

Brief Communication

Three Theories that Explain why Male Antisocial Behavior in Childhood Predicts Male Antisocial Behavior in Adulthood

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Abstract

There is strong evidence from prospective longitudinal studies that psychopathology in childhood robustly predicts psychopathology in adulthood [1]. Lahey [1] has recently reviewed three of the major theories for this strong predictive correlation. This article will present a brief overview of these theories as applied to male life-course-persistent (MLCP) antisocial behavior which is arguably the most important of all pediatric mental health problems [2]. MLCP refers to the childhood onset of severe overt conduct problems such as physical aggression, opposition-defiance, and rule-breaking that emerge from early neurodevelopmental (e.g., Attention Deficit Hyperactivity Disorder) and environmental adversity risk factors (e.g., dysfunctional family) which greatly increases the risk for delinquency, adult criminality, and a host of other problems [3]. The focus on LCP that is *male* is appropriate as males are astonishingly 10 to 14 times more likely than females to develop LCP [3]. The much greater prevalence of MLCP receives strong support from research in the criminological literature on *career criminality* [4], which reports male/female ratios ranging from 9:1 to 12:1 [5]. Indeed, of all the multiple bio-psycho-social risk factors for the development of severe antisocial behavior, "maleness" is by far the most robust predictor [6,7]. Thus it is of high importance to understand why male antisocial behavior childhood is a strong predictor of male antisocial behavior in adulthood. In addition to presenting a brief overview of the three theories, the communication will also provide an example with each theory that helps explain why LCP is overwhelmingly male.

Same Biological Causes of Antisocial Behavior Operate over the Life Span

The first theory suggests that some or all of the same biological causes of adult antisocial behavior occur early in life and continue to operate into adulthood [1]. A prime example comes from the work of Adrian Raine and colleagues who have documented a substantial body of empirical research that implicates biological risk factors in the development of antisocial behavior [8 -11]. One such factor is low resting heart rate which is indicative of low arousal of the auto-

nomous nervous system. This factor is widely accepted as the best-replicated and most robust risk factor as several studies have found significant correlations between low resting heart rate and antisocial behavior in juveniles and adults [10]. There are two major theoretical interpretations of how under arousal as indexed by low resting heart rate increases risk for antisocial behavior [8]. Stimulation-seeking theory suggests that underarousal prompts individuals to engage in antisocial behavior to elevate their low arousal levels. Fearlessness theory proposes that low levels of arousal index a low level of fear that in turn may increase the likelihood that

they will engage in antisocial behaviors that require a degree of fearlessness to execute. Lastly, with regard to greater male prevalence of LCP, beginning at age 3 years a sex difference emerges with boys having lower resting heart rates than girls, by approximately 6.1 beats per second ($d = 0.36$) [9]. This finding was recently replicated in a study of East Asian juveniles which confirmed once again that low resting heart was a risk factor for antisocial behavior and was more characteristic of males [10].

Same Environmental Causes of Antisocial Behavior Operate over the Life Span

The second theory posits that the same environmental causes of antisocial behavior are chronically or intermittently operative across the life span. Therefore, when these same causes are encountered, they give rise to various forms of antisocial behavior. One of the prime examples of such causes is the association with antisocial peers. Namely, antisocial children tend to associate with antisocial peers which amplifies their existing antisocial behaviors through the twin processes of *deviancy training* and *coercive joining* [12]. Deviancy training refers to the reinforcement of various rule-breaking behavior and norms. Coercive joining, which has only recently been identified, [12], refers to adolescent gang relationships that are not characterized by typical adolescent friendships of joining and sharing a common interest but by interactions characterized as abrasive and harsh, with youth treating one another with a mix of coercion and control to attain dominance. Thus these youths socialize each other to seriously antisocial behavior through mutual training in coercion, dominance, and dangerousness. Lastly, with regard to greater male prevalence of LCP, since the vast majority of gang members are male [13] this greatly increases the likelihood that males with early starting antisocial behavior are much more likely than females to have their behavior maintained and magnified as they will have far more opportunity to associate with like-minded antisocial peers.

Childhood Antisocial Behavior Indirectly Increases Risk for Adult Antisocial Behavior

The third theory postulates that although child and adult antisocial behavior could have different causes, childhood antisocial behavior could indirectly increase the risk of adult antisocial behavior by precipitating a *developmental cascade*. Developmental cascade refers to processes by which functioning in one domain influence functioning in other domains over time with effects that are cumulative and progressive and thus shape the course of development [14]. These effects have alternately been referred to as *chain reactions*, *snowball*, *spillover*, etc [14]. As applied to antisocial behavior, Attention-Deficit/Hyperactivity Disorder (ADHD) is a prime example. ADHD has adverse effects on multiple domains including: family relations, peer relations, academic achievement, and physical health [15]. The resulting developmental cascade can trigger an antisocial trajectory that beginning with ADHD is followed by oppositional defiant disorder, conduct disorder, substance use disorder,

and antisocial disorder in adulthood [16]. Lastly, with regard to greater male prevalence of LCP, males are approximately three times more likely than females to have ADHD with high, impairing levels of hyperactivity/impulsivity [15]. Furthermore, it is precisely this dimension of ADHD which presents the greatest risk for the development of antisocial behavior [16].

Clinical Application and Future Perspective

In conclusion, it is important to note that these theories, as well as others not discussed, are not mutually exclusive and may all be correct to a degree. Thus all may contribute to a certain extent to the robust prediction of adult antisocial behavior from juvenile antisocial behavior. Furthermore, since all three theories postulate that the causes of MLCP begin early in development, they add strong support to the emerging consensus that if antisocial behavior is to be most effectively prevented, intervention efforts must start early, i.e., preschool [17,18]. Lastly, since the article is a brief communication and not a comprehensive review, the communication will briefly sketch a clinical application and a recommendation for future research relevant to the conclusion that intervention efforts must begin in the preschool years if they are to be most effective.

With regard to a clinical application, screening to provide the earliest possible, reliable identification of burgeoning antisocial behavior should focus on its most overt, salient manifestations, i.e., physical aggression, opposition, defiance, and rule breaking [7]. All these antisocial behaviors, especially in their extreme form, can be reliably distinguished in the preschool years from normative undersocialized behavior. Thus, these behaviors can become the focus of intervention efforts without undue concern for erroneously interpreting transitory, normative behavior as pathological.

With regard to future research, despite the fact that early conduct problems can be readily identified, very few studies have investigated intervention for these problems [17,18,7,19]. Furthermore, the studies that have been conducted for the most commonly implemented intervention involving the training of parents to better manage their problematic children have found only small to moderate improvements, with estimates of one fifth one third of children failing to show any improvement [18]. Thus, it is imperative that future research focus on new strategies for interventions in early-onset antisocial behavior in order to prevent a developmental cascade of such behavior.

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