New Approaches to Juvenile Delinquency: Psychopathology, Development, and Neuroscience

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New findings in epidemiology, developmental psychiatry, and neuroscience offer the opportunity for a new perspective on the problems of juvenile delinquency and bring to bear the insights of modern psychiatry in the treatment and successful rehabilitation of juvenile offenders.

"If we build palaces for children we tear down prison walls."
- Julius Tandler, 1938

Juvenile delinquency continues to be a major worldwide social problem. A series of new findings in epidemiology, developmental psychiatry, and neuroscience offers the opportunity to recast the problems of this recalcitrant and difficult-to-access population and bring to bear the insights of modern psychiatry in the treatment and successful rehabilitation of juvenile offenders. Delinquency can be seen as one maladaptive pathway in development that may result in antisocial and criminal behavior. However, clustering delinquents by type of crime and other criteria has shown only limited success in remedying and preventing adverse outcomes and recidivism.\(^1\) This suggests the need for new approaches to the issue of maladaptive aggression in juveniles. The traditional criminologic view of delinquency has resulted in a very large, heterogeneous category that has poor predictive validity in assessing long- and short-term outcomes.\(^2\)

Epidemiologic insights combined with developmental psychiatry and neuroscience provide a new perspective that can inform diagnosis and treatment and may even help to prevent delinquency. Maladaptive aggression and psychopathology may best be considered as a subset of overall antisocial behavior and delinquent patterns (ie, adjudicated antisocial behavior) (Figure 1). Isolated antisocial behavior is extremely prevalent, especially in adolescents but has only a small chance of persistence. As we add psychopathology, especially psychopathy, prevalence decreases but chances of persistence increase greatly. Thus, we argue that the rehabilitation of juvenile delinquents without modern psychiatric evidence-based treatment is not likely to be successful, extending the arguments of Raine\(^3\) to view criminality as a form of psychopathology and apply them to children and adolescents. One promising approach to understanding these phenomena comes from neuroscience and developmental psychiatry, which propose distinct subtypes of aggression based on different underlying neurophysiologic and psychological mechanisms and provide an understanding of these processes in both evolutionary and clinical terms. This approach may be used to link specific techniques and treatments.

High rates of diverse, comorbid, and severe psychopathology

Based on several studies that have shown extraordinarily high rates and wide-ranging forms of psychiatric morbidity, delinquents can be classified on the basis of underlying psychopathology and thereby brought into the purview of mental health.\(^4-8\) These high levels of psychopathology have been unequivocally established in several worldwide screening studies.\(^3\) High levels of morbidity are equally evident in juveniles on probation and in incarcerative settings. Suffering from psychiatric disorders in certain psychosocial contexts (eg, impoverished, unstructured, or outright injurious environments) seems to facilitate the expression of maladaptive aggression, as evidenced by the exceedingly high levels of conduct disorder and antisocial personality disorder in delinquent populations.\(^9\) Results from the California Youth Authority survey of 850 incarcerated delinquents who were examined by structured interviews showed prevalence rates in excess of 90% for externalizing disorders (such as disruptive behavior disorders and substance use disorders) in boys and girls.\(^9\) In the same study, girls (64%) were found to be twice as likely to have internalizing disorders as boys (29%), with depression and anxiety as leading diagnoses. In addition to these findings, comorbidity was the norm, with more than 80% of both boys and girls having 3 or more mental health diagnoses.

Juvenile justice systems seem to detect certain forms of psychopathology (such as substance abuse
and learning disorders) more reliably, while others (especially internalizing disorders, such as separation anxiety; posttraumatic stress disorder [PTSD]; and phobias) are less well-recognized and therefore often go untreated. The reasons for this underdiagnosis are complex, but it is partially driven by ethnicity, age, and socioeconomic effects. While these psychiatric syndromes are not necessarily direct pathways to delinquency, they can create a set of circumstances that increase the likelihood of certain behaviors and cognitions that put adolescents at risk for persistent delinquent behavior. Many forms of psychopathology (e.g., attention-deficit/hyperactivity disorder [ADHD], bipolar disorder, and PTSD) interfere with and prevent the juvenile’s participation in rehabilitative programs and thus contribute to adverse criminologic outcomes.

Using a psychopathologic perspective to address the rehabilitation and treatment of delinquents suggests the use of effective interventions including psychotherapy, psychopharmacology, and sociotherapy to address specific processes and symptoms. It seems obvious that we need to directly examine the present penal treatment system for predelinquent and delinquent populations. These epidemiologic findings help to explain why present punitive and treatment approaches often fail. Viewing delinquency through the lens of psychopathology leads to a very different view of the justice system and its relationship to pediatric mental health (Figure 2). Maladaptive aggression is seen as one of the many manifestations of psychopathology. The shift in thinking means that treatment of psychiatric disorders becomes the treatment of maladaptive aggression. In the present model, there is disparate and piecemeal care that exists around and occasionally within the juvenile system. To replace this structure, we propose a view that places primacy on the etiologic underpinnings of aggression and moves away from more criminologic criteria. Such a perspective would replace typologies such as theft, truancy, and battery with a psychopathologic context in which these acts occur.

By instituting standard, evidence-based practices that have been developed and validated in studies of incarcerated adolescents, the juvenile justice system can be brought into alignment with modern continua of care. Regrettably, there are only a few studies in existence that apply modern manualized psychotherapies in these populations and even fewer that examine the role of medication. Still, separate clinical trials in these specially protected populations cannot be bypassed, and extrapolation from findings in regular clinical trials must be done with caution. Morbidity and comorbidity patterns in these usually carefully culled and controlled samples probably will not readily translate into similar efficacy rates and effect sizes of interventions. However, an evidence-based clinical approach to treatment of delinquent populations would decrease unrealistic demands on the juvenile justice system while simultaneously maximizing present resources and enabling the use of new resources. Such an updated system would produce more integrated juvenile justice and mental health systems that in all likelihood would surpass the current criminologic models in terms of producing improved outcomes. Trauma-related psychopathology

Thanks to the pioneering work of the Austrian August Aichhorn, the director of the Vienna Reform School in the 1930s, we have come to see the development of delinquent youth in the social context of the world they inhabit. Children grow and develop within a complex psychosocial environment that at times may result in disruption to the normal developmental pathway and lead them into a life of disorder characterized by aggression and conduct problems. Within these contexts, modeling of aggression can become a way of coping or result in fear conditioning. This latter process can result in the maladaptive expansion of fear and anxiety responses to stimuli that are similar to those that provoked the initial fear response. PTSD related to child abuse and neglect predominates among juvenile delinquents and has been cited as a risk factor for juvenile delinquency. These findings have been detailed in a series of innovative studies. For example, Ruchkin and colleagues studied 370 white male delinquents with a mean age of 16.4 years (SD, 0.9). They found that 42% of the group met full criteria and 25% met partial criteria for PTSD using the Schedulefor Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Versions. Of the study participants, 74% reported exposure to at least 1 violent event and 59% reported multiple exposures. The most common events included domestic violence (72%), witnessing a violent crime (51%), physical abuse (48%), and being a victim of violent crime (32%). In a recent study of PTSD among incarcerated juveniles, rates of 62% for females and 22% for males were reported. These studies suggest a noteworthy connection between psychiatric trauma and a child’s propensity to become maladaptively aggressive, as originally suggested by Aichhorn, who was influenced by Freud’s development-al approaches to psychopathology. The exact mechanisms of this association need to be studied, but we hypothesize that fear conditioning, a kindling mod-el of fear and aggression, and psycho-social modeling are all important to consider.
Recent research has begun to show that the result in these contexts is a pattern of emotional differentiation in which anger, sadness, fear, and aggressive behavior no longer serve the evolutionary purposes for which they were intended and instead become triggered in inappropriate circumstances or to an excessive degree.28 The result is a cascade of unregulated emotions with potentially adverse outcomes for both the perpetrator and target of the aggression. **Neuroscience of aggression points to new directions**

The juvenile justice system by and large treats all forms of aggression and antisocial behavior as if these were acts under rational control. Neuroscience teaches us that this is probably not so. In recent years, findings that aggression can be divided effectively into “hot” and “cold” show that “cold” instrumental aggression can be expected to be under some rational control.29 However, its counterpart, “hot” aggression, which is most commonly activated by emotional disorders as divergent as PTSD, bipolar disorder, and severe impairment of executive cognitive functioning, is much less so and very often has a kindled quality to it. Blair and colleagues30 have shown that these 2 types of aggression run on different neuroarchitectures, both serve an evolutionary purpose (defense and acquisition), and both can be derailed during normal development.

Hot aggression in particular seems to be a common accompaniment of psychopathologies, such as PTSD, bipolar disorder, and ADHD. It has many of the characteristics of classic psychiatric symptoms (eg, beyond voluntary control, exhibiting with considerable force, kindling, need for medication to ameliorate response). The law has acknowledged such a distinction for years: murder versus manslaughter, for instance. There is also good reason to think that it is hot aggression that is predominantly responsive to medications, while cold aggression needs containment, punishment, and behavioral interventions. Most likely, these insights will find their way into the courtroom and once again shift the border between pure response and responsibility.

There are several important implications of the neuroscience of aggression for the treatment of delinquent populations. First, the detection of psychopathology by suitable screening instruments that take the special characteristics of this population into account is a mandatory step in meeting the needs of most of these youths. Second, a great deal of thought will have to be given to the successful treatment of these subtypes of aggression. Most likely, effective interventions will be based on the integration of behavioral treatment, psychotherapy, sociotherapeutic structures, and psychoeducation, which together with differentiated and sophisticated psychopharmacology can successfully target all manifestations of maladaptive aggression. Third, the availability of novel interventions redefines the time of incarceration into a window of opportunity during which complicated treatment packages can be fine-tuned and maximized in terms of synergistic efficacy.

Because delinquent youths require such sophisticated integrated treatments, the optimal time to set up these complicated programs is when these youths are in secure settings that provide maximum control over problematic behavior while fostering compliance with protocols. Rather than simply “doing time,” incarceration is a window of opportunity for optimized treatment that, for a variety of reasons, was not previously possible. As confinement progresses, protocols can be defined and refined, so that at exit, youths stand a more realistic chance of avoiding the close to 80% relapse rate that is currently the result of punitive practices insufficiently integrated into the practice of modern psychiatry.

This process of repeatedly refined treatment most likely will not end with discharge, and innovative and effective wraparound services will need to be provided to ensure that the carefully crafted intervention packages remain intact and effective after release. These goals are not easily achieved, but they hold the promise that alignment with modern medicine opens new pathways for improvement of criminologic outcomes, benefiting all concerned: patients, their families and friends, and society at large. **Conclusions and implications**

Investigators are continuing to explore different ways of conceptualizing juvenile delinquency based on findings from the current literature on developmental psychiatry, epidemiology, and neuroscience. We have reviewed the high prevalence rates of psychiatric morbidity among juvenile delinquents and have discussed the potential pathways and relationships with social and environmental factors. Based on these hypotheses, we suggest that delinquents should be considered from a psychopathologic perspective that strongly supports the need to approach delinquents from a therapeutic rather than a punitive perspective. Juvenile justice settings can be seen as the sociotherapeutic framework in which modern psychiatric treatment can be delivered to a very difficult-to-reach population that often has high failure rates in community settings. The need for appropriate juvenile justice services for these persons has been established beyond any doubt.

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References: References


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