Identifying gender-specific developmental trajectories of nonviolent and violent delinquency from adolescence to young adulthood

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A B S T R A C T

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Most research examining gender differences in developmental trajectories of antisocial behavior does not consider subtypes of antisocial behavior and is difficult to generalize due to small non-representative samples. The current study investigated gender difference in developmental trajectories from adolescence to young adulthood while addressing those limitations. Analyses were limited to respondents ages 15 and 16 in wave 1 (16–17 in wave 2, and 21–22 in wave 3) of the National Longitudinal Study of Adolescent Health ($n = 6244$, 49.5% males). Self-report nonviolent and violent delinquencies were simultaneously entered into latent class analysis. Four latent classes were identified: *low*, *desister*, *decliner*, and *chronic* (male-only). In addition to finding a male-specific *chronic* class, gender differences included differences in levels of nonviolent and violent delinquency between synonymous classes of males and females, and differences in prevalence of classes across genders. Neighborhood disadvantage and family support predicted trajectories.

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With the onset of developmental trajectory research over the last decade our understanding of antisocial behavior across adolescence has become more complex. This research has revealed distinct developmental patterns of antisocial behavior across this developmental period (for comprehensive reviews, see Moffitt, 2006; Nagin & Tremblay, 2005a, 2005b). However, these findings are predominantly based on male samples, perhaps due to males' greater involvement in antisocial behavior (Archer & Côté, 2005). However, extant research on gender differences in antisocial behavior suggests that males and females may follow different trajectories (see Fontaine, Carbonneau, Vitaro, Barker, & Tremblay, 2009 for a comprehensive review). Additional shortcomings of the current research include sample quality, measurement, and model identification methods. Our goal was to address these limitations with a study based on a large nationally representative sample with specific measures of nonviolent and violent antisocial behaviors. Before setting out specific aims, we first review literature on the developmental trajectories of antisocial behavior in general, and then studies specifically examining gender differences in these developmental trajectories.

Developmental trajectories of antisocial behavior

While most antisocial adults demonstrate a life history of behavior problems that can be traced back to early childhood, not all antisocial children (in fact, only a relative few) continue to show antisocial behavior later in life (Maughan & Rutter,

2008). The most well-known model of antisocial behavior trajectories is Moffitt's (1993) developmental taxonomy, which provides that the general population of delinquents includes two distinct antisocial subgroups that follow different pathways and have unique etiologies: a small early-onset/life-course-persistent group (5–10%) and a larger adolescence-limited group (15–30%). Life-course-persistent individuals demonstrate early-onset symptoms of antisocial behavior, partially linked to neuropsychological characteristics (e.g., difficult temperament, neuropsychological deficits), which reciprocally interact with criminogenic environments (e.g., disruptive family, poor parenting) (Moffitt, 1993, 2006). Adolescence-limited individuals, however, manifest antisocial behavior primarily during adolescence due to temporary deviant peer influences and poor parental monitoring, but desist thereafter. These adolescence-limited individuals are also less inclined toward aggressive and violent behaviors compared to life-course-persistent individuals (Moffitt, 1993, 2006).

In addition to the life-course-persistent and adolescence-limited groups, which have been found in multiple independent empirical studies with various samples across countries (e.g., Broidy et al., 2003; DeLisi, 2001; Piquero & Brezina, 2001), other subgroups have been identified. These subgroups include a childhood-limited group, manifesting antisocial behavior mostly during childhood but desisting in adolescence (e.g., Odgers et al., 2008), as well as the never/low group, which is typically the largest, abstains from antisocial behavior, and is highly prosocial and high-functioning (e.g., Piquero, Brezina, & Turner, 2005). Additional identified groups, with labels varying to accommodate child- or adolescent-only samples, include: Chronic, which resembles the life-course-persistent group, and the low-desister/moderate-declining and high-desister/high-declining groups, which differ in severity, onset, and timing of desistence, but both resemble the adolescence-limited group (Nagin & Tremblay, 2005a, 2005b).

Gender differences in the developmental trajectories of antisocial behavior

Despite well-documented gender differences in antisocial behavior (e.g., Archer & Côté, 2005; Moffitt, Caspi, Rutter, & Silva, 2001), gender differences in the developmental trajectories of antisocial behavior have been relatively understudied. Most research is based predominantly on males, or on mixed samples without explicit examination of gender differences. Given that males are more likely to be chronic offenders and involved in more violent behaviors than females (Moffitt et al., 2001), it is reasonable to expect that the prevalence of life-course-persistent groups would be higher among males, whereas the prevalence of the adolescence-limited group would be similar across gender groups. There is some evidence that trajectory prevalence differs by genders. For example, males seem more likely to be early-onset/life-course-persistent than females, whereas they are only slightly more likely to belong to the adolescent-limited group (Moffitt & Caspi, 2001; Moffitt et al., 2001). Conversely, the prevalence of the low trajectory appears to be higher in females than in males (Lahey et al., 2006; Odgers et al., 2008).

Among the few researchers to focus explicitly on gender, Silverthorn and Frick (1999) proposed a female-specific adolescent-delayed-onset group that shares similar risk factors (e.g., neuropsychological deficits, dysfunctional family environment) with male early-onset/life-course-persistent groups, but does not manifest antisocial behavior until adolescence. This group was also found in a small at-risk sample (Silverthorn, Frick, & Reynolds, 2001). Using data from a large longitudinal cohort study and official records, D'Unger, Land, and McCall (2002) identified three female trajectories: non-offenders, low-rate, and high-rate adolescent peaked, which were similar to never/low, low-desisting, and high-desisting, respectively. Two other trajectories were identified in males: low-rate chronic and high-rate chronic. Among both low-rate and high-rate adolescent groups, males reported more police contacts than did females; and the female high-rate adolescent group showed more similarity to the male low-rate chronic group than to the male high-rate adolescent group.

Previous limitations and the scope of the current study

As demonstrated in the above studies, gender differences in trajectories do exist. The goal of the current study was to add to the understanding of such gender differences in antisocial behavior trajectories by addressing several limitations in the current literature. First, and perhaps most important in relation to potential gender differences, most studies use aggregated measures of antisocial behavior without differentiating subtypes of antisocial behavior (e.g., Moffitt & Caspi, 2001; Odgers et al., 2008). This measurement issue could potentially mask differences in developmental pathways for antisocial behavior subtypes of nonviolent and violent delinquency. These different aspects of antisocial behavior have been shown to have different etiologies and may represent qualitatively different types of antisocial behavioral trajectories (e.g., Burt & Neiderhiser, 2009; Lacourse et al., 2002). The importance of these differences is suggested in findings from Fergusson and Horwood (2002), which revealed similar latent class trajectories but different prevalences when using property offenses vs. violent offenses to identify trajectories.

Second, many previous studies used a priori criteria or single threshold criteria (e.g., age of onset) to identify trajectories (e.g., Mazerolle, Brame, Paternoster, Piquero, & Dean, 2000; Silverthorn et al., 2001) that could be subjective and lead to rather different findings (Fontaine et al., 2009). Recent advances in group-based methods such as growth mixture modeling (GMM; Muthén & Shedden, 1999), latent class growth analysis (LCGA; Nagin, 1999, 2005) and latent class analysis (LCA; Collins & Lanza, 2009) could provide more robust estimation. These mixture approaches assume that there are mutually exclusive and exhaustive latent groups in the population and are especially useful in capturing heterogeneity in developmental trajectories.