CFA) criteria (see also Neumann et al., 2008). However, interpretation of this finding is uncertain given concerns that have repeatedly been raised about the over-conservativeness of CFA as a method for evaluating the internal structure of personality-inventory data (Church & Burke, 1994; Hopwood & Donnellan, 2010; McCrae, Zonderman, Costa, Bond, & Paunonen, 1996). More recent meta-analytic work comparing exploratory factor solutions for the PPI subscales in college/community samples and prisoner samples (Witt et al., 2010) indicates that the Benning et al. two-factor model effectively represents the structure of the PPI subscales (omitting coldheartedness) in nonincarcerated samples but that a somewhat different structural model may apply to data for prisoners.

3. Some moderator analyses indicate important variation within these overall results. For example, when data for U.S. prisons alone are disaggregated from those of other nations, weighted correlations are smaller (r =.13 for all misconducts, r =.10 for aggressive behavior; Guy et al., 2005).

4. This pattern may appear to indicate that psychopaths are more prone to instrumental offending, but this argument can only be made if we examine the full offence patterns of a representative offender sample. For example, perhaps both groups are equally likely to commit robberies for material gain, but the nonpsychopaths were more likely to commit murder.

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