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**PARENTS, IDENTITIES, AND TRAJECTORIES OF ANTISOCIAL BEHAVIOR
FROM ADOLESCENCE TO YOUNG ADULTHOOD**

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Abstract

PURPOSE

Assessments of young adult well-being often focus on family formation and employment experiences, and ignore the potentially important, continuing role of parents. We consider whether and how parental influence reaches beyond the adolescent years.

METHODS

Drawing on longitudinal data from the Toledo Adolescent Relationships Study (TARS) (N = 1,242) and multilevel modeling, analyses examine direct and indirect ways that traditional parenting practices, as well as parental histories of problematic behavior influence trajectories of offspring antisocial behavior.

RESULTS

Parental antisocial experiences influenced young adult outcomes and operated through youths' own developing identities. Youths whose parents scored higher on an index of antisocial behavior were more likely to agree with partier and troublemaker labels. Traditional parenting factors, such as parental support and harsh parenting also influenced respondents' own trajectories of antisocial behavior. Thus, parental influence persisted net of young adult gainful activity (school, employment), parenthood, and intimate involvement.

CONCLUSION

The results of the current study highlight that parent-child relationships and their association with antisocial behavior remains fluid and dynamic well into adolescence and young adulthood. Parents are also implicated in the adoption of problematic identities which in turn are associated with antisocial behavior. Taken together, greater attention should be given to how parents shape and influence the trajectories of behavior among their adolescent and young adult offspring.

Keywords: antisocial behavior; adolescence; young adulthood; family; parenting

1.0 Introduction

It is well accepted that parents provide a critical foundation for their children's behavior. Parents who effectively establish a strong bond with their children early in life foster children's capacities to develop strong, healthy, and prosocial bonds with others across adolescence and into adulthood (Hirschi 1969; Collins 1996). In contrast to the prosocial benefits provided by attachment, harsh parenting has been linked to a host of deleterious outcomes including antisocial behavior (Straus Douglas and Medeiros 2014). Thus, attachment and harsh parenting represent distinct forces (support and coercive control) that exemplify the quality of the parent-child social bond and independently influence antisocial behavior. While parent-child bonds are likely to demonstrate a great deal of continuity over time, variations in the quality of the parent-child relationship may occur (Aquilino 1997). Erosion or improvement in the parent-child bond, as well as changes over time in parenting practices themselves may differentially influence the child's behavior. Parents' antisocial histories are also important to consider, and current theoretical treatments have suggested further that traditional parenting measures, such as those described above (e.g., attachment) may condition the effects of parents' antisocial tendencies on offspring behavior (Brauer and DeCoster 2015). However, as a key adolescent developmental task is identity development, another possibility is that parents' antisocial histories influence identity formation in their offspring, which in turn influences antisocial behavior.

In the current study we draw on longitudinal data from the Toledo Adolescent Relationships Study (TARS) to focus on how parental factors influence trajectories of antisocial behavior in young people from adolescence through to the less well-researched period of young adulthood. Specifically, we examine the influence of parents' own early involvement in delinquency, level of attachment to children, and harsh parenting practices on offsprings'

trajectories of antisocial behavior. We also assess whether parents' delinquency influences trajectories of antisocial behavior directly or indirectly through identity processes. Parents' self-reported delinquency during adolescence is assessed at wave 1, while respondents' reports of attachment, harsh parenting, and identity endorsement of specific identities such as "partier" and "troublemaker" are time-varying measures assessed at each of the five waves. Our analyses consider the following: (1) Does parent's delinquency distinguish between offspring's trajectories of antisocial behavior; (2) Do improvements and declines in attachment and harsh parenting correspond to within-person change in trajectories of antisocial behavior, controlling for unmeasured heterogeneity among youths; and (3) Does the parent's own early involvement in delinquency influence antisocial behavior indirectly through the child's adoption of antisocial identities (troublemaker, partier)? As noted by Loeber and Farrington (1994), longitudinal designs offer advantages, such as tracing developmental sequences, and examining processes of continuity and discontinuity in deviant behaviors. Furthermore, TARS' accelerated cohort design is an asset here, in that it enables us to examine the full span of adolescence and young adulthood (12-29 years of age) across a period of 11 years with only a few waves of data (Singer and Willett 2003:139).

2.0 Background

2.1 The parent-child bond and antisocial behavior

Numerous studies have examined the influence of parents during early childhood and adolescence on their children's emotional and behavioral outcomes, including antisocial behavior. Particularly notable within criminology is Hirschi's (1969) control theory, which posits that strong feelings of attachment to parents create a meaningful bond that the child would not wish to jeopardize by engaging in delinquent or other problem behaviors. Furthermore, the

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parent-child bond is seen as predictive of the ability to establish attachment to other prosocial relationships (e.g., peers, school, intimate partners) as the child moves into adolescence and young adulthood (Gottfredson and Hirschi 1990; Collins 2003). Such prosocial relationships are viewed as protective against antisocial behavior. These practices may also weaken social bonds with parents that are ultimately reproduced in other social settings (Colvin and Pauly 1983).

Additional work focuses on the association between family structure and delinquency and suggests that parents' primary role during adolescence is controlling access to deviant peer networks through supervision (Anderson and Hughes 2008; Matsueda and Heimer 1987). However, Demuth and Brown (2004) find that parenting factors mediate the influence of family structure on delinquency, with parental attachment operating as a stronger protector than supervision. Similarly, Warr (2005) finds that adolescents who are close to parents are less likely to acquire delinquent friends.

Coercive parenting practices are theorized to be associated with increased antisocial behavior in several ways. First, social learning perspectives suggest that parenting practices that include physical punishment may serve as a model for subsequent aggression in children (Conger et al. 2015). Additionally, parental discipline that is inconsistent and overly punitive may inhibit parental efforts to instill sufficient self-control thereby compromising efforts to promote conforming and prosocial behaviors (Gottfredson and Hirschi 1990). Other theoretical perspectives highlight the potential of coercive exchanges to escalate and become entrenched (Snyder and Patterson 1987), thereby producing negative emotions including anger (Agnew 1985).

In summary, attachment and harsh parenting (i.e., support and coercion) are often viewed as cornerstones of parenting, with attachment pulling youth away from crime, and harsh

parenting pushing them towards crime (Colvin, Cullen, and Vander Ven 2002). Thus, high levels of support accompanied by low levels of coercion are viewed as the optimal scenario and least likely to be associated with antisocial behavior. There are two limitations to this approach. First, this tradition has focused primarily on parents' early, formative role, an emphasis that does not take into account the degree to which parent-child relationships and parenting practices may change over time. Second, this exclusive focus on support and control fails to account for parents' own antisocial history, which may directly influence child behavior, and in turn may shape social interactions between parent and child. Such social interactions may either directly or indirectly influence antisocial behavior among offspring (Giordano 2010).

2.2 Building on the foundation of early parent-child bonds: parenting and antisocial behavior over time

Although extensive studies have examined crime and delinquency during the adolescent period, considerably less work has focused on the transition from adolescence to young adulthood (Cernkovich and Giordano 2001). Thus, there is a need for studies examining the developmental patterns associated with this period, how they shape parent-child interaction, and ultimately influence trajectories of antisocial behavior. The developmental tasks associated with early adulthood have typically included completing formal education, launching a career, and establishing an independent residence and family of one's own (Shanahan, Porfeli, Mortimer, and Erickson 2005). Criminology has focused almost exclusively on marriage and employment as positive influences on desistance from crime. Laub and Sampson (1993; 2003) have argued that the institution of marriage provides informal social controls that promote pro-social behaviors and work against continued adult criminality. Specifically, these informal controls provide turning points and work in concert with available social capital to explain declines in

criminality that occur within the adult life course. Laub and Sampson found that as social capital accrues through investment in pro-social activities and relationships associated with work and marriage, the more individuals have to lose by engaging in antisocial behaviors. Thus, the theoretical emphasis is similar to Hirschi's early depiction of the role of informal social control, but the referent shifts away from early familial dynamics to the more adult concerns of marriage and ties to the economic system.

While acknowledging the contributions of the scholarly work described above to our understanding of adolescent delinquency, and offending versus desistance in adulthood, a gap remains with respect to explaining the mechanisms associated with transitioning from adolescence to early adulthood and patterns of offending during this stage of the life course. Although criminologists have focused on the benefits of marriage, parenthood, and employment as predictors of desistance through the acquisition of social capital, the median age of first marriage in the U.S. is 29 for men and 27 for women (United States Census Bureau 2016). Additionally, recent work has highlighted selection processes into marriage suggesting that those with the most resources and least debt are more likely to marry relative to their more socioeconomically disadvantaged peers (Acs 2007; Addo 2014). Thus, marriage as a form of social capital associated with deterrence from crime is not a universally experienced transition event for many young adults. Even as many young people choose cohabitation as a prelude or replacement to marriage, recent work suggests that cohabitation may not offer the same protective effects as marriage (Siennick et al. 2014).

Similar to marriage, the age for first birth among mothers in 2013 was 26, representing an all-time national high (Mathews and Hamilton 2014). Meanwhile the number of births to teenage mothers has seen a long-term decline over the last seven decades (Martin, Hamilton, and

Osterman 2015). Consequently, parenthood is an event that is increasingly reserved for later in the life course.

Finally, unemployment rates for those aged 20-24 hover around 10%, with young people of color disproportionately affected (United States Department of Labor 2016). Hamilton and Hamilton (2006) note that young people tend to display high rates of mobility in their employment endeavors, but it is not clear whether this represents deliberate exploration or unintentional floundering. Arnett (2000) argues that employment during adolescence is primarily a means of earning extra money to spend in pursuit of leisure activities, but as young people transition to adulthood, work takes on greater meaning as they consider how it will impact their lives long term. Delays in marriage and childbirth may result in young adults feeling less pressure to commit early to careers, favoring instead an exploration of a variety of occupational pursuits in an effort to find a good match to their individual interests and skills (Arnett 2004). Consequently, employment may not operate as a significant source of social capital in ways that characterized earlier eras when the transition to adulthood was more straightforward.

The trends outlined above highlight that variations exist in acquiring the social capital associated with traditional sources of informal social control. Against this backdrop, it is intuitive to consider the potential of parents as continuing sources of reference and influence. While the parent-child bond established in early childhood serves as an important foundational base, parent-child relationships continue to develop, and are also subject to change as individuals mature into adulthood (Aquilino 1997). Consequently, parents may serve to fill the gap and continue to be influential as offspring navigate this key and increasingly uncertain transition period. Emotional, identity, and material support from parents may operate as a specific set of

resources that decrease involvement in antisocial behavior across adolescence and into adulthood. Prior work has argued that delinquency increases in adolescence as parental influence wanes and peer influence increases (Jang 1999). However, a less considered notion is that additional changes in parental influence may affect the nature of the adolescent to adult transition, or that these variations are related to parents' own behavioral backgrounds or orientations.

Thus, while prior research has highlighted the importance of harsh parenting as a predictor of antisocial behavior (Simons, Johnson, and Conger 1994; Pettit et al. 2001), most of the research has focused on early childhood experience, and has not considered the possibility that coercive parenting may continue or abate as children begin to mature. This is unfortunate since there is evidence to suggest that harsh parenting and its deleterious effects continue into adolescence. Specifically, researchers have found that harsh parenting experienced during adolescence exerts stronger effects on outcomes of delinquency and offending measured in adolescence and young adulthood relative to harsh parenting experienced solely during early childhood (Thornberry, Henry, Ireland and Smith 2010; Thornberry, Ireland, and Smith 2001). This reinforces the need for examining harsh parenting and its association with antisocial behavior during the developmental periods of adolescence and young adulthood.

Further, as offspring age, move out of the parental home, and gain firsthand experience of adult life, some perspective may be gained that allows for a "mellowing" in how adult children view childhood experiences, and parents themselves (Giordano, Schroeder, and Cernkovich 2007). Thus, a direct "hook" for change (e.g., employment, marriage) may not be a prerequisite for desistance from antisocial behavior. Instead, the evolution of the parent-child relationship itself may exert a positive influence on the individual's trajectory. Accordingly, we expect that

shifting levels of attachment will be associated with variations in involvement in antisocial behavior, as (1) increased attachment reduces the negative emotionality that may have been associated with some ‘rebellious’ acts, and (2) improved relationships provide a path to tangible and emotional supports. In contrast, parents’ continuing or escalating pattern of reliance on harsh parenting and deteriorating parent-child relationships may be implicated in offsprings’ continued antisocial behavior involvement across the transition period.

2.3 Parenting, identity and antisocial behavior

Support and control are important dimensions of parenting, but social learning theories have also underscored that the parent’s own behavior profile ‘matters.’ Numerous studies have shown evidence of intergenerational continuity in antisocial behavior, and thus a comprehensive treatment of parenting effects requires attention to the parent’s behavior and orientation (Farrington 2011; Giordano 2010). Parents serve as key models, and also continually communicate attitudes and world views that may increase the likelihood that the child will exhibit aggressive tendencies, or become involved in other forms of delinquency. Yet situating social learning processes within a symbolic interactionist framework allows for consideration of how parents influence child behavior through processes related to self and identity. This adds an important dimension to a straightforward learning framework, as research has clearly demonstrated that intergenerational continuity is not inevitable (Thornberry 2005). Thus, variations in developing identities are potentially important mediators and sources of variation, even where parental antisocial behavior is a feature of the child’s background and experience.

Although modeling and specific “definitions favorable to the violation of law” may be features of the family environment, (Smith et al. 2011; Widom 1989), and the learning of definitions (Heimer and DeCoster 1999; Matsueda and Heimer 1987), symbolic interactionism

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stresses that (1) learning continues throughout the life course, (2) individuals are not passive recipients of these experiences and definitions, and (3) over time, identities take shape that give greater coherence to these definitions or alternatively develop in contrast to them (Mead 1934). Thus, identities may serve as an important mechanism that links parental influence to behavioral outcomes such as antisocial behavior, or that anchor a path that diverges from that of the parent. In addition, consistent with Cooley's (1972) notion of the "looking glass self," children who perceive parents as warm and supportive are more likely to develop positive views of themselves. Consequently, identities shaped through parent-child interaction may serve as a cognitive filter as the child encounters contextual changes associated with moving into new adult roles. How an individual "sees oneself" has the potential to influence not only the adoption and expression of these roles, but also receptivity to antisocial companions and opportunities, all of which ultimately provide shape and form to an individual's trajectory of antisocial behavior over time. Thus, while traditional parenting factors such as closeness, support, and monitoring may serve to shape children's perceptions of themselves, parents may influence identity formation directly through their own behaviors that include coercive practices, but also their antisocial behavior profiles. For example, Simons et al. (2007) argued that parents are uniquely positioned to influence child attitudes, emotions, and beliefs through both deliberate and unintentional means. They found that parents who are hostile and rejecting, and are antisocial themselves are more likely to have children involved in delinquent behavior.

Matsueda (1992) has argued that parents potentially play a central role in which negative and positive self-attributions are adopted by offspring. Because parents themselves may endorse conventional stereotypes of who commits deviant acts, parents who have past histories of problematic behavior may be more prone to communicate negative information to offspring

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relative to more prosocial parents. Such negative information may not only consist of problematic labels such as the “troublemaker” identity described by Matsueda, but also involve communications that convey the degree of importance that parents assign relationships with their child. Qualitative work by Giordano (2010) has highlighted some of these indirect transmission processes, with parents often unintentionally conveying negative messages to offspring in an effort to avoid history repeating itself. Unfortunately, irrespective of parents’ best efforts, youth often adopt identities they directly associate with the parents’ own deviant history. This is illustrated in the quote below from a respondent in the Giordano study.

“‘Cause we’re so much alike. I don’t know. ‘Cause I’m exactly how she was when she was my age. Partying and...Neither one of us liked to go to school. I don’t know. We’re just exactly the same. Just the way we act. [LaVonda]” (Giordano 2010:152).

Prior work by Matsueda and Heimer (1987) has highlighted how identities crafted through social interaction with others, such as that of a troublemaker, are positively associated with delinquent behavior, and contribute to delinquency involvement, net of traditional risk factors. However, identities such as “partier” also vary and may influence behavioral trajectories. For example, numerous studies have documented strong connections between crime and substance use, and thus the party orientation, while not specifically criminal, may be linked to increased receptivity to routine activities and affiliations that make delinquency and crime more likely. To date, research has not yet considered the role of parents in relation to the development of identities such as troublemaker and partier, nor explored the impact of variations over time in adoption of these self-views. Thus, we determine whether parents’ own early antisocial behavior and parenting practices is associated with increases in offspring’s negative

identities and delinquent behavior over time and whether these associations operate indirectly through identities.

2.4 The current study

This study will build on developmental and life course criminology perspectives to examine the ways that parents shape trajectories of antisocial behavior from adolescence to young adulthood. In the current study we examine both between-person and within-person variations in antisocial behavior. This work moves beyond prior studies by focusing on the antisocial behavior of parents and their children, but also considers the pathways through which parents influence their children. We hypothesize the following: (1) the average trajectory among youth whose parents report a history of delinquency during adolescence will be higher than the average trajectory of those youth whose parents do not report any adolescent delinquency; (2) attachment and harsh parenting will not only distinguish *between* trajectories, but improvements and declines in the quality of attachment and harsh parenting will correspond to *change* in antisocial behavior trajectories (within-person variation), controlling for unmeasured heterogeneity; and (3) parent's history of adolescent delinquency will influence trajectories of antisocial behavior indirectly through the child's adoption of an antisocial identity (troublemaker, partier).

3.0 Methods

We analyze data from the Toledo Adolescent Relationships Study (TARS), using self-reports of antisocial behavior from more than 1,300 respondents collected at five time points over an eleven year period that spans the life course stages of adolescence and young adulthood. We rely on multi-level models using HLM 7.01 (Raudenbush, Bryk, and Congdon 2000) for our analyses. Time-varying parenting variables are drawn from respondents' self-reports, while

time-stable variables, including parents' early antisocial behavior and some background demographic measures are drawn from the parent questionnaire administered at the first interview (separately from the child interview). Measures relating to identity, changes to social context associated with the transition to adulthood, and additional demographic measures are from respondents' self-reported data. Our longitudinal analyses are aimed at tracing the developmental patterns associated with the parent-child relationship and how these are related to patterns of antisocial behavior across adolescence and into early adulthood. This will provide additional information on the continuing influence of parents even as new sources of influence enter the picture.

3.1 TARS data

This research draws on data from the Toledo Adolescent Relationships Study (TARS), which is based on a stratified random sample of 1,321 adolescents and their parents/guardians. The TARS data were collected in the years 2001, 2002, 2004, 2006 and 2011. Analyses for the current study rely on structured interviews conducted at waves 1 through 5. The sampling frame of the TARS study encompassed 62 schools across seven school districts. The initial sample was drawn from enrollment records for 7th, 9th, and 11th grades, but school attendance was not a requirement for inclusion in the study. This is a significant advantage of using TARS in that youth engaged in antisocial behavior are more likely to not attend school (Henry, Knight and Thornberry 2011; Kearney 2008). The stratified, random sample was devised by the National Opinion Research Center and includes over-samples of Black and Hispanic adolescents. Based on 2000 Census data, the sociodemographic characteristics of Lucas County closely parallel those of the nation in terms of race (13% in Toledo and 12% in the United States are Black), education (80% in Toledo and 84% in the United States are high school graduates), median

income (\$50,046 in Toledo and \$50,287 in the United States), and marital status (73.5% in Toledo and 75.9% in the United States are married couple families). The initial sample included 1,316 respondents. Retention rates from the first interview were 89.1% for the second interview, 84.4% for the third interview, 82.8% for the fourth interview, and 77.8% for the fifth interview. Respondents' ages ranged from 12 to 19 years of age at wave 1, 13 to 20 years of age at wave 2, 15 to 22 years of age at wave 3, 17 to 24 years of age at wave 4, and 22 to 29 years of age at wave 5. Sixty-two percent of respondents identify as non-Hispanic white, 25% as non-Hispanic black, 11% as Hispanic and 2% as some other race/ethnicity. Respondents who identify as something other than White, Black or Hispanic ($n = 26$), were 12 years of age at wave 1 ($n = 20$) or 29 years of age ($n = 16$), and otherwise had insufficient data ($n = 12$), were deleted from the analytic sample. Thus, for the current analyses, the data reflects an 11-year longitudinal design across five time periods, spanning the ages of 13 to 28 years of age ($n = 1,242$ subjects, 5,198 observations).

Additionally, parents were administered a paper questionnaire at wave 1. The majority of those completing the questionnaire were female (90%) and/or the biological mother of the respondent (82%). Early analyses that included dichotomous variables of the gender and relation of the parent filling out the questionnaire to the respondent revealed that neither of these factors emerged as a significant predictor of the outcomes of interest. Consequently, these items were dropped from the present analyses.

3.2 Missing data

HLM is able to use any available data at the within-person level; however, data at the between-person level must be complete. Given the small number of missing data at the between-person level ($n = 12$), and that this constituted less than 1% of the sample, we deleted these cases

from the analytic sample. Attrition analyses revealed that respondents who were female, white, reported less structural disadvantage, and growing up in a two biological parent home, were more likely to have participated in all five waves. Wave participation rates, however, were not related to wave 1 measures of delinquency, parental support, harsh parenting, parent's early antisocial behavior or identity endorsement.

3.3 Measures

3.3.1 Dependent variable (time-varying)

Antisocial behavior is measured using nine items adapted from the 26-item inventory by Elliot and Ageton (1980). Items assess how frequently the respondents engaged in various antisocial behaviors including drug use, theft (minor and major), breaking and entering, assault and battery, property damage, selling drugs, public drunkenness, and carrying a hidden weapon. The responses for each item range from 0 for never, to 8 for more than once a day. Alpha scores assessing internal reliability as a latent construct for each wave ranged from 0.74 to 0.88. However, scales constructed from the mean or sum of inventories of delinquent items produce a measure that is "limited, discrete, and skewed rather than unbounded, continuous, and symmetric (Osgood, McMorris, and Potenza 2002:270). Additionally, such scales assign equal weight to all items. Thus, frequent positive responses to minor offenses such as public drunkenness are treated the same as more serious and less frequent offenses such as breaking and entering. This may obscure effects of certain causal factors relevant to more antisocial respondents, because their estimates are swamped by the high frequency of reports of minor offenses by less antisocial offenders (Cernkovich and Giordano 2001). To address these problems, we use a multivariate, multilevel Rasch model that employs a measurement model of self-reported antisocial behavior. This is described in greater detail in the section on analytic strategy.

3.3.2 Parental behavior (time-stable)

Parent's early antisocial history is assessed using a four-item scale ($\alpha = .62$).

Parents were asked if the following occurred during their teen years: (1) "I was suspended or expelled from school," (2) "I was arrested by the police," (3) "I drank alcohol," and (4) "I used drugs." Given the skewed nature of the variable we created a dichotomous measure coded as 1 for parents who reported any delinquent behavior (47%) and 0 otherwise.

3.3.3 Identity (time-varying)

Respondents were asked at each wave about a number of identity statuses (e.g., sexy, popular) and to what extent others would describe them in this manner (see especially Matsueda 1992). *Troublemaker identity* is assessed at each wave from an item, which asked respondents to what extent others would describe them as: "a troublemaker." Similarly, *partier identity* is a time-varying measure derived from an item, which asked respondents to what extent others would describe them as: "a partier." Responses for both measures range from 1 for *strongly disagree* to 5 for *strongly agree*. The troublemaker identity has a mean of 2.23, with a standard deviation of 1.03, and the partier identity has a mean of 2.95 and a standard deviation of 1.18.

3.3.4 Parenting (time-varying)

Parental support is a mean scale constructed of items used in prior research (Gold and Reimer 1975; Hirschi 1969) to assess the parent-child bond. Respondents were asked how much they agreed or disagreed with the following statements: (1) "My parents give me the right amount of affection," (2) "My parents trust me," (3) "I'm closer to my parents than a lot of people my age," (4) "I'm close to my parents." (5) "My parents sometimes put me down in front of other people," and (6) "My parents seem to wish I were a different type of person." Items 5

and 6 were reverse coded to reflect higher levels of support. Two additional items, (7) “I rely on my parents for advice,” and (8) “I can always count on my parents to help me out financially if the need arises” were included at wave 5 to assess the changing nature of parental support during early adulthood. Responses range from 1 for *strongly disagree* to 5 for *strongly agree*, with a mean of 4.03, and a standard deviation of 0.67. Alpha scores for this measure across the five waves ranged from 0.77 to 0.85.

Harsh parenting is a mean scale of three items from the Conflict Tactics Scale.

Respondents were asked “When you and your parents disagree about things, how often do they do the following” (1) “Call you names or insult you?” (2) “Push, slap or hit you?” and (3) “Yell at you?” For waves 1 through 4, responses ranged from 1 for *never* to 6 for *two or more times a week*. At wave 5 responses ranged from 1 for *never* to 5 for *very often*. We standardized the responses and used the z-scores to construct the scales for each wave with a mean of 0 and a standard deviation of 1. Aggregated across waves, the measure has a mean of -0.01 and a standard deviation of .99. Alpha scores ranged from 0.66 to 0.72.

3.3.5 Contextual variables (time-varying)

A number of time-varying measures that assess gainful activity, living circumstances, time spent with peers, parenthood, and intimate involvement are also included. *Gainful activity* is coded as 1 (92% of observations) if the respondent is attending school or employed full-time. Respondents who are not engaged in either activity are coded as 0.

Living independently is a binary variable coded as 0 for youth who continue to reside in the parental home, and 1 for those who live outside the parental home. Twenty percent of

observations across the four waves are coded as living away from home, however, it should be noted that at wave 4, 60% of respondents reported living away from home.

Time spent with peers is assessed with a single item, which asked respondents, “During the past week how many times did you hang out with your friends?” Responses were 1 for “not at all,” 2 for “1 or 2 times,” 3 for “3 or 4 times,” and 4 for “5 or more times.” An ANOVA analysis (results not shown) comparing delinquency scores among the four response patterns revealed that only the uppermost response of “5 or more times” differed significantly from the other responses. Thus, there was no detectable difference in delinquency among respondents who scored 1, 2, or 3 on this measure, while those who scored a 4 were significantly different from all other respondents. Consequently, we created a dichotomous measure such that *frequent time spent with peers*, was coded as 1 for respondents who answered “5 or more times” (40% of all observations), and 0 otherwise.

Parenthood assesses whether there are children present in the home. These may be the respondent’s biological children, or non-related children of the partner. Those who report having any children (20% of all observations) are coded 1 and 0 otherwise.

Relationship type is assessed by creating a series of dichotomous variables for single (15%), dating (64%), cohabiting (14%), and married (7%). Married is used as the contrast category because prior research has emphasized the importance of marriage for criminal desistance. *Current relationship* is a dichotomous variable measured at each wave and coded as 0 for those who are not currently dating, cohabiting or married, and 1 for those with a current intimate partner (52% of observations).

3.3.6 Demographic and background characteristics (time-stable)

Gender is a dichotomous variable with male (48%) as the contrast category. *Race and ethnicity* is composed of White non-Hispanic (63%), black non-Hispanic (25%), and Hispanic (12%). Dichotomous variables are created for each race/ethnic category, with white as the contrast category.

Disadvantage is measured at wave 1 using four items from the parent survey. Items refer to parents who reported less than twelve years of education, receiving government assistance for needy families (e.g., TANF, food stamps, or a housing subsidy), not having enough money to make a meal in the past 12 months, and unemployment as a “problem” in their neighborhood. The content of these items is consistent with previous work that suggests measuring socioeconomic status with educational, economic, and neighborhood indicators (Krieger, Williams, and Moss 1997). These items were summed into an index of disadvantage which ranges 0 to 4, with a mean of 1.28 and a standard deviation of 1.24.

Family structure is composed of four dichotomous variables indicating the household type in which the respondent reported living in during their adolescence at wave 1. The classifications are two-biological-parent (50%), single parent (26%), step-parent (18%) and other (7%) at wave 1. Dichotomous variables are created with “two biological-parent” households as the contrast category.

(TABLE 1 ABOUT HERE)

3.4 Analytic strategy

For the following analyses we employ hierarchical linear models (HLM) that nest observations over the five time periods within individuals. The current analyses use a three-level model where the first level constitutes a measurement model that estimates each individual’s

score at each wave on a latent scale of self-reported antisocial behavior, while level two is the change model, and level three represents the between-individual differences.

To differentiate between-person effects from within-person change, the values for time-varying covariates in the level two equation were group-centered; that is, values are transformed into deviations from each individual's mean calculated across all periods of observation (Horney, Osgood, and Marshall 1995). Additionally, at level three, a person-level mean for each time-varying measure is included. Thus, individuals serve as their own control, thereby increasing confidence that between-person differences are not contaminating the assessment of within-individual change. This process also assists in assessing mediating processes in multilevel models, particularly across levels, with respect to untangling within-group and between-group effects (Zhang, Zyphur, and Preacher 2009). In the mediational analyses, we focus on the person-level mean of the identity process (Level 3 variable) as the mediator of the link between parent's early antisocial behavior and the outcome of interest. We provide a description of our statistical model in greater detail below.

3.4.1 Statistical model for antisocial behavior

Level-one constitutes a measurement model of antisocial behavior that draws on item response theory (IRT). Rather than a simple sum of the individual items measuring antisocial behavior, IRT relies on mathematical models that estimate theta (θ), which represents a latent trait of interest, such as antisocial behavior (Osgood, McMorris and Potenza 2002). A respondent's position on θ is inferred by the following equation:

$$\eta_{ijk} = \pi_{jk} + \psi_i \quad (\text{Eq. 1})$$

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where η represents the log-odds of a positive response to item i , for respondent k , at wave j , π_{jk} signifies each individual's general likelihood of offending at a particular wave, and ψ_i represents the severity of each item.

The level-one model constitutes the measurement model that estimates ψ_i . Each of the nine items that comprise the scale of antisocial behavior were dichotomized such that respondents who reported having engaged in that behavior regardless of the frequency, were scored 1, and were scored 0 if they reported not having engaged in the behavior. A person period file is then constructed that situates persons within waves, which are then situated in a set of sub-observations, or cases, consisting of the nine latent trait items. The severity estimates represent the mean rates of response for each item across all five waves for the full sample. The mean likelihood to engage in antisocial behavior for any individual at a given wave (π_{0jk}) is modeled as:

$$\pi_{0jk} = \mu + X_{jk}\beta + W_k\gamma \quad (\text{Eq. 2})$$

where μ is the model intercept, X_{jk} is a vector of time-varying covariates for each respondent (k) at each wave (j), and W_k represents a vector of time-stable covariates for each respondent.

The level-two model (Equation 3) holds item responses constant across persons, but allows individual propensities, π_{jk} , to vary as a function of the mean person propensity over the five wave period k , β_{0k} , individual-level covariates X_{1k}, \dots, X_{nk} , and r_o represents any unexplained variance.

$$\pi_{jk} = \beta_{0k} + \beta_{1k} X_{1k} + \dots + \beta_{nk} X_{nk} + r_o \quad (\text{Eq. 3})$$

The level-three model (Equation 4) allows person mean propensities, β_{0k} , to vary as a function of the grand mean propensity to antisocial behavior in the sample, γ , and a random effect v_k .

$$\beta_{0k} = \gamma + v_k \quad (\text{Eq. 4})$$

Table 2 provides the percentage of cases with positive responses on each antisocial behavior item, as well as its accompanying severity coefficient and odds ratio. These numbers were derived by running the measurement model prior to the inclusion of any other covariates, while excluding one of the items from the model to act as the referent, in this case public drunkenness. Thus, severity coefficients and odds ratios refer to the probability that the behavior is reported relative to public drunkenness. Consequently, items with a higher percentage constitute behaviors that are engaged in more frequently by the sample, while those with a lower percentage are items that occur with less frequency and thus, are theorized to be more severe. Within the TARS sample, alcohol and drug use stand out as the two behaviors in which respondents are most likely to report, while carrying a hidden weapon, breaking and entering, and stealing something valued over \$50 are the behaviors least likely to be reported.

(TABLE 2 ABOUT HERE)

4.0 Results

To assess model fit, an intercept-only model was run to obtain the intraclass correlation (ICC). Results reveal an ICC of .495 (2.13/2.13 + 2.17) indicating the variance was virtually evenly split at the between- and within-person levels. We considered whether growth patterns (slope) varied randomly across individuals by including random effects for each of the age terms,

however, these were non-significant. Consequently, we chose to include a random effect for only the intercept in each of the models.

Below we present results from the Rasch models examining parenting and antisocial behavior across adolescence and young adulthood. The purpose of these analyses is to assess whether (1) trajectories of antisocial behavior among youth vary based on parent's history of adolescent delinquency; (2) changes in the parent-child bond and parenting practices correspond to within-person change in antisocial behavior trajectories, net of any between-person differences; and 3) parent's delinquency exerts a direct effect on between-person differences in antisocial behavior or operates primarily indirectly through identity processes. With the exception of the unconditional growth model, we control for gender, race/ethnicity, structural disadvantage, and family structure during adolescence.

Model 1 presents the results for the unconditional growth models of antisocial behavior among youth with delinquent and non-delinquent parents. Since non-delinquent parents are the reference, and age is centered at 13 years, the age coefficients represent the effect for a 13-year old youth with non-delinquent parents. Both age and age-squared were significant indicating a curvilinear relationship. The effect for parent's delinquency was positive and significant, while the interactions with age were not.¹ This suggests that while trajectories of antisocial behavior for youth in both groups follow a fairly typical age curve that peaks during the late teens, trajectories for youth with delinquent parents are, on average, higher compared to those with non-delinquent parents.

¹ Parent's delinquency did not interact with age regardless of where the age variables were centered.

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Model 2 introduces parental support and harsh parenting along with the time-varying and time-stable controls. Consistent with our second set of hypotheses, variations in parental support and harsh parenting not only distinguished between trajectories of antisocial behavior, but also corresponded to within-person changes in antisocial behavior. An increase of one standard deviation above the individual mean in parental support, corresponded to a 24% decrease in the odds of antisocial behavior ($e^b = .761$, $p < .001$). Conversely, an increase of one standard deviation above the individual mean in harsh parenting corresponded to a 19% increase in the odds of antisocial behavior ($e^b = 1.187$, $p < .001$). The between-person effects indicate that as the individual mean scores increased by one standard deviation above the grand sample mean, this corresponded to a 44% decrease in the odds of antisocial behavior for parental support ($e^b = .561$, $p < .001$), and a 27% increase in the odds of antisocial behavior for harsh parenting ($e^b = 1.274$, $p < .001$). Additionally, frequent time spent with peers and parenthood, were associated with antisocial behavior at both the between- and within-person levels. The variables in model 2 accounted for approximately 27% of the variance at the between-person level ($2.129 - 1.546 / 2.129$) and approximately 4% of the variance at the within-person level ($2.053 - 1.977 / 2.053$) compared to the unconditional growth model. Notably, none of the variables, including the traditional parenting variables, attenuated the effects of parent's delinquency, highlighting the need to consider processes beyond support and control.

Model 3 assessed whether the identity endorsements mediated the relationship between parent's delinquency and antisocial behavior at the between-person level. Effects for endorsement of the troublemaker and partier identities were associated with higher odds of antisocial behavior at the both the between- and within-person levels. Individuals with a higher endorsement of the troublemaker identity relative to the sample average showed increased odds

of antisocial behavior ($e^b = 1.593$, $p < .001$), as did those who endorsed the partier identity ($e^b = 1.546$, $p < .001$). Yet, each of the identities also demonstrated fluidity, with increases in endorsement of each identity leading to further increased odds of antisocial behavior (troublemaker - $e^b = 1.257$, $p < .001$; partier - $e^b = 1.200$, $p < .001$). Furthermore, the between-person effects of the two identities combined, reduced the coefficient for parent's delinquency by 43%, rendering it non-significant.² To assess mediation, we followed the procedures recommended by Zhang, Zyphur, and Preacher (2009). Given our use of the multilevel model and that our between-person variables are grand-mean-centered, we applied a t statistic (Freedman and Schatzkin 1992) to test the significance of the reduction in the coefficients after running separate models for each of the identity endorsements. While neither of these fully mediated the effect of parent's delinquency, the t -test for each was significant (troublemaker, $t = -14.24$, $p < .001$; partier, $t = -35.44$, $p < .001$), suggesting that each of these independently provided partial mediation of parent's delinquency on antisocial behavior. Additional analyses investigated whether the time-varying effects of parenting or identity endorsement on antisocial behavior differed based on parent's delinquency. These cross-level interactions were not significant.

5.0 Discussion

Parent's delinquency was associated with a higher average trajectory of antisocial behavior, thereby supporting our initial hypothesis. Furthermore, introduction of controls including frequent time spent with peers did little to diminish this association. While frequently spending time with peers is not problematic in itself, it is worth noting that youth who reported

² Separate models including each identity separately did not fully attenuate the effect of parent's delinquency, but still reduced it by 36% for the troublemaker identity, and 25% for the partier identity.

hanging out with friends five or more time per week had a higher average score of antisocial behavior compared to those youth who spent less time with friends. Frequent time with friends also demonstrated a strong association with antisocial behavior at both the between- and within-person levels. This suggests that parents' deviant histories exert their own independent effects on offspring behavior. This is in contrast to previous findings by Warr (1993) which suggested that parents' influence is primarily indirect through their ability to inhibit association with deviant peers.

Attachment and harsh parenting both influenced within-individual change in antisocial behavior trajectories even after controlling for between-individual differences, and the time-varying controls. This supported our second hypothesis and is consistent with developmental and life course perspectives that emphasize malleability in trajectories of behavior. These findings highlight that parents continue to matter beyond adolescence, and that the parent-child bond displays variations over time that influence trajectories of antisocial behavior. Contradictory to Hirschi's (1969) hypothesis of delinquent youth having "cold and brittle" relationships, these within-person level findings demonstrate that to the degree youth enjoy an increase in parent-child bond quality, this does correspond to a decrease in levels of antisocial behavior net of potential selection factors.

Endorsement of problematic identities accounts for some of the direct effects of parents' early antisocial history on antisocial behavior trajectories thereby providing partial support for the third hypothesis. These findings suggest that what individuals bring to the task of parenting, in terms of their early history, matters not only in their direct influence on antisocial behavior, but also indirectly through the child's own developing identities. However, since the troublemaker and partier identities only partially mediated the effect of parental early antisocial

behavior on antisocial behavior, future exploration of additional identity processes is warranted, and the notion of direct transmission should not be discarded.

While this study takes a long view on parenting, there are a few limitations. First, the directionality of the parent-child interactions cannot be discerned. While we depict parenting as influencing offspring's antisocial behavior, it is also possible that the offspring's antisocial behavior influences parenting. Cross-lagged models were considered. Given the time gaps between data points, however, we run the risk of overlooking the influence of more proximal parenting behaviors that would likely have a stronger influence on antisocial behavior. It is likely that parenting and antisocial behavior exert reciprocal effects on one another, demonstrating an interactional pattern. Consequently, determining which actor in the parent-child dyad is initiating the change is likely akin to a chicken and egg argument. Regardless of whose behavior is changing first, improvements or declines in parenting and antisocial behavior are contingent on one dyad member responding to the behaviors of the other. Thus, the results of the current study highlight that irrespective of the directionality, parent-child relationships and their association with antisocial behavior remain fluid and dynamic well into adolescence and young adulthood.

Another limitation is that the lack of data from parents across waves creates a heavy reliance on children's reports of the parent-child relationship. Since parental characteristics are only available at wave 1, mediational analyses must be limited to between-person effects that use aggregated means of identity processes and parenting practices. This excludes consideration of whether such indirect effects would be present at the within-person level.

Recognizing the dynamic nature of parent-child relationships has important social policy implications. For example, previous studies assessing the efficacy of juvenile drug courts suggest that parental involvement is a critical factor in ensuring success (Mericle et al. 2014; Alarid, Montemayor and Dannhaus 2012). If the assumption is that success is mainly a byproduct of selection it would suggest that youth with successful outcomes are likely those with consistently supportive parents and may not represent the population in greatest need of intervention. Meanwhile, those most at risk likely do not benefit, which then calls into question the need for such programs at all. In contrast, acknowledging that parent-child relationships are fluid and subject to change highlights that involving parents in juvenile justice interventions is not only beneficial, but necessary to increase successful outcomes even among those at high risk of persistent offending. This is further reinforced by our results showing that the association between parenting and offspring antisocial behavior was similar for youth irrespective of their parents' own delinquent history.

It is well understood that a key task of late adolescence and young adulthood involves the reorganization and transformation of the parent-child relationship to one that is less hierarchical, and one characterized by mutual respect (Longmore, Manning and Giordano 2013). While sources of social influence outside of the familial circle begin to emerge in the form of peers and intimate partners (Laursen and Williams 1997), relationships with parents remain, for better or worse, socially relevant in the lives of individuals (Birditt, Miller, Fingerman, and Lefkowitz 2009). Over the course of adolescence and the transition to adulthood, parents provide an ongoing source of social and material support (Schoeni and Ross 2005). While parent-child relationships are likely to demonstrate a considerable amount of continuity over time, there is also evidence that parent-child interactions do change over time (Aquilino 2005). Consequently,

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there is a continuing need for consideration of parents and the roles that they play in shaping trajectories of well-being among their offspring.

The current study represents a step in this direction, however, further research on parent-child relationships across adolescence and young adulthood is warranted. For example, here we have focused primarily on how parents' behavior influences on a particular child outcome. Yet, as children move into adulthood, opportunities for children to operate as sources of social and material support to parents increase. These opportunities provide openings for parent-child dynamics to be altered that could further influence outcomes for offspring, as well as their parents. This is a phenomenon that has been explored more extensively among older adults and their offspring (e.g., Lin 2008), but could well make a difference for understanding transformations in the parent-child relationship as individuals mature into adulthood. Additionally, there is evidence that variations in the paths to adulthood are becoming more numerous, and increasingly complex (Osgood et al. 2005). Thus, greater theoretical attention needs to be given to the ways in which different populations of parents and offspring experience this transitional period. Both parents and offspring will benefit from greater attention given to these issues and the mechanisms that help promote healthier and happier relationships over the life course.

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Table 1. Descriptive Statistics for Time-Varying and Time-Stable Covariates

	Total Sample 100.0%		Youth w/Delinquent Parents 47.5%		Youth w/Non-Delinquent Parents 52.5%	
	Mean/Pct	Std. Dev.	Mean/Pct	Std. Dev.	Mean/Pct	Std. Dev.
Time Varying (n = 5285)						
Age (<i>range = 13 – 28</i>)	18.90	3.91	18.78*	3.90	19.00	3.92
Troublemaker identity (<i>range = 1 – 5</i>)	2.17	1.01	2.24***	1.03	2.10	0.99
Partier identity (<i>range = 1 -5</i>)	2.83	1.20	2.88**	1.20	2.78	1.20
Parental support (<i>range = 1 – 5</i>)	4.04	0.66	4.02*	0.65	4.06	0.66
Harsh parenting (<i>range = -1.14 – 7.35</i>)	-0.01	0.99	0.04**	0.99	-0.05	0.10
Gainful activity	0.80		0.82*		0.79	
Lives away from home	0.29		0.30		0.28	
Frequent time w/peers	0.34		0.36**		0.33	
Parenthood	0.15		0.14*		0.16	
Relationship type						
Single	0.16		0.15		0.16	
Dating	0.68		0.67		0.68	
Cohabiting	0.11		0.12		0.11	
Married	0.06		0.06		0.05	
Current relationship	0.58		0.58		0.57	
Time Stable (n = 1242)						
	Total Sample 100.0%		Youth w/Delinquent Parents 47.9%		Youth w/Non-Delinquent Parents 52.1%	
Female	0.52		0.52		0.51	
Race/Ethnicity						
White	0.64		0.70***		0.58	
Black	0.25		0.19***		0.30	
Hispanic	0.12		0.11		0.12	
Structural disadvantage (<i>range = 0 – 4</i>)	1.28	1.24	1.26	1.18	1.29	1.29
Family Structure at W1						
Two biological parent	0.50		0.48		0.53	
Single parent	0.26		0.25		0.27	
Step-parent	0.17		0.23***		0.12	
Other living arrangement	0.06		0.05*		0.08	

Source: Toledo Adolescent Relationships Study

Note: * p < .05, ** p < .01, *** p < .001 significantly different from youth w/non-delinquent parents.

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Table 2. Items and Severity Coefficients from Measurement Model (N = 46,760)

Variable	Pct.	Severity Coefficient	Odds Ratio	S.E.
Intercept		-0.89	0.41	0.04
Been drunk in a public place (excluded)	34.05%			
Used drugs	23.0%	-0.42	0.66	0.04
Attacked someone	9.2%	-1.35	0.26	0.06
Stolen things worth \$5 or less	7.8%	-1.56	0.21	0.06
Sold drugs	6.8%	-1.79	0.17	0.07
Damaged or destroyed property	6.5%	-1.62	0.20	0.06
Carried a hidden weapon	5.4%	-2.02	0.13	0.08
Stolen things worth \$50 or more	3.0%	-2.49	0.08	0.08
Broken into a building or vehicle	2.8%	-2.53	0.08	0.08

Source: Toledo Adolescent Relationships Study

Parents, Identities, and Trajectories of Antisocial behavior

Table 3. Rasch Models for Antisocial Behavior, Parenting and Identity Endorsement (N = 1,242 subjects, 5,198 observations).

Variable	Model 1				Model 2 ^a				Model 3 ^a				
	Time-Varying		Time-Stable		Time-Varying		Time-Stable		Time-Varying		Time-Stable		
	<i>Coeff.</i>	<i>e^b</i>	<i>Coeff.</i>	<i>e^b</i>	<i>Coeff.</i>	<i>e^b</i>	<i>Coeff.</i>	<i>e^b</i>	<i>Coeff.</i>	<i>e^b</i>	<i>Coeff.</i>	<i>e^b</i>	
Intercept			-1.665*** (0.135)				-1.762*** (0.114)					-1.961*** (0.114)	
Age	0.211*** (0.036)	1.235			0.252*** (0.022)	1.286			0.265*** (0.024)	1.303			
Age-squared	-0.012*** (0.002)	0.988			-0.013*** (0.001)	0.987			-0.013*** (0.001)	0.987			
Parent's delinquency			.213** (0.173)	1.238			0.207** (0.071)	1.230				0.119 (0.067)	1.126
Troublemaker identity									0.228*** (0.050)	1.257		0.465*** (0.055)	1.593
Partier identity									0.182*** (0.032)	1.200		0.436*** (0.047)	1.546
Parental support					-0.273*** (0.047)	0.761	-0.579*** (0.095)	0.561	-0.268*** (0.032)	0.765		-0.409*** (0.082)	0.664
Harsh parenting					0.171*** (0.035)	1.187	0.242*** (0.063)	1.274	0.151*** (0.029)	1.162		0.175** (0.055)	1.191
Gainful activity					0.002 (0.052)	1.002	-0.079 (0.204)	0.924	0.009 (0.052)	1.009		-0.128 (0.188)	0.880
Lives away from home					0.036 (0.068)	1.037	0.039 (0.203)	1.040	0.029 (0.069)	1.029		0.130 (0.188)	1.139
Frequent time spent with peers					0.186*** (0.052)	1.204	1.126*** (0.140)	3.083	0.181*** (0.052)	1.198		0.657*** (0.139)	1.929
Parenthood					-0.462*** (0.093)	0.630	-0.391 (0.179)	0.677	-0.429*** (0.098)	0.651		-0.228 (0.166)	0.796
Relationship type (married)													
Single					0.198 (0.154)	1.219	-0.133 (0.428)	0.876	0.106 (0.160)	1.112		-0.203 (0.385)	0.816
Dating					0.305 (0.125)	1.356	0.666 (0.368)	1.947	0.179 (0.129)	1.197		0.243 (0.343)	1.275
Cohabiting					0.229 (0.119)	1.257	0.880 (0.378)	2.410	0.185 (0.124)	1.203		0.578 (0.342)	1.782
Current relationship					-0.050 (0.057)	0.951	-0.216 (0.153)	0.805	-0.012 (0.059)	0.988		-0.289 (0.143)	0.749
τ^{β} (between-person variance)	2.129						1.546					1.145	
τ^{π} (within-person variance)	2.053						1.977					1.890	

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* $p < .05$, ** $p < .01$, *** $p < .001$

Note: Standard errors are in parentheses

^a Models control for gender, race/ethnicity, structural disadvantage, and family structure at wave 1.

Source: *Toledo Adolescent Relationships Study*

