Chapter 16

Psychopathy as Psychopathology

Key Developments in Assessment, Etiology, and Treatment

Jennifer E. Vitale and Joseph P. Newman

The psychopath is an individual characterized by limited affective experiences, known to act impulsively and often antisocially, but who nevertheless seems calm and at ease in the presence of others. Although clinically intriguing figures in their own right, the psychopaths’ overrepresentation in criminal samples, and their tendency toward impulsive, deviant behavior, provides strong, pragmatic motivation for understanding the factors that underlie the syndrome. In this chapter, we describe the traits associated with the syndrome, discuss new developments in the measurement of the syndrome, and then consider the most prominent findings relevant to etiological models of psychopathy. Finally, we provide an overview of research on the treatment of psychopathy.

Diagnostic Criteria

Psychopathy has been referred to as “the elusive category” (Lewis, 1974), a clinical syndrome that is still often mentioned synonymously with general criminal behavior, sociopathy, and antisocial personality disorder. The personality style we now know as psychopathy appears throughout psychiatric history, under different labels, as different subtypes of other disorders. For example, today’s psychopath would have been classified as one of Krapelin’s “morbid personalities,” who were impulsive and antisocial as well as predisposed to deception; as Schneider’s “affectionless” personalities, who lacked compassion and acted in a callous manner toward other individuals; or as Millon’s (1981) “aggressive” personalities, who have a “faith only in themselves and . . . [are] secure only when they are independent of those whom they fear may undo, harm, or humiliate them” (p. 181).

Historically, individuals in the field often trace the evolution of the concept of psychopathy to Pinel’s “manic sans delire,” which was a syndrome characterized by an individual’s repeated engagement in impulsive, destructive actions, in spite of intact reasoning (Pinel, 1806). This early, relatively objective conceptualization would later give way to conceptualizations of the syndrome that placed greater emphasis on moral
considerations—hence Rush’s “innate, preternatural moral depravity” (1812, p. 112) and Prichard’s (1835) “moral insanity.” Although the labels have varied, what has been constant is nosologists’ desire to classify this syndrome in such a way that it could be distinguished from other forms of mental illness and from general criminality.

It was such a desire that motivated Cleckley’s (1941/1988) work, The Mask of Sanity, which is now viewed as the seminal clinical description of the psychopathy syndrome. The Mask of Sanity provided detailed case histories and a set of specific criteria meant to distinguish the syndrome from the number of other disorders that had come to be included under the “psychopathy” label. Thus, through this work, Cleckley (1988) provided a means for distinguishing the psychopath from the “psychotic,” the “psychoneurotic,” the “mentally defective,” the “criminal,” and the “alcoholic.” The Mask of Sanity provided case descriptions of 15 psychopathic individuals and outlined 16 core traits of psychopathy that were formulated on the basis of these cases (see Table 16.1). Although later conceptualizations of the syndrome have, to different extents, attempted to encapsulate each of the criteria, the following six have most strongly influenced modern conceptualizations of the syndrome.

First, Cleckley (1988) described the psychopath as exhibiting “superficial charm and good intelligence” (p. 337). In his words, “The typical psychopath will seem particularly agreeable and make a distinctly positive impression when he is first encountered. . . . There is nothing at all odd or queer about him and in every respect he tends to embody the concept of a well adjusted, happy person. . . . signs of affectation or excessive affability are not characteristic. He looks like the real thing” (p. 338).

Second, the psychopath is “lacking in remorse or shame” (p. 337). The psychopath does not express genuine contrition for the antisocial acts he or she commits, and often cannot even see the purpose in feeling such remorse. When remorse is expressed, it is

<table>
<thead>
<tr>
<th>TABLE 16.1 Cleckley’s (1941/1988) Criteria for Psychopathy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superficial charm and good “intelligence.”</td>
</tr>
<tr>
<td>Absence of delusions and other signs of irrational thinking.</td>
</tr>
<tr>
<td>Absence of “nervousness” or psychoneurotic manifestations.</td>
</tr>
<tr>
<td>Unreliability.</td>
</tr>
<tr>
<td>Untruthfulness and insincerity.</td>
</tr>
<tr>
<td>Lack of remorse or shame.</td>
</tr>
<tr>
<td>Inadequately motivated antisocial behavior.</td>
</tr>
<tr>
<td>Poor judgment and failure to learn by experience.</td>
</tr>
<tr>
<td>Pathological egocentricity and incapacity for love.</td>
</tr>
<tr>
<td>General poverty in major affective reactions.</td>
</tr>
<tr>
<td>Specific loss of insight.</td>
</tr>
<tr>
<td>Unresponsiveness in general interpersonal relations.</td>
</tr>
<tr>
<td>Fantastic and uninviting behavior with drink and sometimes without.</td>
</tr>
<tr>
<td>Suicide rarely carried out.</td>
</tr>
<tr>
<td>Sex life impersonal, trivial, and poorly integrated.</td>
</tr>
<tr>
<td>Failure to follow any life plan.</td>
</tr>
</tbody>
</table>
often hollow, and rings false. As Cleckley writes: "Usually he denies emphatically all responsibility and directly accuses others as responsible, but often he will go through an idle ritual of saying that much of his trouble is his own fault. . . . More detailed questioning about just what he blames himself for and why may show that a serious attitude is not only absent but altogether inconceivable to him" (p. 343).

Third, the psychopath engages in "inadequately motivated antisocial behavior" (p. 337). Among the behaviors Cleckley included in this category were minor infractions such as lies, cheating, brawling, as well as more serious offenses, such as theft, fraud, and forgery. According to Cleckley, however, the crucial factor was not necessarily the type or severity of the behavior itself, but the psychopath's tendency to "commit such deeds in the absence of any apparent goal at all" (p. 343).

Fourth, the psychopath shows "poor judgment and failure to learn by experience" (p. 337). Despite the fact that these individuals are characterized by average intelligence, they nevertheless repeatedly make poor choices and evidence poor judgment in their attempts at goal attainment. Further, although the psychopath may be able to explain "what went wrong" in a particular situation (i.e., what he did that may have led to the poor outcome), he seems incapable of using this knowledge in future situations, thereby exhibiting an inability to use prior experience to guide future behavior.

Fifth, the psychopath is characterized by "incapacity for love" (p. 337). Although he or she may be "capable of fondness, of likes, of dislikes. . . . these affective reactions are, however, always strictly limited in degree" (p. 348). This apparent inability to experience deep emotion or to connect emotionally with others is an important criterion for distinguishing the psychopath from other antisocial individuals (e.g., Cooke, Michie, & Hart, 2006; Lykken, 1995).

The sixth characteristic is related to the fifth, and is the tendency for the psychopath to exhibit "general poverty in major affective reactions." Although the psychopath may express himself in ways that suggest that he is experiencing affective reactions (e.g., a short temper, a declaration of affection), these expressions do not convey a sense of long-lasting, deep emotional experience. There is no "mature, wholehearted anger, true or consistent indignation, honest, solid grief, sustaining pride, deep joy, and genuine despair" (p. 348).

Like Cleckley, McCord and McCord (1964) provided rich descriptions of the psychopathic individual. Harkening back to figures such as "Billy the Kid" as early examples of a prototypical psychopath, McCord and McCord placed great emphasis on defining characteristics such as aggression, impulsivity, excitement-seeking, guiltlessness, and "warped capacity for love." This last, also a core component of this syndrome described by Cleckley, receives particular emphasis. Psychopaths, as Maslow (1951) writes, "have no love identifications with other human beings and can therefore hurt them or even kill them casually, without hate, and without pleasure" (p. 173).

Early versions of the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association [APA], 1968) criteria for sociopathy and antisocial personality disorder included characteristics such as selfishness, guiltlessness, callousness, and impulsivity, which overlapped in many ways with the Cleckley criteria. However, although there was some overlap, the DSM criteria were not meant to reflect the psychopathy syndrome described by Cleckley and were developed separate from the psychopathy literature. Thus, although psychopathy has often been used synonymously with sociopathy and antisocial personality disorder, this is a mistake. Most importantly, recent editions of the DSM, including the DSM-5 (APA, 2013) have limited the criteria for
antisocial personality disorder (ASPD) to more specific behavioral criteria (e.g., conduct disorder present before age 15, repeatedly performing acts that are grounds for arrest, thereby excluding many of the individuals who would be considered psychopathic using Cleckley’s criteria. Second, emerging research suggests that the correlates of psychopathy and the correlates of ASPD are different in important ways (e.g., Verona, Sprague, & Sadeh, 2012).

**Assessment of Psychopathy**

Like many psychological disorders, the assessment of psychopathy has a complicated history—and present. Although there has long been consensus regarding certain core features of the syndrome, there has been less agreement regarding the best methods for assessing these features. Since the publication of Cleckley’s book, the field has seen a number of measures developed to assess psychopathy. In the earliest years, clinicians relied on either case-based “psychopathy prototype” assessments (e.g., Hare, Frazelle, & Cox, 1978) or the use of self-report measures selected to capture the personality traits associated with the syndrome, such as the Socialization (So) subscale of the California Personality Inventory and the Psychopathic Deviate (Pd) scale of the MMPI. However, these methods were not without limitations. In addition to poor diagnostic reliability, there was also a lack of uniformity in the field, as psychopathy findings based on one method were not necessarily generalizable to psychopaths assessed using another.

More recently, the field has seen two major advancements in the assessment arena. The first is the development of Hare’s Psychopathy Checklist and its many progeny (i.e., the Psychopathy Checklist–Revised, the Psychopathy Checklist: Screening Version, and the Psychopathy Checklist: Youth Version). The second is an emphasis on the development of self-report measures that focus on psychopathy specifically (as opposed to more general personality traits) and that can be used with noninstitutionalized populations.

**The Psychopathy Checklist**

In 1980, Hare developed the Research Scale for the Assessment of Psychopathy (Psychopathy Checklist; Hare, 1980). Designed to capture the prototypical psychopath as conceptualized by Cleckley, the measure transformed Cleckley’s 16 criteria into 22 items that could be scored using a semistructured interview and institutional file review. In 1991, a revised version of the checklist, which deleted two items from the original scale, was published (see Table 16.2). This Psychopathy Checklist–Revised (PCL-R; Hare, 2003) quickly moved to the forefront of psychopathy assessment. Each item on the 20-item checklist can be scored using interview and file review as 0 “not applicable to the individual,” 1 “applicable only to a certain extent,” or 2 “applicable to the individual.” Scores range from 0 to 40 and, although there is taxometric evidence suggesting the scale indexes a continuous construct (e.g., Walters, Duncan, & Mitchell-Perez, 2007), a diagnostic cut-off of 30 is often used in North American, male samples.

The development of the PCL-R provided a reliable method for assessing the psychopathy syndrome, and, by providing a common metric for researchers and clinicians, it also facilitated much of the psychopathy research conducted in the 1990s and 2000s. In fact, during that time, researchers and clinicians would be more likely to be called on to justify not using the PCL-R as their primary measure of psychopathy than vice versa. In the past several years, the assessment landscape has changed, however. Although still
TABLE 16.2 PCL-R Items (Hare, 1991/2003)

Glibness/superficial charm.
Grandiose sense of self-worth.
Need for stimulation/proneness to boredom.
Pathological lying.
Conning/manipulative.
Lack of remorse or guilt.
Shallow affect.
Callous/lack of empathy.
Parasitic lifestyle.
Poor behavioral controls.
Promiscuous sexual behavior.
Early behavior problems.
Lack of realistic, long-term goals.
Impulsivity.
Irresponsibility.
Failure to accept responsibility.
Many short-term marital relationships.
Juvenile delinquency.
Revocation of conditional release.
Criminal versatility.

at the forefront of psychopathy assessment, the PCL-R has been the subject of criticism. In response to certain of these limitations, the field has seen a new expansion in the development of alternative measures of the syndrome.

Three interrelated controversies associated with use of the PCL-R can be identified as having been particularly influential in the development of alternative assessments. The first relates to the factor structure of the instrument and the related question of whether violence is a "core" feature of the psychopathy syndrome (e.g., Bishopp & Hare, 2008; Cooke et al., 2006). The second relates to the generalizability of the instrument to alternative samples, including incarcerated women, and delinquent juveniles (e.g., Cooke & Michie, 1999; Kennealy, Hicks, & Patrick, 2007; Kosson, Smith, & Newman, 1990; Verona & Vitale, 2005). The third is the concern that a focus on psychopathy as assessed by the PCL-R has kept researchers from developing measures of psychopathy for noninstitutionalized populations (e.g., Skeem, Polaschek, Patrick, & Lilienfeld, 2011), along with the related issue of the importance of studying the "successful" psychopath.

PCL-R, violence, and the question of "factors." One of the PCL-R's clinical strengths is its power in predicting future dangerousness. High PCL-R scorers commit more violent criminal offenses than individuals with low scores and are more likely to violently recidivate than low scorers (see Hare & Hart, 1993; Hemphill, Templeman, Wong, & Hare, 1998; Salekin, Rogers, & Sewell, 1996, for reviews). In fact, on the basis of its associations with criminal recidivism and behavior, Hare (1998) has argued that PCL-R assessed psychopathy is "the single most important clinical construct in the criminal
justice system,” citing its usefulness in both risk assessments and treatment placement (see also Fuiro, 1995).

Importantly, the crucial role that the PCL-R plays in the criminal justice system also highlights the ways in which PCL-R psychopathy departs from the construct first described by Cleckley. For example, although Cleckley (1988) included “inadequately motivated antisocial behavior” among his 16 criteria, criminal behavior (and specifically violent criminal behavior) was not viewed as a necessary component of the syndrome. Rather, Cleckley (1988) argued that “many persons showing the characteristics of those described here do commit major crimes and sometimes crimes of maximal violence. There are so many, however, who do not, that such tendencies should be regarded as the exception rather than as the rule” (p. 262).

The debate surrounding the association between psychopathy and violence is not new. In 1974, Lewis wrote: “These reveal a preoccupation with the nosological status of the concept... its forensic implications, its subdivisions, limits, [and] the propriety of identifying psychopathic personality with antisocial behavior. The effect of reading solid blocks of literature is disheartening; there is so much fine-spun theorizing, repetitive argument, and therapeutic gloom” (pp. 137–138). Similarly, in 1981, Millon wrote “50 years ago the same issues were in the forefront, notably whether the psychopathic personality was or was not synonymous with overt antisocial behavior” (p. 184).

This question continues to be among the most divisive arguments in the field today, as researchers and clinicians argue over the PCL-R’s emphasis on antisocial behavior; and its inclusion of items assessing specific forms of criminal behavior (e.g., juvenile delinquency, criminal versatility, revocation of conditional release). Critics of the measure have argued that such items are not necessary for diagnosing the syndrome originally conceptualized by Cleckley (Cooke et al., 2006) and they believe that the reliance on specific criminal behaviors overemphasizes this aspect of the syndrome at the expense of the personality traits theorized to lie at its core (Lilienfeld, 1994; Skeen et al., 2011).

In the 2000s, this debate played out, in part, through a series of articles surrounding the analysis and interpretation of the PCL-R’s factor structure. Initial Exploratory Factor Analysis of the PCL-R revealed two correlated (.50) factors (Harpur, Harkstien, & Hare, 1988). The first, Factor 1, was dubbed the affective/interpersonal factor as it included those items representing many of the deficient emotional and interpersonally manipulative characteristics of the syndrome (e.g., glib/superficial charm, manipulative, callous, shallow affect). The second, Factor 2, became known as the social deviance or impulsive/antisocial lifestyle factor on the basis of its inclusion of those items measuring the psychopath’s antisocial and criminal behavior (e.g., poor behavioral controls, impulsivity, early behavior problems).

In recent years, the two-factor conceptualization of the PCL-R has been repeatedly called into question. For example, Cooke and colleagues (Cooke et al., 2006) argued that analyses suggest that the two factor solution represents a poor fit to the data and campaigned for a reconceptualization of the measure as comprising three factors: Factor 1 (Interpersonal), Factor 2 (Affective), and Factor 3 (Lifestyle). The first two factors essentially divide the original Factor 1 into two component parts, interpersonal and affective. Importantly, this three-factor solution, although a significantly better fit to existing data than the traditional two-factor model (Cooke, Michie, Hart, & Clark, 2004) also excludes 7 PCL-R items. Cooke and colleagues have argued that this exclusion is necessary to purge the instrument of the specifically criminal beha...
items that they believe are not core features of the syndrome (Cooke et al., 2006), an argument strongly refuted by Hare and colleagues (Hare, 2003; Neumann, Hare, & Newman, 2007).

Researchers continue to look for ways to address the concerns raised by the PCL-R’s inclusion of overtly antisocial items. For example, researchers routinely conduct analyses to examine separately the contributions of those items associated with the interpersonal/affective components of the syndrome (i.e., Factor 1) versus the impulsive/antisocial items (i.e., Factor 2) when investigating the deficits underlying the syndrome (e.g., Patrick, Bradley, & Lang, 1993), a practice that has revealed that external criteria may relate differentially to these factors (e.g., Hansen, Johnsen, Thornton, Waage, & Thayer, 2007; Vaidyanathan, Hall, Patrick, & Bernat, 2011).

Despite the existence of unique correlates of Factors 1 and 2, there are those who argue that there is not good evidence to suggest that any one component of psychopathy is primary over any other component (e.g., Hare, 2003; Neumann et al., 2007) and that psychopathy is best conceptualized as a unidimensional construct. Essentially, this argument holds that the PCL-R as a whole best captures the syndrome originally described by Cleckley (1988), and that this “‘whole’ may be greater than the sum of the ‘parts’” (Neumann et al., 2007). Thus, although psychopathy may have several components, it is best conceptualized as a “super-factor” (Neumann et al., 2007).

The factor debate reflects the larger disagreement regarding the nature of psychopathy and questions regarding the “core” features of the syndrome. It is clear that some in the field would like to separate out serious criminal behaviors, worried that these items foment a definition of psychopathy that will exclude individuals with many of the same features who have not committed an explicitly criminal act (Lilienfeld & Andrews, 1996). Such individuals may actually be “commended and reinforced in a competitive society where tough hard-headed realism is admired as an attribute necessary for survival” and who may live on “the rugged side of the business, military, or political world” (Millon, 1981, p. 181–182).

It is a key debate, because understanding the core features of the disorder is crucial, not only for improving our ability to assess the syndrome reliably, and increasing our understanding of the etiology of the syndrome, but also for clarifying how the syndrome may be expressed across populations. This debate is directly relevant to the next controversy, which involves the generalizability of psychopathy assessment, and the PCL-R especially, across groups.

**Generalizability Across Groups**

Much of the early PCL-R psychopathy research was limited by a reliance on samples of institutionalized, Caucasian, North American adult males. Fortunately, there has been a more recent literature that examines the expression and correlates of psychopathy in other groups, particularly female offenders and African-American offenders (see Verona & Vitale [2005] and Sullivan & Kosson [2006] for reviews).

The results in this area have not always been clear-cut. Specifically, although evidence supports the reliability of psychopathy assessments among female populations (e.g., Cale & Lilienfeld, 2002; Miller, Watts, & Jones, 2011; Salekin, Rogers, & Sewell, 1997; Vitale, Smith, Brinkley, & Newman, 2002) and across racial groups (e.g., Vachon, Lynam, Loeber, & Stouthamer-Loeb, 2012), the evidence for the generalizability of laboratory-based, etiological-relevant correlates of psychopathy across gender and race is more limited.
For example, several key deficits in emotion-related responding have not been demonstrated among African American offenders (e.g., Baskin-Sommers, Newman, Sathasivam, & Curtin, 2011) nor among female offenders (e.g., Anton, Baskin-Sommers, Vitale, Curtin, & Newman, 2012; Vitale, MacCoon, & Newman, 2011). Similarly, maladaptive response perseverance and poor passive avoidance learning, both well documented among psychopathic males, have not been reliably demonstrated by psychopathic females (e.g., Lorenz & Newman, 2002; Vitale & Newman, 2001; Vitale et al., 2005). In addition, differences across gender in laboratory-based assessments have been found in studies of adolescents with high levels of psychopathy traits (e.g., Isen et al., 2010; Vitale et al., 2005; Wang, Baker, Gao, Raine, & Lozano, 2012).

The desire of the field to generalize psychopathy findings to alternate samples leads directly to the final challenge to the PCL-R, which is the inability to use the measure to assess psychopathy in noninstitutionalized populations. As a result of this key limitation, as well as the concerns surrounding the instrument's reliance on overt antisociality, there is a strong emphasis in the field on developing alternative measures of the psychopathy construct. In the next section, we provide a brief overview of these alternative measures.

**Alternative Measures of Psychopathy**

Although the PCL-R is the most commonly used assessment of psychopathy, other measures—some designed specifically to address limitations in the use of the PCL-R—have been developed over the past two decades. Some of these measures, such as the PCL: Screening Version (PCL:SV; Forth, Brown, Hart, & Hare, 1996), PCL: Youth Version (PCL:YV; Forth, Kosson & Hare, 2003), and the Self-Report Psychopathy scale (SRP-II, -III; e.g., Williams & Paulhus, 2004) are direct descendants of the PCL-R, designed to be used with specialized groups or in noninstitutional settings.

For example, the PCL:SV was created as a way to assess psychopathy using less information and without formal criminal records, which increases its utility in psychiatric and noninstitutional settings (Fortho et al., 1996). Generally, research suggests that the PCL:SV captures a syndrome similar to the PCL-R. The two measures are highly correlated (with an average correlation of .8) (Cooke, Michie, Hart, & Hare, 1999). The PCL:SV exhibits a factor structure and item functioning similar to the PCL-R (Hill, Neumann, & Rogers, 2004), and the PCL:SV is a good predictor of violent behavior (e.g., Douglas, Ogloff, Nicholls, & Grant, 1999; Skeem & Mulvey, 2001).

Whereas the PCL:SV is predicated on the belief that psychopathy can be assessed using less detailed information, the PCL:YV is based on the assumption that the psychopathy syndrome observed among adults can be extended back into adolescence. Thus, although the items in the PCL:YV are based on the adult PCL-R, they have been modified to capture the syndrome as it might appear in adolescents ages 12 to 18 (Fortho et al., 2003). Research using the PCL:YV has demonstrated reliability in both male and female samples (e.g., Bauer, Whitman, & Kosson, 2011) and has shown that the measure relates to criterion variables in ways that would be predicted based on PCL-R research with adults. For example, relative to adolescents with low scores, adolescents with high scores on the instrument commit more, and more violent, crimes (Kosson, Cytarski, Steuerwald, Neumann, & Walker-Matthews, 2002). PCL:YV scores are also significantly, inversely associated with familial attachment (Kosson et al., 2002).

Because the PCL:YV, like the PCL-R, requires a lengthy interview procedure, alternative measures of psychopathy for youth have been developed. For example, the Antisocial
Process Screening Device (APSD; Frick & Hare, 2001) is a 20-item rating scale that can be used as a self-report measure or as a teacher and parent report measure. Items on the APSD tap the interpersonal (e.g., superficial charm, lack of empathy), emotional (e.g., shallow affect), and behavioral (e.g., reckless antisocial behaviors, impulsivity) characteristics of psychopathy.

Research has shown that the APSD is associated with many of the personality traits and laboratory deficits exhibited by psychopathic adults. For example, high scores on the APSD delineate a group of individuals who exhibit higher rates of conduct problems and police contacts, and stronger family histories of antisocial behavior than groups characterized by lower scores (Christian, Frick, Hill, Tyler, & Frazer, 1997; Pung, Gao, & Raine, 2010; Munoz & Frick, 2007). Higher scores on the APSD are also associated with decreased empathy, perspective taking, and fearfulness (R. Blair, 1999; R. Blair, Monson, & Frederickson, 2001). Finally, laboratory studies have demonstrated that adolescents characterized by the callous, unemotional traits assessed by the APSD exhibit perseverative responding on a task requiring them to modify an initial reward-oriented response strategy in light of increasing rates of punishment (e.g., O'Brien & Frick, 1996), as well as reduced interference on a Picture-Word Stroop and deficits in passive avoidance on a go-no-go task (Vitale et al., 2005), although this latter finding was specific to male participants.

The Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002) and YIP–Child Version (YPI-CV) have been shown to relate to key correlates of psychopathy, including conduct problems and proactive aggression (Rucevic, 2010; van Baardewijk, Vermeiren, Stegge, & Doreleijers, 2011), as well as self-reported antisocial attitudes and impulsivity (Campbell, Doucette, & French, 2009). The scale shows moderate correlations with factors of the PCL-YV (Andershed, Hodgins, & Tengstrom, 2007), and correlates with other self-report measures of psychopathy (Campbell et al., 2009).

Although there appears to be good evidence, especially among males, that measures such as the PCL-YV, the APSD, and—perhaps—the YPI-CV can assess a syndrome in adolescents similar to the psychopathy syndrome assessed in adults, there is considerable controversy regarding the assessment of psychopathy in youth. For example, there is not clear evidence that psychopathy assessments of adolescents have the same forensic utility as those made for adults (Cauffman, Kimonis, Dmitrieva, & Monahan, 2009). Others hold that a psychopathy label has become synonymous with increased dangerousness and poor treatment response (e.g., Edens, 2006; Lykken, 1995), beliefs that might hinder intervention attempts for youth. Further, because the psychopathy-like syndrome assessed among children and adolescents may reflect transient developmental processes, some have argued that it is inappropriate to use such a label in this group (e.g., Edens, Skeem, Cruise, & Cauffman, 2001; Skeem & Cauffman, 2003).

Nevertheless, there is clear evidence that many of the behaviors and performance abnormalities associated with adult psychopathy are apparent in youth. Further, those who use these measures note that ratings of items are based on the frequency, duration, and intensity of the attitudes and behaviors exhibited by the individual (Gretton, Hare, & Catchpole, 2004; Lynam, 1996), thereby decreasing the likelihood that scores will represent normal transitory developmental processes. Consistent with this assertion, in community samples the mean PCL-YV score is low (i.e., a score of 5 out of a possible 40) (Forth et al., 2003) and assessments of juvenile psychopathy appear to be relatively stable across adolescence (e.g., Lynam et al., 2009; Neumann, Wampler, Taylor, Blonigen, &
Iacono, 2011). On this basis, the counterargument is made that, by neglecting to examine psychopathy in adolescents, researchers, and clinicians may be giving up an important opportunity for examining the development of the syndrome across time and for designing interventions that might prevent the adolescent with psychopathic traits from becoming the adult psychopath (Frick, 1998; Lynam, 1996; Vitale et al., 2005).

Just as we have sought new, more efficient ways to assess the psychopathy syndrome among adolescents, the field has developed more efficient alternative measures of the syndrome in adults. Thus, in addition to the PCL:SV and PCL:YV, Hare and colleagues (e.g., Hare, 1985; Hare, Harpur, & Hemphill, 1989; Williams, Paulhus, & Hare, 2007) have developed the Self-Report Psychopathy scale (SRP, SRP-II, SRP III) as a self-report measure of the syndrome in adult samples. The SRP-II and SRP-III are reliable (Neal & Selbom, 2012) and relate in expected ways with correlates of the psychopathy syndrome, including scores on the PCL as well as measures of alcohol abuse, narcissism, empathy, Machiavellianism, agreeableness, and conscientiousness (e.g., Paulhus & Williams, 2002; Zagon & Jackson, 1994; Watt & Brooks, 2012).

In addition to the direct progeny of the PCL-R, a number of self-report measures have developed relatively independently, in order to provide a means to assessing psychopathy in noninstitutionalized samples. These measures emphasize the traits associated with the syndrome, rather than emphasizing the numbers of disinhibited behaviors or criminal acts. Chief among these are the Primary and Secondary Psychopathy Scales (SRPS; Levenson, Kiehl, & Fitzpatrick, 1995) and the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996).

The SRPS is a 26-item self-report measure developed by Levenson and colleagues (Levenson et al., 1995). The scale has two components: the "primary scale," which is positively correlated with disinhibition and boredom susceptibility and negatively correlated with harm avoidance on the Multidimensional Personality Questionnaire, and the "secondary" scale, which is associated with stress reactions. In a test of the validity of the SRPS, Brinkley, Schmitt, Smith, and Newman (2001) compared scores on the measure to PCL-R scores in an institutional sample. Results showed that the PCL-R was associated with the SRPS, and, more importantly, that the SRPS related in predictable ways to substance abuse, criminal versatility, and passive avoidance task performance. Similarly, additional research has found that SRPS scores relate in expected ways with a number of psychopathy correlates, including self-reported delinquency, low-agreeableness, and performance on a "go-no-go" passive avoidance task (e.g., Lynam, Whiteside, and Jones, 1999; Selbom, 2011).

Like the SRPS, the PPI was developed to emphasize the traits associated with psychopathy (Lilienfeld & Andrews, 1996). The PPI is a 187-item self-report measure with 8 subscales, including Machiavellian Egocentricity, Coldheartedness, Social Potency, Carefree Nonplanfulness, Fearlessness, Impulsive Nonconformity, Blame Externalization, and Stress Immunity. Research shows that the PPI correlates with PCL-R total scores (Poythress, Edens, & Lilienfeld, 1998; Poythress et al., 2010), and also with adult and childhood antisocial behavior and institutional misconduct (Edens, Poythress, Lilienfeld, & Patrick, 2008; Edens, Poythress, Lilienfeld, Patrick, & Test, 2008), measures of emotional empathy (Sandoval, Hancock, Poythress, Edens, & Lilienfeld, 2000), and self-report aggression and dominance (Edens, Poythress, & Watkins, 2001).

Although some have argued that these measures designed specifically to assess psychopathy are preferable over personality measures that may simply assess generalized behavioral deviance (Lilienfeld, 2006), others have held that traditional personality
measures are entirely appropriate in the assessment of psychopathy. For example, Lynam and Derefkino (2006) have argued that psychopathy is best conceptualized according to the traditional Five-Factor Model (FFM) of personality, and that psychopathy is easily captured by the traits and facets of personality measures like the NEO-PI-R. According to the proponents of this approach, conceptualizing psychopathy in accordance with existing personality traits places the syndrome within the context of well-validated personality theory that is already strongly connected to research in diverse areas, including genetics, development, and neurobiology (Lynam & Derefkino, 2006).

Widiger and Lynam (1998) have suggested that each item of the PCL-R can be easily represented by facets within the FFM. For example, according to the authors, “glibness/superficial charm” is represented by low self-consciousness, and “shallow affect” as low warmth, low positive emotionality, low altruism, and low tender-mindedness. To test the validity of this profile, Miller, Lynam, Widiger; and Leukefeld (2001) asked psychopathy experts to generate an FFM profile of the prototypical psychopath on the basis of their understanding and knowledge of the syndrome. Importantly, the profile generated by these experts was similar to that generated by the theorists. Similarly, Derefkino and Lynam (2007) found support for conceptualizing psychopathy according to the FFM in a sample of drug abusers.

Further, in later research, Lynam and colleagues (Lynam & Widiger, 2001; Miller & Lynam, 2003) were able to calculate the Psychopathy Resemblance Index (PRI), which is a measure of the extent to which an individual resembles the FFM prototype. Research supports the argument that scores on the PRI do capture many of the qualities associated with psychopathy, as these scores are associated with an earlier age of onset of delinquency, greater criminal versatility, earlier drug use, and lower internalizing problems (Miller et al., 2001). Among college students, PRI scores were associated with higher rates of substance abuse, riskier sex, criminal versatility, more aggression, and were also predictive of performance on psychopathy-related laboratory tasks (i.e., the use of aggressive responses on a social-information task, and less willingness to delay gratification on a time-discounting task) (Miller & Lynam, 2003).

More recently, Lynam and colleagues have developed the Elemental Psychopathy Assessment (EPA), a self-report measure that is based on the five-factor trait model. The scales assess the 18 traits that have been demonstrated to be associated with psychopathy and, in both forensic and college samples, scores on the EPA have been shown to correlate with existing psychopathy measures (i.e., SRP-III, PPI-R), and to show expected associations with correlates of psychopathy, including aggressive social cognitions, antisocial personality features, and romantic infidelity (Miller et al., 2011; Wilson, Miller, Zeichner, Lynam, & Widiger, 2011) and alcohol use and antisocial behavior (Lynam et al., 2011).

Conclusions

One of the great advantages of the PCL-R and its progeny has been the unification of the field. Although some have cautioned that this unification may have come at the expense of the development of alternative measures, the benefit to clinical work and laboratory research of having a shared conceptualization of the syndrome should not be underestimated (Hare, 1996). Further, the PCL-R has not entirely inhibited the development of alternative, non-PCL based measures.
PREVALENCE OF PSYCHOPATHY

Because much of the research on psychopathy has been conducted in institutional settings, our understanding of the rates of the disorder in these samples is more advanced. For example, among North American male offenders, the rates of psychopathy range from 15% to 49% (e.g., Hervey, Mitchell, & Cooper, 2004; Salekin, Rogers, Ustad, & Sewel, 1998). Similar rates have been found among forensic populations in Sweden (i.e., 23% to 32%) and Spain (18% to 38%). There does appear to be some variation within and between international samples. For example, rates in Scottish samples have been as low as 3% (Cooke & Michie, 1999), whereas among British samples, they have ranged from 4.5% in a prison sample to 47% in a psychiatric sample (see Sullivan & Kosson, 2005, for a review).

Rates tend to be lower in incarcerated female samples, with rates among incarcerated females as low as 9% to 20% (Lehman & Ittel, 2012; Salekin et al., 1997; Vitale et al., 2002). This range does not change much, even when a lower diagnostic cut-score of 2 is used (e.g., Lehman & Ittel, 2012).

Psychological Models and Somatic Factors

Causal models of psychopathy emphasize both the emotional and cognitive characteristics associated with the syndrome. Although some approaches emphasize psychopathy's deficits in fear and focus on associated abnormalities in amygdala functioning (e.g., R. Blair, 2006), an alternative approach is to consider the behavioral abnormalities associated with psychopathy as reflecting a response modulation deficit associated with abnormalities in attention processes (e.g., Gorenstein & Newman, 1980).

FEARLESSNESS, FEAR-CONDITIONING, AND AMYGDALA ABNORMALITIES

Several theoretical formulations have emphasized fearlessness or insensitivity to punishment as underlying causes of the psychopathy syndrome (e.g., Fowles, 1980; Lykken, 1995). Early theories of psychopathy embraced Gray’s (e.g., Gray & McNaughten, 2008) model of BIS/BAS functioning, which proposed three systems that served to regulate behavior: the fight/flight system (FFS), which responds to unconditioned or innate aversive stimuli; the behavioral activation system (BAS), which was described as sensitive to reward stimuli and likely to activate responses in the face of cues or conditioned stimuli signaling reward; and the behavioral inhibition system (BIS), described as sensitive to punishment stimuli and likely to inhibit ongoing responses in response to cues or conditioned stimuli signaling punishment or frustrative nonreward. Importantly, recent formulations of the model have deemphasized the idea that the BIS reflects generalized sensitivity to threat, and instead has suggested that the BIS is activated specifically under conditions of goal conflict (Gray & McNaughten, 2000).

Working from Gray’s original model, Fowles (1980) proposed that the psychopathy syndrome characterized by impulsivity, callousness, and an absence of neurosis was associated with deficits in the BIS. According to this formulation, a hyporeactive BIS, in conjunction with a normal BAS response, could result in the types of symptoms observed among psychopaths. Specifically, these individuals would show the poor punishment learning and weak behavioral inhibition characteristic of the psychopath (Fowles, 1980).
Self-report data have supported this proposition, with those psychopaths characterized by low levels of neurotic anxiety showing significantly lower scores on self-report measures of BIS functioning and punishment sensitivity (e.g., Newman, MacCoon, Vaughn, & Sadeh, 2005; Ross et al., 2007). Conversely, it was found that those individuals whose psychopathy symptoms were combined with high levels of trait anxiety or neuroticism (so-called secondary psychopaths) were characterized not by deficits in the BIS, but by hyperresponsivity of the BAS (Newman et al., 2005).

Early and current experimental data support the weak BIS formulation. For example, passive avoidance tasks, which require the individual to inhibit responses to previously punished stimuli, have reliably differentiated psychopaths from controls, with psychopaths committing significantly more passive avoidance errors (e.g., Lykken, 1957; Newman & Kosson, 1986; Newman & Schmitt, 1998; Thornquist & Zuckerman, 1995). Similarly, on a card-playing task that requires the ability to modulate responses in the context of increasing punishment contingencies, psychopaths play significantly more cards and lose significantly more money than controls (e.g., Newman, Patterson, & Kosson, 1987).

Physiological data also support the BIS hypothesis. For example, both psychopathic offenders and nonincarcerated individuals with high levels of psychopathic traits show decreased electrodermal responsivity in anticipation of an aversive event (Arnett, Howard, Smith, & Newman, 1993; Dindo & Fowles, 2011; Wang et al., 2012) and show abnormalities in eye-blink startle responses (Anderson, Stanford, Wan, & Young, 2011; Flor, Birbaumer, Herrmann, Ziegler, & Patrick, 2002; Levenston, Patrick, Bradley, & Lang, 2000; Patrick et al., 1993; Sutton, Vitale, & Newman, 2002). Specifically, research has demonstrated that exposure to aversive or unpleasant stimuli will potentiate an eye-blink startle response in controls. Psychopaths, however, show significantly reduced startle potentiation in response to these stimuli, although their startle response to pleasant stimuli does not differ from that of controls. Importantly, this finding has been linked most closely to the affective-interpersonal (i.e., Factor 1) features of psychopathy (Vaidyanathan e al., 2011).

Taken together, these self-report and laboratory data provide some evidence for deficient BIS functioning. However, other theorists have focused less on BIS functioning than on fearlessness as a trait. For example, although Lykken’s (1957, 1995) low-fear hypothesis dovetails well with Fowles’ (1980) emphasis on deficient BIS functioning, Lykken places less emphasis on the particulars of Gray’s model. Rather, Lykken (1995) proposed that the psychopath is characterized by fearlessness, which impedes normal socialization and results in the cluster of symptoms characteristic of the syndrome (e.g., failure to learn from experience, lack of empathy, irresponsibility, manipulativeness). This proposal is based, in part, on the results of his highly influential 1957 study of conditioning in psychopaths. The results of this seminal study showed that the psychopaths (designated on the basis of their similarity to Cleckley’s prototype) had lower scores on a self-report measure of fearfulness (i.e., the Activity Preference Questionnaire), showed poor electrodermal conditioning relative to controls in a paradigm wherein electric shock served as the (Unconditioned Stimulus; UCS), and also exhibited deficient passive avoidance performance (Lykken, 1957). Taken together, these data suggested deficient fear conditioning among psychopaths, and served as the basis for Lykken’s “low-fear” hypothesis.

Although there are data to support the weak-BIS and low-fear theories, R. Blair (2006) has criticized these traditional low-fear formulations on the basis of increasing specificity in the neurocognitive literature. Consequently, Blair (2006) emphasized the
role of the amygdala in psychopathy and has focused primarily on punishment-based learning associated with this structure. Blair (2006) argued that psychopaths should show abnormalities only on those tasks that involve the formation of associations between a conditioned stimulus and an unconditioned response (CS-UR) (e.g., a galvanic skin response to a stimulus previously associated with a shock); between a conditioned stimulus and an affect representation; and between a conditioned stimulus and the valenced sensory properties of the unconditioned stimulus associations (e.g., the visual appearance or smell of the unconditioned stimulus).

Consistent with Blair’s proposal, psychopaths have demonstrated deficits on tasks that preferentially involve these types of learning. For example, psychopaths show impairment on aversive conditioning tasks, which involve amygdala-specific learning (i.e., CS-UR and CS-affect representation associations) (Flor et al., 2002; Lykken, 1957; Rothemund et al., 2012). Further, there is evidence that, relative to controls, psychopaths show reduced amygdala activation during such aversive conditioning tasks (e.g., Veit et al., 2002), and that adolescents with high levels of psychopathic traits show relatively less amygdala responsiveness than controls on a passive avoidance task (Finger et al., 2011).

Differences in amygdala activation have also been noted in studies of both adults and juveniles with high versus low psychopathic traits (Glenn, Raine, & Schug, 2009; Jones, Laurens, Herba, Barker, & Viding, 2009; Marsh et al., 2008; White et al., 2011). Additionally, reductions in amygdala volume in both institutionalized and noninstitutionalized psychopaths (e.g., Ermer, Cope, Nyalakanti, Calhoun, & Kiehl, 2012; Yang, Raine, Colletti, Toga, & Narr, 2010; Yang, Raine, Narr, Colletti, & Toga, 2009) and abnormalities in amygdala structure among psychopaths (Boccaccini et al., 2011) have been observed.

Paradigms using the fear-potentiated startle response to differentiate psychopaths and controls also provide support for Blair’s hypothesis. Because the amygdala is influential in the modulation of the startle response on such tasks (e.g., Davis, 2000), psychopaths’ deficient performance implicates this structure, providing further support that amygdala functioning is associated with the psychopathy syndrome.

R. Blair (2006) is also able to explain why psychopaths show performance deficits on some tasks but not on others. For example, the low-fear and punishment insensitivity models for psychopathy have been criticized on the basis of psychopaths’ normal performance on punishment-only versions of the passive avoidance task. On this version of the task, participants are punished for responding to some stimuli and punished for not responding to other stimuli. Psychopaths’ normal performance on such tasks suggest that, contrary to the punishment and fear based theories, psychopaths do demonstrate adequate passive avoidance of punishment-related stimuli under certain conditions. To explain this discrepancy, Blair (2006) incorporates into his model the theoretical formulations of Baxter and Murray (2002) that distinguish instrumental tasks that involve the amygdala (e.g., passive avoidance learning) and those instrumental learning tasks that do not (e.g., conditional learning and object discrimination). Specifically, according to Blair (2006), psychopaths are not affected on the punishment-only task because this task requires the formation of stimulus–response associations, rather than CS-affect representation associations. In other words, because the punishment-only version of the passive avoidance task does not involve learning that requires the amygdala, psychopaths are able to perform normally.

Although there is much evidence to support the low-fear and punishment-learning theories of psychopathy, this emphasis on emotion may result in an overly narrow focus.
For example, the amygdala-based models of psychopathy have placed considerable emphasis on results showing differences in the activation and morphology of the amygdala between psychopaths and individuals high in psychopathy traits relative to controls. However, it is important to recognize that differences in brain structure activation and morphology in psychopathy are not limited to the amygdala. For example, in their study, Finger et al. (2011) also noted decreased responsiveness in the orbitofrontal cortex and caudate, a finding consistent with that of Marsh et al. (2011). Similarly, Boccadri et al. (2011) found significant differences not only in amygdala structure between psychopaths and controls, but also significant reduction in orbitofrontal regions.

This suggestion of more general abnormality is consistent with studies showing differences across psychopaths and nonpsychopaths in a variety of regions, including the dorsolateral prefrontal cortex (DLPFC; e.g., LaPierre, Braun, & Hodgins, 1995; Mitchell, Colledge, Leonard, & Blair, 2002), the orbitofrontal cortex (OFC; e.g., Ermer et al., 2012; LaPierre et al., 1995; Mitchell et al., 2002) and the medial frontal/anterior cingulate cortex (ACC; Kiehl et al., 2001; Ly et al., 2012; Munro et al., 2007; Veit et al., 2002). Further, beyond structural abnormalities, additional research is suggesting that decreased connectivity between regions may be associated with psychopathy (Ly et al., 2012; Motzkin, Newman, Kiehl, & Keonigs, 2011). These findings are consistent with results showing that psychopaths show deficits in performance on tasks involving OFC and ACC functioning (K. S. Blair et al., 2006).

In addition to a focus on results specific to the amygdala, the amygdala-based models rely on laboratory tasks that emphasize valenced stimuli (e.g., the positive and negative visual stimuli presented as part of the acoustic startle paradigm, the punishment and reward stimuli used in the passive avoidance tasks) at the expense of neutral stimuli. In an alternative line of investigation, Newman and colleagues (e.g., Hiatt, Schmitt, and Newman, 2004; Newman, Schmitt, & Voss, 1997; Vitale, Hiatt, Brinkley, & Newman, 2007) have utilized affectively and motivationally neutral tasks designed to examine attention processing among psychopaths. On such tasks, psychopaths have reliably exhibited abnormalities in attention processing, particularly when stimuli are secondary or peripheral to their primary focus of selective attention (e.g., Hare & Jutai, 1988; Hiatt et al., 2004; Newman et al., 1997; Vitale et al., 2007).

**Response Modulation and Attention**

The response modulation hypothesis (RMH; Gorenstein & Newman, 1980; Newman & Baskin-Sommers, 2011) holds that abnormalities in selective attention undermine the ability of psychopathic individuals to consider contextual information that modulates the goal-directed behavior of others. In the most recent version of this model, Newman and Baskin-Sommers (2011) characterize the problem as an “attention bottleneck,” which hampers the simultaneous processing of multiple channels of information. Thus, once attention is allocated to a specific goal, psychopathic individuals are less able to process the full range of affective and nonaffective stimuli, and their associated meanings, that normally provide an evaluative context for the goal-directed behavior (MacCoon, Wallace, & Newman, 2004).

This focus on attention processing distinguishes the RMH from the low-fear and punishment-learning based models of psychopathy (e.g., R. Blair, 2006; Fowles, 1980; Lykken, 1995). Specifically, although the RMH predicts a situation-specific deficit in
processing threat and other emotion cues, psychopathic individuals’ failure to consider contextual information is not limited to affective information (Hiatt et al., 2004; Newman et al., 1997; Vitale et al., 2005; Zeier, Maxwell & Newman, 2009).

To evaluate the specificity of that aspect of the RMH, Newman and colleagues have conducted a series of studies that manipulate participants’ focus of attention while measuring performance on tasks that are strongly associated with psychopathic behavior, including passive avoidance, electrodermal activity, fear potentiated startle and amygdala activation (see Newman & Baskin-Sommers, 2011, for review). With regard to passive avoidance learning, for instance, the RMH predicts that psychopathic individuals will be relatively oblivious to inhibitory punishment cues if they are focused on responding to reward, but that they will use punishment cues to inhibit responding as well as nonpsychopathic individuals when avoiding punishment is their primary goal. Consistent with these predictions, psychopathic offenders committed more passive avoidance errors than controls when avoiding punishment-involved learning to inhibit responses for reward, but their passive avoidance was as good or better than controls in a punishment-only version of the same task (i.e., when punishment cues were goal-relevant rather than peripheral to the primary focus of goal-directed behavior; Newman & Kosson, 1986; Newman, Patterson, Howland, & Nichols, 1990; Newman & Schmitt, 1998). Thus, like R. Blair (2006), Newman and colleagues are able to reconcile the discrepant passive-avoidance literature, although with an emphasis on the attentional demands of the task rather than the associations that must be formed.

Parallel findings have been found using fear potentiated startle (FPS). Newman and colleagues (Baskin-Sommers, Curtin, & Newman, 2011; Newman, Curtin, Bertsch, & Baskin-Sommers, 2010) have used an instructed fear conditioning paradigm in which participants may receive electric shocks to their fingers when a red stimulus appears but not when a green stimulus appears. Further, participants’ focus of attention is manipulated, such that participants are instructed to focus either on the color of the stimuli (red versus green) or on an irrelevant characteristic of the stimuli (the presence of an upper-case or lower-case letter). Across diverse experiments, when FPS is measured in psychopathic versus nonpsychopathic participants, psychopathic offenders display significantly weaker FPS than controls, but only under the condition that directs their attention to the upper-case versus lower-case letters. When participants were instructed to focus on the red versus green color of the stimuli and respond according, psychopathic offenders displayed as much or more FPS as controls. In other words, psychopaths’ fear-related deficit in startle responding appeared and disappeared according to their focus of attention: When focused on threat-relevant information (i.e., the color associated with electric shocks) they displayed normal fear responses, but they displayed what appeared to be a profound fear deficit when the threat cues were peripheral to their goal-directed focus of attention (Baskin-Sommers et al., 2011; Newman et al., 2010).

According to the RMH, psychopaths’ insensitivity to punishment and other affectively significant cues is relatively specific to conditions in which the cues are peripheral to their goal-directed focus of attention. The RMH further predicts that these individuals should show insensitivity to potentially relevant but affectively neutral information under the same circumstances. To test this proposal, Newman and colleagues conducted a series of studies utilizing modified Stroop and flanker (e.g., Eriksen & Eriksen, 1974) tasks. In these tasks, participants are instructed to attend to a particular target stimulus and to make a response on the basis of the target. However, on each trial, the target stimulus appears with another stimulus that may be congruent (i.e., elicits the same
response as the one associated with the target), incongruent (i.e., elicits a different response than the target), or neutral (has no implications for response selection). These characteristics allow researchers to measure the extent to which distracting peripheral cues interfere with goal-directed responses (i.e., engender interference). Interference is typically computed by subtracting response speed on neutral trials from response speed on incongruent trials. In contrast to most laboratory studies of psychopathology, which predict a performance deficit, the RMH predicts that psychopathic individuals will display superior performance (i.e., less interference), particularly on tasks that enable participants to readily distinguish between targets and distractors on the basis of spatial location or salient stimulus features.

In the first study to evaluate this hypothesis, Newman et al. (1997) used a computerized Picture-Word task. On this task, participants are presented with two consecutive pictures or words, and they are instructed to indicate whether the two pictures (or words) are conceptually related. On word trials, the first word is presented with a superimposed picture. On picture trials, the first picture is presented with a superimposed word. On all trials, participants are instructed to ignore the superimposed (i.e., secondary context) stimulus. However, on half of the trials when the consecutively presented stimuli are conceptually unrelated, the superimposed picture (or word) is conceptually related to the second stimulus. In these trials, the correct response is "unrelated," but the response indicated by the secondary stimulus is incongruent with this response (e.g., the word "sweep" superimposed over a picture of a hat, followed by a picture of a broom). Among healthy participants, responses on these incongruent trials are reliably slower than responses to congruent trials (see Gernsbacher & Faust, 1991). Consistent with the performance of healthy participants, nonpsychopathic male offenders responded significantly more slowly on incongruent versus congruent trials (i.e., they showed interference). However, interference was virtually nonexistent in psychopathic male offenders, thus demonstrating significantly less sensitivity to the secondary stimulus among this group. This effect was subsequently replicated (e.g., Hiatt et al., 2004; Vitale et al., 2007).

Zeier et al. (2009) provide a conceptual replication of this study and, moreover, demonstrate the importance of attentional focus in determining the effect. In this study, participants viewed numbers (5, 8), letters (G, H), and neutral stimuli (#) within displays that always involved two of these stimuli (e.g., G and 5). Participants are instructed to press a button to indicate whether the target stimulus is a number or a letter. The two stimuli are always presented to the left and right of a central fixation point that ultimately transforms into an arrow (<, >) designating the target location. In order to evaluate the importance of selective attention on psychopathy-related differences in sensitivity to incongruent information, the authors employed a cuing procedure that either allowed participants to predict the spatial location of the target before the target and distracter appeared or highlighted both stimulus locations. For instance, in one condition a rectangular box surrounded the location where the target would ultimately appear or appeared at both locations 100 milliseconds before the experimental display.

Consistent with RMH, when the boxes appeared at both locations, drawing attention to the target as well as the potentially distracting flanker stimulus, psychopaths and controls displayed comparable amounts of interference. However, when the box cued the target location specifically, psychopathic offenders displayed significantly less interference than controls. Such findings again highlight that the hypothesized attention bottleneck associated with psychopathy may limit their processing of peripheral information.
Though this characteristic enhances their ability to ignore distraction, this advantage is counterbalanced by failure to process peripheral information that may be crucial for regulating maladaptive responses.

An important consideration in evaluating the response modulation model is that many of the studies involved comparing low-anxious psychopaths with a group of comparably low-anxious controls in order to test hypotheses concerning the so-called primary psychopath. Such distinctions have a long history in psychopathy research (e.g., Lykken, 1957) and continue to be emphasized today (e.g., Hicks, Markon, Patrick, Krueger, & Newman, 2004; Skeem et al., 2011). However, when interpreting such findings, it is important to bear in mind that not all individuals assessed as psychopathic using the Psychopathy Checklist–Revised will fall into this group. It is also worth noting that the core evidence for the RMH, including abnormalities on the modified Stroop task (Hiatt et al., 2004), passive avoidance task (Newman & Kosson, 1986), and fear-potentiated startle task (Baskin-Sommers et al., 2011, Newman et al., 2010) has been found without restricting analyses to the low-anxious groups. Further research is needed to determine whether low- and high-anxious psychopathic subtypes should be conceptualized as different disorders with distinct psychobiological correlates or as sharing a core psychobiological predisposition, the manifestation of which is importantly influenced by their levels of comorbid anxiety (see Brinkley, Newman, & Widiger, 2004; Lake, Baskin-Sommers, Li, Curtin, & Newman, 2011).

Genetics

There are more than 100 studies examining the relative contributions of genetic and environmental factors to antisocial behavior. Generally, evidence supports a moderate contribution of each factor. For example, in their recent meta-analysis, Waldman and Rhee (2006) found moderate additive genetic \( (a^2 = .32) \), nonadditive genetic \( (c^2 = .09) \), shared environmental \( (d^2 = .16) \), and nonshared environmental \( (e^2 = .43) \) influences on antisocial behavior and the best fitting model included each of these four components \( (\chi^2 = 1,394.46, df = 146, p < .001; AIC = 1,102.46) \). Importantly, the studies included in this analysis focused primarily on antisocial behavior, and used diagnoses of ASPD or conduct disorder, criminal activity and delinquency, or self-reports of aggression as outcome variables. Although antisocial behavior is a component of psychopathy, the psychopathy syndrome is distinct from general criminality or antisociality (Cleckley, 1988). As a result, the meta-analysis only indirectly addresses the genetic basis of psychopathy. Fortunately, there is an emerging literature focused on examining the relative contribution of genetics to traits more specifically associated with the psychopathy syndrome.

In a recent study of adolescent monozygotic and dizygotic twin pairs, Larsson, Andershed, and Lichtenstein (2006) used the YPI to assess the affective, interpersonal, and behavioral components of the psychopathy syndrome. Their results indicated that for each of the three components of psychopathy (i.e., interpersonal, affective, and behavioral) assessed by the YPI, genetic\(^1 \) and nonshared environmental factors accounted for the majority of variance, with little or no influence of shared environmental factor. Further, because their sample included both males and females, the authors were able

\(^1\) In their analysis, the authors do not separately analyze additive and nonadditive genetic factors. Thus, their "genetic" contributions would include both components.
to test for gender differences in the relative influences of the factors. None were found, suggesting that there may not be significant differences in the heritability of psychopathic traits across gender (Larsson et al., 2006).

The data from Larsson et al. (2006) are consistent with Blonigen, Hicks, Kreuger, Patrick, and Iacono’s (2006) recent analysis of 626 twin pairs from the Minnesota Twin Family Study. In this study, psychopathy was represented by the Fearless Dominance (representing a combination of the interpersonal/affective components of psychopathy) and Impulsive Antisociality (representing the behavioral component of psychopathy) subscales of the Multidimensional Personality Questionnaire (MPQ; Tellegen, 2000). As in Larsson et al. (2006), a model including additive genetic and nonshared environmental factors provided the best fit to the data, and there appeared to be no significant differences in the model fit across gender (Blonigen et al., 2006).

Using the Detachment and Antisocial subscales from the Minnesota Temperament Inventory to assess the affective and behavioral components of psychopathy, Taylor, Loney, Bobadilla, Iacono, and McGue (2003) examined the influence of genetic and shared/nonshared environmental factors in two samples of adolescent male twins (ages 16 to 18). As both Larsson et al. (2006) and Blonigen et al. (2006) found, the best-fitting model for both the affective and behavioral dimensions included additive genetic factors and nonshared environmental factors; there was little contribution from shared environmental factors (Taylor et al., 2003).

This pattern of results has also been replicated by Bezdjian, Raine, Baker, and Lynam (2011), who used the Child Psychopathy Scale and found that genetic factors and nonshared environmental factors influenced psychopathy trait levels in males and females. As in previous research, shared environmental influences did not.

Each of the preceding studies supports the importance of both genetic and nonshared environmental factors and the negligible influence of shared environmental factors. In this light, the distinction between shared and nonshared environmental influences becomes crucial for later investigation of the factors associated with psychopathy. Nonshared environmental factors are represented by the divergence of monozygotic twins, whose shared environments are identical. One potentially potent nonshared environmental factor is peer relationships (Manke, McGuire, Reiss, Hetherington, & Plomin, 1995), which play an important role in adolescent development. Their importance to psychopathic personality, in particular, is highlighted by the finding that the level of psychopathic traits exhibited by an individual adolescent appears to be correlated with the levels of psychopathic traits exhibited by members of his or her peer friendship group (Andershed, Kerr, Statin, & Engels as cited in Larsson et al., 2006).

The key role of genetic and nonshared environmental factors is further emphasized by a second meta-analysis of psychopathy-related studies conducted by Waldman and Rhee (2006). Using only studies that included self-report measures of the interpersonal and affective traits associated with the psychopathy syndrome (e.g., the Psychopathic Deviate (Pd) subscale of the MMPI and MMPI-2; Butcher, 1979; Butcher et al., 2001), the Minnesota Temperament Inventory (Taylor et al., 2003), and the Psychopathic Personality Inventory (Lilienfeld & Andrews, 1996) the authors found that a model including only additive genetic and nonshared environmental influences represented the best data fit ($\chi^2 = 45.77$, $df = 20$, $p < .001$; $AIC = 5.77$), with each component acting as a moderate influence ($a^2 = .49$, $e^2 = .51$).

Taken together, these data provide good evidence for the roles of genetic and nonshared environmental factors in the development of the psychopathy syndrome. Further, these
new studies have also provided a means for examining the independence of the genetic contribution to each component of the syndrome. For example, Larsson et al. (2006) found that in their sample, additive genetic and nonshared environmental factors were more important to the affective and impulsivity components than to the interpersonal component. Specifically, genetic factors accounted for 22% of the variance in the affective and impulsivity components of psychopathy, but only 1% of the variance in the interpersonal component. Similarly, nonshared environmental factors accounted for a greater proportion of the variance in the affective (45%) and impulsivity (28%) components compared to the interpersonal component (17%).

In their study using the MPQ subscales Fearless Dominance (FD) and Impulsive Antisociality (IA), Blonigen et al. (2006) examined the relative contributions of environmental and genetic factors to the separate development of these dimensions. To this end, the authors used data from two time points (ages 17 and 24). The authors partitioned the variance at age 24 into the variance contributed from the first time point (age 17) and the variance unique to this second time point. Thus, they were able to differentiate the influences of genetic and environmental factors on the stable proportion of variance and the genetic and environmental factors influencing the variance associated with change. Consistent with expectations for both dimensions, the stable proportion of variance in the traits was due primarily to additive genetic (FD $\alpha^2 = .25$; IA $\alpha^2 = .23$) rather than nonshared environmental factors (FD $\alpha^2 = .12$; IA $\alpha^2 = .07$); whereas, the proportion of variance associated with change was influenced by nonshared environmental factors (FD $\alpha^2 = .45$; IA $\alpha^2 = .44$) more than by additive genetic factors (FD $\alpha^2 = .17$; IA $\alpha^2 = .26$).

In summary, there is considerable evidence that psychopathy as it has been assessed in the preceding studies includes an additive genetic component. These data have opened a new area of investigation, characterized by hypotheses surrounding the precise nature of this influence. Some lines of investigation appear promising, for example, specificity of father-to-child transmission (Beaver, Rowland, Schwartz, & Nedellec, 2011); dopamine genes theorized to underlie ADHD (Waldman & Gizer, 2006); serotonergic genes associated with aggression and violence (Berman, Kavoussi, & Coccaro, 1997) and impulsivity (Sadeh et al., 2010); the MAOA gene, which is implicated in antisocial behavior associated with childhood abuse (Tikkanen et al., 2011); and dopamine receptor gene variants associated with fear conditioning (Huertas et al., 2010). Yet, it is still too early to know which of these avenues—if any—will provide the best explanation for the psychopathy syndrome. In the meanwhile, alternative theories of psychopathy continue to flourish.

**Treatment of Psychopathy**

Historically, the prognosis for psychopathy has been poor, and most individuals in the field considered the syndrome to be relatively untreatable (e.g., Hare, Clark, Grann, & Thornton, 2000; Hare & Hart, 1993; Lykken, 1995). Although considerable data support this view, there is still some possibility for future development in this area, as we increase our knowledge of the etiological factors that underlie the syndrome, particularly in younger samples.

Ogloff, Wong, and Greenwood (1990) conducted one of the most important treatment studies in the area. Ogloff and colleagues assessed psychopaths' performance in a therapeutic community setting, and they found that psychopaths were more likely to
experience early discharge from the program, were less motivated, and showed less overall improvement (Ogloff et al., 1990). This study is particularly important because the authors used the early version of the Psychopathy Checklist to classify participants as psychopathic. As a result, in addition to ensuring a more homogenous psychopathic group for comparison purposes, the study is also directly relevant to current practice in the field, where the PCL-R is the clinical standard for assessment.

In a similar study, Rice, Harris, and Cormier (1992) examined psychopaths' performance in an intensive therapeutic community contained within a maximum security prison. The treatment program was geared toward increasing empathy and responsibility for peers, and thus was primarily peer-operated. In a follow-up comparison, the authors compared 146 treated offenders with a matched comparison group of 146 untreated offenders on measures of recidivism. The results were consistent with those of Ogloff et al. (1990), in that psychopaths did not appear to benefit from the therapeutic community program. In fact, although treatment was associated with lower recidivism among nonpsychopathic participants, the reverse was true for the psychopaths. Psychopaths in the treatment group were actually more likely to violently recidivate (Rice et al., 1992), a finding that has been attributed to the possibility that the new social skills developed in the treatment setting merely improved the psychopaths' ability to manipulate and control others (Harris & Rice, 2006).

Consistently, research suggests that psychopaths are resistant to treatment. Compared to nonpsychopaths, psychopaths in treatment demonstrate poor program adjustment and higher attrition (e.g., Berger, Rotermund, Vieth, & Hohnhorst, 2012; Hobson, Shine, & Roberts, 2000; Ogloff et al., 1990; Olver & Wong, 2009, 2011; Rice et al., 1992; Richards, Casey, & Lucente, 2003) and lower levels of therapeutic gain (Chakhssi, deRuiter, & Berstein, 2010; Hughes, Hogue, Hollin, & Champion, 1997; Roche, Shoss, Pincus, & Menard, 2011). Further, treatment appears to be associated with heightened recidivism rates for psychopaths (e.g., Hare et al., 2000; Rice et al., 1992).

The negative outcomes associated with treatment of psychopaths may not always be apparent to the individuals administering the programs, which is another source of concern. For example, Rice et al. (1992) found that, although the psychopathic participants in the therapeutic community program showed more problem behaviors while in the program, they were no less likely than nonpsychopaths to be given positions of trust within the program or to receive early recommendations for release. Similarly, Seto and Barbaree (1999) examined a cognitive-behavioral and relapse-prevention program and found that it was the highly psychopathic participants who were also rated by their therapists as showing the greatest improvement (on the basis of motivation to change, quality of homework, conduct during sessions) who were most likely to violently reoffend.

The Seto and Barbaree finding is particularly crucial when considering a meta-analysis of psychopathy treatment studies conducted by Salekin (2002). Overall, the results of the meta-analysis suggested that there was more reason for optimism than previously expected. In this analysis, when the proportion of treatment participants who would have been expected to improve without treatment was subtracted from the proportion of treatment participants who were judged to have improved, the mean rate of successful intervention was .62 across 42 treatment studies. However, this conclusion has some important limitations. First, the PCL-R was used to assess psychopathy in only four of the studies. Several of the studies were also conducted in juvenile samples, which is problematic given our limited understanding of the assessment and development of psychopathy in this group. In addition, only a minority of the studies included aggressive
or criminal behavior as one of the outcome variables. Relatedly, in the majority of the studies, the primary outcome evaluation was therapist impressions. Given the results of Seto and Barbaree (1999), there is reason to be cautious regarding how well these therapists’ impressions correctly predicted improvement in the psychopaths’ behaviors.

There are some recent studies, however, that suggest there may be some potential for therapeutic gain, particularly among adolescents characterized by high levels of psychopathic traits. For example, Salekin, Tippey, and Allen (2012) found that a program meant to increase motivation, increase positive emotion, and decrease callousness in youth with conduct problems in a secure facility led to a significant decrease in levels of psychopathy scores. Further, this finding held across all three psychopathy trait domains—callous/interpersonal, affective, and impulsivity. Similarly, in another study of children and adolescents, McDonald, Dodson, Rosenfield, and Jouriles (2011) found that an intervention aimed at altering mothers’ harsh and inconsistent parenting led to a decrease in psychopathy trait scores in a sample of children experiencing high levels of conduct problems. Caldwell (2011) showed that changes in PCL:YV scores associated with treatment in a secure facility for adolescents were also associated with decreased general and violent reoffending. Finally, in a large study of civil psychiatric patients that included 72 designated as psychopathic, Skeem, Monahan, and Mulvey (2002) found that psychopathy did not moderate the effects of treatment. That is, when reductions in violence were examined, psychopathic patients showed responses to treatment similar to nonpsychopathic patients.

In light of these findings, there are several alternatives. One is to de-emphasize treatments for psychopaths that are geared toward building social skills or empathy, and instead to create behavior modification programs with the goal of reducing harm (i.e., criminal recidivism) caused by psychopaths (Harris & Rice, 2006). A second possibility is to expand interventions for children and adolescents with psychopathic traits. Given the possibility that this group may be more likely to exhibit treatment gains, this would be a strategic use of resources. A third alternative is to turn to research on the etiology of psychopathy to devise treatment strategies better suited to the particular deficits demonstrated by this group (Wallace, Schmitt, Vitale, & Newman, 2000).

For example, Newman and colleagues (e.g., Newman, 1998; Wallace et al., 2000) have proposed that psychopaths are characterized by a deficit in response modulation. Specifically, psychopaths are proposed to be deficient in their ability to automatically redirect attention from the primary focus of their goal-directed behavior to the evaluation of secondary stimuli. Wallace et al. (2000) have argued that, on the basis of such a deficit, it would be unlikely that simply changing the content of psychopathic thought (e.g., teaching social skills and anger management, as in traditional cognitive therapy) would result in significant improvement in these individuals’ behavior. This is because the psychopath would be unable to benefit from changes in their thinking that they could not subsequently access automatically in key situations due to their response modulation deficit. Instead, the primary emphasis should be on developing and teaching strategies for compensating for the basic information processing deficit that makes accessing these cognitions so challenging (Wallace et al., 2000). For example, in experimental paradigms where psychopaths are forced to pause before engaging in a response, their performance deficits disappear, and they are able to perform as well as controls (Arnett et al., 1993; Newman et al., 1997). Although only in their infancy, such propositions highlight the importance of considering etiological factors when designing and implementing treatments for this group.
Summary and Future Directions

Societies throughout history have recognized the existence of the psychopathic personality. These individuals were distinguished by their fleeting, shallow interpersonal ties, their casual antisociality, and their sometimes explosive violence. Although a reliable classification system was a longtime coming, the understanding that these individuals needed to be identified in order to prevent or at least limit their effects on society, has been long-standing. Today is little different. The individual we know as the “psychopath” is a drain on society’s financial and emotional resources; psychopaths commit a disproportionate number of crimes and represent a significant proportion of our inmate populations.

Clinical descriptions of psychopathy have resulted in the development of reliable and valid measures of the syndrome across different populations. Early, disparate assessments gave way in the 1990s to more unified assessment relying on the PCL-R (Hare, 1991) and conceptually related measures (e.g., the PCL:YV and PCL:SV). More recently, the field has again seen the emergence of greater diversity in psychopathy assessments, as self-report measures such as the PPI (Lilienfeld & Andrews, 1996), the SRPS (Levenson et al., 1995), and the EPA (Miller et al., 2011) have been increasingly utilized.

Greater unification in the assessment of psychopathy has allowed research on the etiology of the syndrome to flourish, and we know more than ever about the factors associated with this syndrome. Research has reliably demonstrated that there is a genetic component to the psychopathic personality (e.g., Waldman & Rhee, 2006). Research has also indicated that these individuals exhibit performance deficits that could be explained in terms of dispositional “fearlessness” (e.g., Lykken, 1995) or poor behavioral inhibition (e.g., Fowles & Dindo, 2006), or in terms of abnormalities in the functioning of the amygdala and associated structures (e.g., R. Blair, 2006). Still other lines of investigation have examined the attention processing of psychopathic individuals and have shown that psychopaths appear deficient in their ability to initiate the relatively automatic shift in attention from the ongoing enactment of goal directed behavior to contextual cues that would indicate that a behavior required modulation (e.g., Hiatt & Newman, 2006).

Understanding the causal factors that underlie psychopathy may prove invaluable to the prevention and treatment of the syndrome. Currently, little empirical data exist to suggest that psychopaths will benefit from treatment (e.g., Harris & Rice, 2006). However, this conclusion may be challenged in the future, as we expand our interventions to new populations (i.e., adolescents). As etiological processes begin to inform our interventions (e.g., Wallace et al., 2000), we may become better able to address the specific deficits associated with the psychopathy syndrome.

As we move forward in the field, research focused on the existing controversies and currently popular etiological theories will likely continue to dominate. We will continue to develop reliable assessment measures able to be utilized in a variety of populations, we will reach better understanding regarding the true nature of the syndrome, and we will better understand how the psychobiological processes associated with the syndrome develop into the full-blown psychopathy syndrome. However, several new areas are also emerging, and they are likely to become increasingly important with the passage of time.

First, on the assessment front, researchers will be trying to determine whether it is best to conceptualize psychopathy as a discrete taxon or as a dimensional construct. Currently, there are competing claims regarding the best way to conceptualize the construct (e.g., Brinkley et al., 2004; Harris, Rice, & Quinsey, 1994; Skeem et al., 2011). In practice, this...
distinction may be made on the basis of anything from practical concerns to theoretical considerations. For example, when the PCL-R is used in clinical risk assessment, the designation “psychopathic” versus “nonpsychopathic” may be required, whereas in a study of the genetic contributions to psychopathy, the syndrome may be conceptualized in a dimensional, trait-like manner. The answer to the question of whether psychopathy is best conceptualized as a discrete category or as an extreme variation on normal personality may depend on whether we are focused on the behaviors, the traits, or the underlying psychobiological mechanisms associated with the syndrome (Brinkley et al., 2004).

Second, as we attempt to resolve the category-dimension question, we will likely see the emergence of subtypes of psychopathy. This would not be an altogether new development. Individuals have long differentiated the “primary” from the “secondary” or “neurotic” psychopath (e.g., Cleckley, 1941/1988; Karpman, 1941; Lykken 1957), the latter being characterized by relatively higher levels of neuroticism or anxiety. Further, researchers have already moved forward by proposing and beginning to test the ways in which psychopathy might be usefully divided on the basis of symptom profile, etiological mechanism, or the presence of criminal behavior (e.g., Brinkley et al., 2004; Newman et al., 2005; Poyhress & Skeem, 2006). Such a development is consistent with what has been the practice among other clinical disorders (e.g., schizophrenia), where subtypes representing different symptom profiles, different prognoses, and potentially different underlying psychobiological mechanisms have been differentiated from each other for clinical and research purposes. Although such a development may help to resolve many of the controversies currently existing in the field, it will inevitably lead us to the question of if each subtype can reasonably be considered “psychopathy.” This fragmented future is nearly on us, as researchers and clinicians already grapple with the challenge of understanding the complexities of research that has been generated using a variety of assessment measures, across a multitude of samples. As consistencies in patterns of results accrue, these differences in assessment and conceptualization will become less problematic. However, in the presence of inconsistency and disagreement such a diversity of measurement and conceptualization will likely make it more difficult to reconcile discrepant findings.
References


Boccardi, M., Frisoni, G. B., Hare, R. D., Cavedo, E., Naja, P., Pievani, M., Tihonen, J. (2011). Cortex...
Psychopathy as Psychopathology

References


Psychopathy as Psychopathology


