Toward the Future
Translating Basic Research into Prevention and Treatment Strategies

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Such men are born criminals by nature, and are only distinguished from ordinary criminals by the great extent of their moral incapacity, by their having wills completely unaffected by the restraining experiences of life, and by their being fundamentally incorrigible. ... There is, therefore, as a rule, no other course to be taken, for their own sake, and for the sake of those around them, than to isolate them as being unfit for society, and as far as possible to find them occupation.

—KRAEPELIN (1904/1968, p. 289; original emphasis)

Harris and Rice (Chapter 28, this volume) review the treatment outcome research on psychopathic offenders. As those authors point out, this research has been hampered by methodological limitations, including different operationalizations of psychopathy, the absence of objective outcome measures, and the absence of randomized clinical trials. Only a few evaluation studies are informative about treatment outcomes for psychopathic offenders. One matched-comparison study found that psychopathic offenders were more likely to reoffend after participating in a therapeutic community program, whereas nonpsychopathic offenders were less likely to reoffend (Rice, Harris, & Cormier, 1992). A more recent matched-comparison study found that participation in education or vocational training programs reduced recidivism in nonpsychopathic offenders but had no effect on psychopathic offenders (Hare, Clark, Grann, & Thornton, 2000). The same investigators also found that among offenders who scored high on Factor 1 (interpersonal and affective features) of the Psychopathy Checklist—Revised (PCL-R), those who participated in short-term psychotherapy were more likely to reoffend than those who did not participate, while there was no difference between treated and untreated groups among those who were low on Factor 1.

Because the principal problem in interpreting the efficacy of interventions for psychopathic offenders is the absence of randomized clinical trials, we examined the outcomes of randomized clinical trials involving offenders diagnosed with antisocial
personality disorder (APD; American Psychiatric Association, 2000). These outcome studies are germane because there is a strong correlation ($r = .85$) between the number of diagnostic features of APD that a person exhibits and his or her PCL-R score, and both APD features and PCL-R items are good indicators of an antisocial taxon (Skilling, Harris, Rice, & Quinsey, 2002).

Two randomized clinical trials investigating the effect of substance abuse treatment found no difference between the treatment and comparison groups for those diagnosed with APD, while those who did not have the diagnosis and were assigned to treatment were less likely to relapse than those assigned to the comparison group (Leal, Ziedonis, & Kosten, 1994; Messina, Wish, & Nemes, 1999). Again, this suggests that individuals who are likely to be psychopaths (by virtue of having many features of APD) do not appear to benefit from treatment that is effective for nonpsychopaths.

There is also indirect evidence for the lack of positive treatment effects on psychopathic offenders from work done on offender risk assessment. Offenders in many follow-up studies have received treatment of some sort prior to their release from custody. Thus, risk appraisal scales designed on the basis of these follow-up studies are crude measures of treatment efficacy. These scales often include measures of psychopathy or proxies of psychopathic traits such as early behavior problems, substance abuse, and criminal history; very few valid risk appraisal scales contain treatment-related items, and these items are generally less predictive than items reflecting psychopathic traits. Moreover, as the accuracy of predictors pertaining to psychopathy and its proxies increases, the variance that could be potentially accounted for by existing interventions necessarily decreases.

In the following sections, we consider the potential problems for current interventions, the relevance of basic research for prevention and intervention efforts, and the relevance of a developmental understanding of psychopathy in thinking about how to intervene. We conclude with a summary of research that can inform the design of future interventions and describe features of treatment that may increase their effectiveness.

**DESIGNING FUTURE INTERVENTIONS**

Clinicians who have worked with psychopaths commonly believe that they are untreatable. One reason for this pessimism—which is based on only a few empirical evaluations of interventions for psychopathic offenders—is the observation that the personal characteristics associated with recidivism in follow-up studies are also related to poor treatment response. We discuss this notion in greater detail in the next section. Nonetheless, this clinical pessimism raises several important questions: How broadly can our inductive net from previous treatment trials be cast? Can we generalize previous failures only to particular treatments delivered in particular venues or can we write off entire classes of interventions, such as any psychotherapeutic program that requires interpersonal influence? If we accept the proposition that psychopaths are not going to benefit from current interventions, does this apply only to adults? Are “fledgling psychopaths” (at-risk children and youths; Lynam, 1996) unlikely to be affected by intervention? The treatment outcome literature suggests that programs to reduce crime are more successful with children than with adults (Aos, Phipps, Barnoski, & Lieb, 2001), so it is not unreasonable to expect the same to be true among psychopaths.

Another fundamental question is how to judge the impact of an intervention; in other words, what represents a successful outcome? For professionals working in the criminal justice system and for many people in the public, an intervention must lead to a reduction in criminal recidivism in order to be successful. However, success is a relative term and depends on how we measure the reduction in recidivism. For example, in a comparison between treated and nontreated psychopaths, we might find a substantial and statistically significant difference in favor of the treated group even when the majority of both groups recidivated. The goal of a relative reduction in recidivism is much less ambitious and more realistic than requiring an intervention to reduce the recidivism rate of psychopaths to that of all offenders (much less to the offending rate of the general population).
There are different ways in which a hypothetical intervention for psychopaths could reduce criminal recidivism. One way in which an intervention could work is by preventing psychopathic offenders from reoffending by altering the environment in substantial and ongoing ways (e.g., 24-hour monitoring by supervisory staff, restricted mobility, and teaching the public to protect itself better from psychopaths they encounter). Such an intervention could reduce recidivism but would not alter psychopathic traits, at least directly. One could consider this a form of harm reduction, but one that focuses on harm resulting from criminal behavior and not harm resulting from noncriminal exploitation in interpersonal relationships. An alternative possibility is that a treatment would achieve a reduction in recidivism by altering one or more psychopathic traits. Such a treatment would reduce both the harm associated with crime as well as the personal and social harm caused by psychopaths' tendencies to engage in selfish, short-sighted noncriminal behaviors.

Treatments that target psychopathic characteristics not only permit the social harm associated with psychopathy to be reduced but also broaden the population of individuals to which the treatment could be applied to include noncriminal psychopaths. However, it is worthwhile to contemplate the outcome literature on the treatment of attention-deficit/hyperactivity disorder (ADHD) when thinking about the potential efficacy of prevention efforts for psychopathy. Children with ADHD are at greater risk than children without ADHD for antisocial outcomes as adults, including psychopathy (Frick & Marsee, Chapter 18, this volume). One might think that interventions might be more profitably directed toward at-risk children. The most effective interventions for ADHD are known to involve psychostimulants, behavior modification, or their combination. Unfortunately, these treatments, while efficacious during the time they are administered, appear to have little or no long-term effect (Waschbusch & Hill, 2003). One could imagine that prevention efforts directed at psychopathy might have short-term effects on relevant behaviors (e.g., aggression, noncompliance, and lying), but that such effects would dissipate over time so that adolescent and adult psychopaths would continue to cause harm in both criminal and noncriminal ways.

**Psychopathic Features That Might Interfere with Treatment**

Given the lack of empirical support for current treatment approaches, how do we proceed from what we know after several decades of basic research on psychopathy? We use a simple model of therapeutic relationships to organize some of the relevant research (see Figure 30.1). This model of treatment effects recognizes that client characteristics, therapist characteristics, therapeutic alliance, and the specific mechanisms of a particular psychotherapy approach can all contribute to outcome.

**Client Characteristics**

Many psychopathic characteristics are likely to limit the potential for interventions to reduce recidivism. For example, most psychotherapeutic approaches are predicated on the individual's motivation to change, because effort is required to participate in individual or group therapy sessions, complete in-session and homework assignments, and comply with any program requirements. Psychopathic offenders are more likely to be disruptive and noncompliant during therapy sessions than nonpsychopathic offenders.

**FIGURE 30.1.** Simple model of factors associated with outcome for one-on-one treatment relationship.
(e.g., Hobson, Shine, & Roberts, 2000; Ogloff, Wong, & Greenwood, 1990; Seto & Barbaree, 1999) and thus are less likely to be able to benefit fully from their participation in these sessions.

Cleckley (1976) and Hare (1991, 2003) have commented at length on the core interpersonal and affective features of psychopathy, including lack of remorse, guilt, callousness, and shallow affect (loading onto Factor 1). Can these aspects of psychopathy be altered? If psychopaths are callous in the sense that they truly do not care about the well-being of other people, and are not motivated to change their interpersonal styles, how would a psychotherapy technique increase empathy? Research on the differences in psychopaths’ processing of verbal and emotional information suggests that any psychotherapies that focus on inducing remorse or guilt, increasing empathy, and accepting personal responsibility for offenses and other antisocial behavior are very unlikely to be successful. For example, the emotional valence of target words in lexical tasks appears to have a smaller effect on psychopaths, such that strong emotional words enhance task performance among nonpsychopaths but do not do so among psychopaths (Williamson, Harpur, & Hare, 1991; Newman, Lorenz, & Schmitt, 1998, cited in Steuerwald & Kosson, 2000). However, psychopaths do show affective facilitation in lexical tasks if provoked by a confederate prior to the task, suggesting that psychopaths have a higher threshold rather than a lack of this capacity in processing emotional information (Steuerwald, 1996). There is also some evidence that psychopaths do not differ from nonpsychopaths in their ability to correctly label affective words (Forthofer, 1992; Patterson, 1991). Based on these findings, Steuerwald and Kosson (2000) have suggested that, “psychopaths may be characterized by a lack of insight into their affective state and may have difficulty accessing affective material when in nonaffective states” (p. 129).

Psychopaths also appear to be less affected by emotionally neutral distractions (Newman, Schmitt, & Voss, 1997), and individuals with psychopathic traits are less sensitive to nondominant cues when engaged in goal-directed behavior (Newman, Patterson, & Kosson, 1987; O’Brien & Frick, 1996). In other words, psychopaths pay less attention to peripheral cues once their attention is focused on the reward associated with task success (e.g., winning money for being correct on a computer game trial). This tendency toward a dominant response style among psychopaths could interfere with psychotherapies that focus on problem-solving or relapse prevention skills, because the use of these skills requires an awareness of the costs as well as the benefits of a particular course of action.

Although psychopathic offenders make more errors than nonpsychopathic offenders in tasks in which correct responses are rewarded, they do not differ in conditions when errors are concomitantly punished (Newman & Kosson, 1986). Moreover, psychopathic offenders do not differ in their performance when both reward and punishment contingencies are manipulated so that they are obvious, or when there is a long enough interval between trials to allow the participants to consider their options (Newman, Patterson, Howland, & Nichols, 1990). These studies suggest that, as in the laboratory research on emotional information processing, psychopaths differ from nonpsychopaths in their threshold for response modulation but do not lack this ability.

Although psychopaths do respond to punishments, they appear to be less reactive than nonpsychopathic offenders to aversive stimuli; for example, they do not show the same startle potentiation during exposure to aversive stimuli as nonpsychopathic offenders or control volunteers show in the laboratory (Levenson, Patrick, Bradley, & Lang, 2000; Patrick, Bradley, & Lang, 1993). Again, this suggests that the threshold of psychopaths for shifting their attention from goal seeking is higher. There is also some evidence that noncriminal psychopaths do not show conditioned aversive responding (Flor, Birbaumer, Hermann, Ziegler, & Patrick, 2002), a finding that could not be explained by psychopaths having a lower sensitivity to aversive or noxious stimuli because there was no group difference in responses to the unconditioned stimuli.

Another obstacle to therapies that focus on developing relapse prevention strategies and other cognitive skills is the tendency of psychopathic offenders to be more impulsive, unrealistic in their long-term planning,
and disorganized in their lifestyles. Thus, it may not be surprising that more positive ratings of offenders’ understanding of the antecedents of their offenses and ability to describe relapse prevention strategies do not appear to be related to a reduction in recidivism, at least among sex offenders scoring higher in psychopathy (Looman, Abracen, Serin, & Marquis, 2005; Seto, 2003; Seto & Barbaree, 1999). In fact, there appears to be a critical conceptual problem with relapse prevention models, because these models are predicated on the assumption that the person undergoing therapy is motivated to avoid offending. What about offenders (psychopaths or otherwise) who seek opportunities to offend and are primarily motivated by a desire to engage in criminal behaviors without getting caught? We would argue that interventions that rely on psychopathic offenders’ motivation to change are less likely to be successful than those interventions, such as behavior modification regimens, that do not.

Finally, many proximal treatment outcome measures are based on offender self-report (e.g., acceptance of responsibility, expressions of remorse or guilt, and awareness of offense antecedents or relapse prevention strategies). Psychopathic offenders engage in much more deception than nonpsychopathic offenders, although (fortunately, for treatment providers and supervisory staff) much of this deception is in implausible forms (Rogers & Cruise, 2000). Psychopathic offenders may be more likely to attempt to deceive treatment providers than nonpsychopathic offenders, creating a demand for proximal treatment outcome measures that are not based on self-report. Importantly, ultimate treatment outcome measures such as recidivism and other antisocial behavior are not based on self-report.

To summarize, many defining characteristics of psychopaths may impede the ability of interventions to reduce recidivism or other harm. These characteristics include psychopaths’ lack of remorse or guilt, callousness, irresponsibility, impulsivity, unrealistic long-term planning, unstable lifestyles, and dominant response styles. Other obstacles to many contemporary psychotherapy approaches are the therapeutic alliance (or lack thereof) and the identification of suitable treatments.

Therapist Characteristics and Alliance

Meta-analytic studies demonstrating relatively few or no differences in the success of various psychotherapeutic approaches have stimulated research on the nonspecific factors that affect treatment outcome. There is good evidence that aspects of the therapeutic alliance are particularly important, with a recent meta-analysis of 79 studies finding a reliable, moderate relationship between measures of therapeutic alliance and outcome (Martin, Garske, & Davis, 2000). According to Martin and colleagues, the common elements across different definitions of therapeutic alliance are the collaborative nature of the therapeutic relationship, the affective bond between therapist and client, and the therapist’s and client’s agreement on treatment goals and tasks.

Developing a therapeutic alliance with psychopathic clients could be quite challenging because of their defining characteristics and because of therapists’ reaction to noncompliance; disruptive behavior; the nature of psychopaths’ offenses; and concerns about possible exploitation, manipulation, and deception. One could imagine that there is a great deal of potential for therapist mistrust, suspicion, and more confrontational or hostile interactions with psychopathic clients (these therapist behaviors are sometimes referred to as countertransference in the clinical literature). Consistent with this hypothesis, Taft, Murphy, Musser, and Remington (2004) found that self-reported psychopathic characteristics were significantly and negatively associated with therapeutic alliance in a sample of men in treatment for partner abuse. Psychopathic characteristics were also negatively associated with motivation for change, and motivation for change mediated the relationship between psychopathic characteristics and therapeutic alliance.

Treatment Content

Research on criminogenic needs (changeable factors associated with a greater likelihood of reoffending; see Andrews & Bonta, 1998) has lagged behind the research advancing actuarial assessment methods for predicting recidivism. The most important issue here is that psychopathy may be a moderator of treatment effects: What works for nonpsy-
The Relevance of Basic Research for Designing Interventions

Little is known about the proximate causes of psychopathy. Although treatments can be effective without addressing causes (e.g., the impact of behavior modification on symptoms displayed by institutionalized schizophrenic patients; Paul & Lentz, 1977), understanding the proximal causes of psychopathy may help us identify the most promising avenues to pursue in intervention. Of particular interest to us is the literature on neuroscientific findings comparing psychopathic and nonpsychopathic offenders.

Raine and Yang (Chapter 14, this volume) provide an extensive review of the neuroscientific literature on psychopathy. There have been very few such investigations of psychopathic offenders per se; most of the extant studies have examined violent or persistent offenders. These studies have consistently identified the prefrontal and temporal lobes as key areas in understanding violent offending and persistent criminality. Raine and Yang note that identifying areas that differ between psychopaths and controls may eventually lead to stem cell therapies that would target the neuropsychological substrate of psychopathy. Although this represents an exciting possibility, we expect that such endeavors will need to distinguish between primary and secondary psychopathy (see Poythress & Skeem, Chapter 9, this volume) in order to achieve success. Much of the research reviewed by Raine and Yang may apply only to secondary psychopaths (i.e., those who display psychopathic traits and behavior as a result of neurodevelopmental problems). From the developmental account described later, we would predict that primary psychopaths do not show evidence of neuropsychological deficits when compared to normal volunteers (although there might be differences in both brain structure and function), whereas secondary psychopaths would show evidence of neuropsychological deficits.

A rodent model is germane in thinking about how neuroscientific research on psychopaths can help advance clinical practice. The hormone vasopressin facilitates pair bonding and paternal care in the monogamous prairie vole (Microtus ochrogaster) but has no such effect on the closely related polygamous montane vole (Microtus montanus). The different effects of vasopressin in these two species are associated with different patterns of vasopressin receptors in the brain, and these receptor patterns are in turn related to differences in the DNA sequence of vasopressin receptor genes (Young, Wang, & Insel, 1998). Specifically, there is a long DNA sequence in the promoter region of the vasopressin receptor gene of the gregarious but monogamous prairie voles that is absent in the promiscuous montane voles.

Young, Nilsen, Waymire, MacGregor, and Insel (1999) inserted the long promoter sequence into the genome of mice. The vasopressin receptor gene was expressed in the brains of these transgenic mice in a pattern like that naturally found in the prairie vole brain. Although mice are normally much less social than prairie voles, the transgenic mice responded to vasopressin injections with increased social behavior. The transgenic mice were not monogamous but engaged in more social contact with females than either normal mice or montane voles.

The importance of these experiments on rodents is not that vasopressin receptor genes are necessary for social cooperation, but rather that a single gene can alter social behavior, thereby providing a model for the development of interventions for psychopathy. The Genome Project (see Chapter 9, this volume) and nonhuman primate research offer exciting prospects for new treatments for psychopathy. However, we note that the neuroscientific research reviewed in this chapter has not yet led to the development of effective clinical interventions.
genes are necessarily involved in psychopathy, although it is possible that they are, but rather that a change in the promoter region of a single gene can lead to a change in complex social behavior. Advances in neuroscience, together with the results of the Human Genome Project and transgenic research on nonhuman species, may very well lead to the development of genetic and neurohormonal interventions for psychopathy. Further elucidation of the phenotypical characteristics of psychopathy (including the issue of psychopathy subtypes; Poythress & Skeem, Chapter 9, this volume) can be expected both to facilitate and be facilitated by advances in neuroscientific and genetic investigations of antisocial behavior.

The Relevance of a Developmental Understanding of Psychopathy

We have elsewhere described a taxonomy of delinquents comprised of Moffitt's (1993) adolescence-limited offenders and two types of life-course-persistent offenders: a neurodevelopmentally impaired type and a primary psychopathic type (Quinsey, Skilling, Lalumière, & Craig, 2004; see also Harris & Rice, Chapter 28, this volume). Evidence reviewed in this volume (Waldman & Rhee, Chapter 11) and elsewhere (Quinsey et al., 2004) suggests that there are substantial genetic influences on the etiology of psychopathy. This fact has the same implications regardless of whether genes directly cause the condition (so that psychopathy is relatively unaffected by environmental influence, or obligate) or act only under certain environmental conditions (so that psychopathy is facultative), and regardless of whether psychopathy is conceptualized as pathological or not. Because it is certain that some genes contribute to the development of psychopathy, we may speculate about what characteristics these genes might produce. The close association of antisocial conduct with early high mating effort (allocating energy toward short-term, uncommitted relationships with multiple sexual partners) and lack of parental investment (allocating energy toward taking care of one's mate and one's offspring) suggest that genes connected with these characteristics are of particular interest (see below).

Barr and Quinsey (2004) have compared the implications of the view that psychopathy represents a life history strategy and the view that psychopathy represents a pathology (see also Harris & Rice, Chapter 28, this volume). A life history strategy, from a Darwinian or selectionist perspective (for a brief introduction, see Quinsey, 2002), is a particular pattern of energy and resource allocation to species-typical problems of survival and reproduction. From this life history perspective, psychopathic traits such as risk taking, aggressiveness, early reproduction, and social manipulativeness were selected for in ancestral environments because of their positive effects on fitness (relative reproductive success in terms of number and quality of offspring, or their modern proxy in terms of access to potentially fertile sexual partners). Thus, the life history view requires that psychopathy is at least partly heritable and that it did not incur fitness costs in the environment in which the psychopathic traits were selected. According to this view, psychopathic traits were selected because they were designed to solve problems of survival or reproduction in ancestral environments. Like the pathology view, the life history view requires that the brains of psychopaths be different in some way from those of non-psychopaths, but it is silent about the nature of the differences and does not specify a proximal causal mechanism.

The life history view is also silent about whether particular external events are causally related to the development of psychopathic traits. With respect to genotype-environment interactions, it could be argued that psychopathic traits are species-typical characteristics that develop in any person exposed to particular external events. In this case, psychopathy would be inherited but its coefficient of heritability would be zero, there being no genetically caused variation among individuals (heritability is the proportion of phenotypical variance attributable to genetic influence). Because we know that psychopathy does not show zero heritability, this view is certainly false. The life history view, therefore, asserts that the alleles responsible for psychopathic characteristics have been maintained in the population through frequency-dependent selection. In this form of selection, the traits confer a fitness advantage if they are uncommon in the population—for example, a small group
of cheaters prospering in a large crowd of cooperators (see Frank, 1988).

The pathology view—which appears to be more commonly held than the life history view—asserts that the differences observed between psychopaths and nonpsychopaths reflect abnormalities in psychopaths’ emotional information processing, impulse control, and so forth. These deficits are presumably the result of disturbances in development; candidate causes include pre-natal insults, adverse early environments, childhood infections, and head injuries. The deficits result in serious disturbances in the individual’s functioning, which in turn lead to the commission of crimes (e.g., callousness and poor impulse control impair interpersonal relationships, and this increases the likelihood of violent behavior). Thus, the pathology view suggests that interventions should redress the deficits of psychopaths in order to improve their functioning and thereby reduce recidivism.

Because the conceptualization of psychopathy as a pathology deals entirely with proximal mechanisms (the mechanisms by which psychopathic traits are caused in current environments) and a life history view is concerned with ultimate causes (the selection pressures that caused the traits to develop in ancestral environments), strong inference tests of the relative merits of these two views are not straightforward. Nevertheless, the two views do lead to some different empirical predictions. The life history view would be falsified if it were to be shown that psychopathy was not inherited, that the constellation of psychopathic traits inevitably led to fitness losses (e.g., death before reaching sexual maturity or decreased reproductive success), that psychopathic traits were not present across cultures and historical time, that psychopathy was an extremely rare condition, or that psychopathic traits only occurred as a result of pathological agents (illness or injury). In contrast, the view that psychopathy is a pathology requires that the traits arise from injury or disease, have neutral or negative fitness consequences, and—if psychopathy is inherited—that it be a very rare condition. From a Darwinian viewpoint, a pathological condition that led to increased reproductive success would raise questions about the meaningfulness of the definition of pathology being employed (see Wakefield, 1992).

What few data are available support a life history view of psychopathy. Highly antisocial males exhibit a unique constellation of traits marking them as a discrete natural class (taxon) both as adults (Harris, Rice, & Quinsey, 1994; Skilling et al., 2002) and as children (Skilling, Quinsey, & Craig, 2001). (For an alternative perspective, see Krueger, Markon, Patrick, & Iacono, in press.) A substantial literature demonstrates that antisocial traits show a strong genetic influence by themselves (e.g., Slutske et al., 1997; Waldman & Rhee, Chapter 11, this volume) and in combination with early environmental influences (Cadoret, Yates, Troughton, Woodworth, & Stewart, 1995; Caspi et al., 2002). High levels of antisocial traits are associated with high mating effort in men (Rowe, Vazsonyi, & Figueredo, 1997) and early reproductive activity in samples of men (Capaldi, Crosby, & Stoolmiller, 1996; Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Stouthamer-Loeber & Wei, 1998), women (Lancot & Smith, 2001; Quinsey, Book, & Lalumière, 2001; Serbin et al., 1998) and both sexes (Bingham & Crockett, 1996; Jessar, Costa, Jessar, & Donovan, 1983; Rowe, Rodgers, Meseke-Bushey, & St. John, 1989). High mating effort and age at first intercourse also show strong genetic influences (Bailey, Kirk, Zhu, Dunne, & Martin, 2000; Dunne et al., 1997). Of particular importance, psychopathy does not appear to be associated with pathological agents or neurodevelopmental anomalies (Harris, Rice, & Lalumière, 2001; Lalumière, Harris, & Rice, 2001). In fact, in a study by Hare (1984), individuals scoring very high on the PCL-R were found to have fewer neuropsychological deficits than those scoring in the midrange.

Furthermore, although psychopaths have been described as affectively impoverished—for example, being less responsive to distress cues than nonpsychopaths (Blair et al., 1997; Rice, Clark, & Smith, 1997)—they do not appear to have deficits in the recognition of emotional states in others. Book, Quinsey, Cooper, and Langford (2004) studied the relationship between psychopathy and accuracy in perceiving the emotional meaning of facial expressions and body language in a sample of 59 male prison inmates and 60 men recruited from the community. Psychopathy was measured by the Self-Report Psychopa-
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thy Scale (Levenson, Kiehl, & Fitzpatrick, 1995) for all participants, and by the PCL-R for the inmates. The inmates' PCL-R scores were not correlated with the number of errors in categorizing posed facial expressions and were positively but not significantly correlated with the inmates' accuracy in rating emotional intensity of posed facial photographs. All participants rated the assertiveness of confederates from a brief, spontaneous videotaped social interaction between the confederate and one of the confederate's friends. The Self-Report Psychopathy Scale was positively correlated with the accuracy of participants' ratings of the friend's level of assertiveness, as measured by both the confederate's rating and the friend's self-rating.

In a companion study involving a subset of the same sample, Book, Quinsey, and Langford (2004) examined the relationship between psychopathy and the accuracy of posed facial expressions of emotion. Thirty-one inmates and 50 community volunteers agreed to be videotaped while attempting to mimic prototypical facial expressions (happy, sad, fearful, disgusted, and angry). PCL-R scores were positively associated with increased intensity of fear in the posed fearful faces, as measured by Ekman and Friesen's (1978) Facial Action Coding System. Undergraduate students gave higher believability and intensity ratings to fearful faces posed by participants who had higher scores on the Primary Psychopathy subscale of the Self-Report Psychopathy Scale. A similar trend was observed for Factor 1 of the PCL-R. Taken together with other research showing that psychopathy is associated with deceptiveness (Seto, Khattar, Lalumière, & Quinsey, 1997), lack of response to distress cues (Blair et al., 1997), and an adequate theory of mind (Richell et al., 2003), these results indicate that psychopaths lack feelings for others but do understand their mental states; in other words, they know but they do not care. This does not seem to be much of a deficit if part of a socially manipulative and exploitative life history strategy.

As we noted earlier, the life history conceptualization of psychopathy has implications for psychotherapies that aim to address "deficits" in psychopathic offenders. These deficits might in fact be differences (and the differences might be in kind rather than degree; Harris et al., 1994; Skilling et al., 2001). For example, the absence of startle potentiation to the presence of aversive stimuli could be seen as a deficit in fearfulness or defensive reactivity, but it could also be viewed as an adaptation for an antisocial lifestyle in which the individual needs to be relatively fearless in order to pursue his goals in a chaotic and difficult environment. Other authors have recognized this alternative interpretation as well: "From this viewpoint, psychopaths are predatory individuals ... who are uniquely adapted to survive in settings in which resources are scarce and goal-seeking behavior must persist in the face of all but imminent danger" (Levenson et al., 2000, p. 382).

CONCLUSIONS AND RECOMMENDATIONS

There have been few studies of the impact of currently available interventions on psychopathy, and none of the adequately controlled studies are encouraging. In this chapter, we reviewed the reasons why current psychotherapies can probably be ruled out as a class of interventions that are likely to reduce recidivism among psychopathic offenders. These reasons include the obstacles posed by psychopaths' characteristics, the interaction of psychopaths' characteristics with therapist factors, the collaborative nature of typical psychotherapeutic processes, and the content of treatment. Based on our analysis, we do not have much confidence in psychotherapies that emphasize motivation to change, long-term thinking, and rational analyses of costs and benefits, given psychopaths' known difficulties with motivation to change, response modulation, and noncompliance. Beyond the obvious call for more evaluation research to guide our thinking about interventions for psychopathic offenders, we have suggested that several areas of basic research might shed light on how to proceed with future intervention and prevention efforts. These include laboratory studies of psychopaths' emotional information processing, neuroscientific and genetic research, and studies of developmental trajectories in antisocial and criminal behaviors.

Future interventions can be broadly divided into those that try to target (putative) proximal causes and those that focus on psy-
Chronic traits or behavior without specifically targeting proximal causes. Examples of the former are stem cell graft or gene therapies to address brain differences in structure or function (Raine & Yang, Chapter 14, this volume), if indeed these brain differences cause the psychopathic phenotype; examples of the latter are behavior modification regimens that should be able to have an effect regardless of the individual’s level of psychopathy.

What is to be done while we await explication of the causal mechanisms of psychopathy? Long-term incapacitation may be required for some offenders, but it is not an option for many psychopathic offenders for a variety of legal, moral, social, and practical reasons. Prevention efforts may be part of the solution, even if current prevention methods are associated with only modest effect sizes in reducing crime (e.g., Aos et al., 2001). Most of these efforts target high-risk youth, many of whom would not turn out to be psychopathic adults even in the absence of an intervention. Nevertheless, a reduction of crime among disadvantaged groups is a worthy goal. Moreover, many prevention efforts promote social justice and thus are laudable in and of themselves, even if unaccompanied by a reduction in crime. Many of the correlates of antisocial behaviors are familial, including single parenthood, teenage parenthood, poverty, parental antisocial characteristics, parental alcoholism and drug abuse, and so forth. Policies regarding family planning, delayed parenthood, access to abortion, and improved health and education of mothers are therefore likely to produce benefits in the form of reduced crime and fewer psychopaths. Donohue and Levitt (2001), for example, have documented a reduction in American crime rates associated with improved access to abortion resulting from the 1973 Roe v. Wade decision. They argue that the reduction in crime rate occurred because the liberalization of U.S. abortion laws was associated with a differentially increased abortion rate among high-risk mothers.

Even with the best prevention efforts, adult psychopaths are not about to stop engaging in crime soon. What might future interventions look like? We can get some ideas from research in support of behavioral modification of symptoms exhibited by individuals with severe chronic schizophrenia. Although schizophrenia is a genetically caused brain disease, the most effective treatment discovered to date for its most severe manifestations is a rigorously implemented and very carefully planned behavioral program (Paul & Lentz, 1977). The thoroughness and integrity of implementation of this program seem to be the keys to its success.

The implications for treatments of psychopathic offenders are clear (see also Harris & Rice, Chapter 28, this volume). Interventions to reduce recidivism among psychopathic offenders will need to be provided on an ongoing basis, although the intensity of service may vary over time with changing circumstances. These interventions will likely involve high staff-to-client ratios in order to provide sufficient supervision, to protect therapists from being deceived or manipulated, and to help them refrain from negative reactions to psychopaths that might interfere with intervention efficacy. Moreover, the interventions will focus on shaping behavior in desired directions, rather than more abstract concepts such as responsibility, empathy, and relapse prevention, with substantial attention devoted to program fidelity and a reliance on measures other than self-report.

Given the evidence for psychopaths’ dominant response styles and differing response thresholds, increasing the salience and consistency of punishments would be important elements in these interventions. Other important intervention targets would include increasing delay of gratification and compliance with program rules and reducing aggression and associations with antisocial peers.

To summarize, major progress in the near future is likely to be dominated by advances in neuroscience associated with better neuroimaging technologies, a better understanding of how and where neurotransmitters work, and the knowledge produced by the Human Genome Project. The prospects for progress in the treatment of psychopathy are likely similar to those for other major conditions, such as schizophrenia, that are known to be at least partly heritable, to arise during development, and to have neurological correlates. Only basic research can provide insight into the etiology of psychopathy, but such investigations, even when successful, require applied and evaluative research to transform the resulting clinical intervention. And applied major theme research on psy

**REFERENCES**


the resulting etiological insights into practical interventions. The interplay between basic and applied investigations is likely to be a major theme in fostering productive future research on psychopathy.

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REFERENCES

nal of Personality and Social Psychology, 44, 608–626.
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