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CATCHING UP AND STAYING OUT OF TROUBLE: SERIOUS JUVENILE  
OFFENDERS' FACILITY SCHOOL EXPERIENCES AND THEIR TRANSITION TO THE  
COMMUNITY

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor  
of Philosophy at Virginia Commonwealth University.

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## Table of Contents

Acknowledgment.....	ii
List of Tables .....	vii
List of Figures .....	viii
Abstract.....	ix
Introduction.....	1
Delinquency in Adolescence.....	4
A Portrait of (Serious) Juvenile Offenders .....	5
Cumulative Disadvantage and Life Course Development of Crime .....	9
Effects of Arrest and Incarceration on Subsequent Behavior .....	11
Incarceration of juveniles in adult prisons.....	12
Collateral Effects of Arrest and Incarceration.....	13
Reduced educational attainment.....	14
Psychosocial consequences of incarceration during adolescence.....	15
Association with deviant peers.....	18
The Role of Education in Reducing Delinquency of Juvenile Offenders.....	20
Correctional education programs. ....	22
Work placement and reentry of emerging adults. ....	27
Limitations of Existing Research .....	29
Developmental perspective of incarceration and reentry. ....	30
Inclusion of individual perspective of education experience.....	32

Factors influencing the protective effect of correctional education.....	37
More reliable markers for successful re-integration into the community.....	43
Paucity of research on female offenders.....	44
The Present Study.....	45
Methods.....	49
Participants.....	49
Pathways to Desistance study.....	49
Sample.....	51
Measures.....	52
Facility school experience.....	52
Gainful activity in the community.....	53
Self-reported delinquency.....	54
Stay in the community.....	55
Community school history.....	55
Demographics.....	56
Data Analysis.....	57
Results.....	59
Differences between Study Sample and Excluded Pathways Sample.....	59
Demographic Characteristics by Age Group and Facility Type.....	65
Exploratory and Confirmatory Factor Analyses of Facility School Experience.....	67

Facility School Experience and Community Adjustment.....	69
Engagement in Gainful Activity and Future Offending .....	80
Stay in a Juvenile versus an Adult Facility .....	80
Sex Differences .....	81
Differences by Ethnicity and Study Site.....	86
Path Models with Community School History and Covariates.....	87
Community School, Facility School Experience and Adjustment after Release .....	87
Post Hoc Analyses of Involvement in Employment.....	90
Discussion .....	96
Attachment to Facility School and Community Outcomes .....	98
Differences by age, facility type, and sex.....	98
Self-reported delinquency and stay in community.....	100
Employment outcomes. ....	101
A Developmental Perspective on Returning to School versus Working .....	104
Academic Performance and Community Adjustment .....	109
Limitations .....	110
Implications for Research, Policy and Practice.....	116
Implications for research. ....	116
Implications for policy and practice.....	117
List of References.....	123

Vita ..... 140

## List of Tables

1. Descriptive Characteristics of Study Sample and Full Pathways Sample at Baseline .....	60
2. Demographic Characteristics of Study Sample by Age Group .....	61
3. Demographic Characteristics of Study Sample by Facility Type .....	63
4. Zero-Order Correlations of Facility and Baseline School Variables with Outcomes in Full Study Sample .....	70
5. Zero-Order Correlations and Estimated Means of Facility and Baseline School Variables with Outcomes in Younger Subsample .....	71
6. Zero-Order Correlations and Estimated Means of Facility and Baseline School Variables with Outcomes in Older Subsample .....	72
7. Parameter Estimates for Unadjusted Community Outcomes Models Full Study Sample .....	75
8. Parameter Estimates for Unadjusted Community Outcomes Models Younger Subsample .....	76
9. Parameter Estimates for Unadjusted Community Outcomes Models Older Subsample .....	77
10. Parameter Estimates for Path Models Predicting Community Adjustment by Different Types of Gainful Activity .....	78
11. Model Comparisons of Facility School Experience and Community Outcomes by Juvenile or Adult Facility Type .....	82
12. Model Comparisons of Facility School Experience and Community Outcomes by Sex .....	83
13. Model Comparisons of Facility School Experience and Community Outcomes by Ethnicity .....	84
14. Model Comparisons of Facility School Experience and Community Outcomes by Study Site .....	85
15. Parameter Estimates for Community Outcomes Models Adjusted for Baseline School Experience and Sex with Full Study Sample .....	93
16. Parameter Estimates for Community Outcomes Models Adjusted for Baseline School Experience and Sex with Younger Subsample .....	94
17. Parameter Estimates for Path Models Predicting Community Adjustment by Different Types of Gainful Activity .....	95



## List of Figures

1. Schematic Overview of Steps of Analyses .....	48
2. Measurement Model of School Experience in Facility .....	73
3. Schematic Overview of Unadjusted Models.....	74
4. CFA of School Experience in Community School at Baseline .....	91
5. Schematic Overview of Fully Adjusted Models .....	92

## Abstract

"CATCHING UP AND STAYING OUT OF TROUBLE" SERIOUS JUVENILE  
OFFENDERS' FACILITY SCHOOL EXPERIENCES AND THEIR TRANSITION TO THE  
COMMUNITY

By: LENA JÄGGI, MLaw, M.S.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor  
of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University 2016

Director: Wendy Kliewer, Ph.D., Chair and Professor of Psychology, Department of  
Psychology

Despite recent drops in rates, juvenile incarceration remains a serious issue in the United States (Hockenberry, 2013; Mendel, 2011). One shared part of the incarceration experience across different systems and facility types is the obligation for juvenile offenders to receive correctional education. Ample research demonstrates that increased academic achievement, attending community school, and being employed are connected to better community outcomes and desistance, yet little is known about how school experiences in the facility influences these outcomes. Applying life-course theory of the development of crime (Sampson & Laub, 1997, 2005), the present study investigates whether correctional education serves as a turning point to influence a number of community adjustment outcomes in serious juvenile offenders. Specifically, it tested how subjective (teacher bonding and school orientation) and objective (grades, time spent in the facility school) parts of the school experience during the facility stay were related to transitioning to community schools (attendance), and/or work (gainful activity and employment), self-reported delinquency, and staying in the community at 6 and 12 months after release for a sample of 519 male and 50 female serious juvenile offenders. Results showed

that across juvenile and adult facilities, improved attachment to the facility school while incarcerated predicted increased involvement in gainful activity and decreases in self-reported delinquency up to 12 months after release. This positive effect was greatest for younger offenders who returned to school, even when accounting for the number of previous facility stays and prior community school experiences. Conversely, older offenders who returned to gainful employment showed less positive adjustment. In contrast to other studies, grades received while incarcerated were not a significant predictor of community adjustment. Overall, the results repeatedly show behavioral differences based on individual history and experiences during incarceration across different types of facilities, strongly supporting a research agenda that treats incarceration as more than a binary variable. The present results add to the corpus of evidence that the perspective of the incarcerated juveniles matter and suggest that the school experience while incarcerated can serve as an important turning point, indicating resources should be directed towards enhancing juveniles' school orientation and relationships with teachers.

## Serious juvenile offenders' educational experiences while incarcerated and their transition to the community

Despite recent drops in numbers of incarcerated minors, there were still over 79,000 adolescents held in juvenile facilities in 2010, not including minors held in adult jails and prisons, making the United States the world leader in juvenile detention (Hockenberry, 2013; Mendel, 2011). Despite incarceration being a widely used sentence, the deterrent and rehabilitative effects of incarceration are widely disputed in research (D. S. Abrams, 2010; Cullen, Jonson, & Nagin, 2011; Lipsey & Cullen, 2007). In an overview of different meta-analyses Lipsey and Cullen (2007) concluded that, “*with remarkable consistency,*” rehabilitation treatments show larger and positive effects, while incarceration generally does not alter or increase recidivism rates in adults and juveniles alike. Similarly, in a recent review of longitudinal research on juvenile offenders, Huizinga and Henry (2008) summarized that most studies conducted over the last 35 years and spanning different contexts reported overall non-significant or harmful effects of arrest and juvenile justice system contact on subsequent delinquent behavior and recidivism over the life course, especially for those juveniles who engaged in low levels of violent offending (Ward, Krohn, & Gibson, 2014). Recidivism among juveniles and young adults released from a correctional setting is high, with as many as 55% of juvenile offenders being re-arrested within 12 months (Snyder & Sickmund, 2006). In addition, juvenile offenders usually present with histories of school failure and show significantly lower academic achievement compared to normative peers, setting them on a track of continued economic disadvantage over the life course (Foley, 2001; Kirk & Sampson, 2013). Overall, individuals incarcerated as juveniles are at a high risk of getting embedded into a career of crime (Bernburg & Krohn, 2003; DeLisi, Hochstetler, Jones-Johnson, Caudill, & Marquart, 2011).

However, not all formerly incarcerated juveniles maintain their delinquent behavior; a significant number of even serious juvenile offenders take advantage of a second chance, cease their problem behavior, and return to their communities successfully (Bullis & Yovanoff, 2002, 2006; Chassin, 2008; Mulvey et al., 2004; Mulvey & Schubert, 2012; Todis, Bullis, Waintrup, Schultz, & D'Ambrosio, 2001). One factor contributing to their resilience across race, ethnicity, and sex is educational achievement (Blomberg, Bales, & Piquero, 2012). Yet despite some evidence that overall higher school achievement during commitment is associated with positive community outcomes (Cavendish, 2014), little is known on what promotes better school outcomes while incarcerated and how this is connected to community adjustment.

Research on the effects of incarceration on juveniles traditionally does not include the perspective of the recipients of treatment, that is, the incarcerated juvenile offenders (Schubert, Mulvey, Loughran, & Losoya, 2012). Yet, it can be expected that, just as in other treatment evaluation research, resident perceptions could be important moderators of treatment outcomes, that is, the successful reintegration into the community after release (Harder, Knorth, & Kalverboer, 2013). Inclusion of such a 'client perspective' seems especially warranted given the rehabilitative and treatment orientation which sets the juvenile justice system apart from the adult criminal justice system. Given the fundamental cognitive, behavioral, and maturational changes during adolescence, it is probable that the official intervention (i.e., incarceration) has different effects on juvenile offenders based on their age at transition back into the community, duration and number of facility stays, and previous school experience (Bullis & Yovanoff, 2002; Moffitt, 1993; Mulvey et al., 2004; Ward et al., 2014). Yet little work takes into account such factors and virtually nothing is known about how perceptions of the correctional school interact with these individual differences to influence successful transition back into the community.

Further, the majority of work on the effects of juvenile incarceration has used male samples and comparatively little is known about the experiences of female juvenile offenders.

Given that background, the incarceration experience might serve as a positive turning point for those youth who can take advantage of a setting where they might receive more targeted support, catch up on past educational deficits, and experience themselves as successful students. This could increase motivation and facilitate access to education back in the community and thus provide reconnection to a normative context of development that directs youth away from future offending (Blomberg et al., 2012; Cavendish, 2014). In contrast, the interruption of community school attendance through incarceration, as much research has shown, could sever ties to an important positive context and further delineate trajectories towards more deviance (Hirschfield, 2009; Kirk & Sampson, 2013; Reed & Wexler, 2014), especially if this experience is comprised of non-adequate instruction within the facility that further demoralizes youth and puts them farther behind in school (Ashkar & Kenny, 2008; Clinkinbeard & Zohra, 2012; Gagnon, Barber, Van Loan, & Leone, 2009). Both scenarios described underline the importance of the quality of correctional education for the course of future life trajectories.

In conclusion, investigating how educational achievement and perceptions of the school experience in the correctional facility of both male and female juvenile offenders predict re-integration into the community after release is sorely needed. This research could provide valuable insights not only into the quality of service delivery, but inform practitioners who are striving to promote desistance and lower recidivism rates - which is the core goal of the juvenile justice system.

## Delinquency in Adolescence

One of the most robust findings in criminology is a sharp rise in prevalence of delinquent behavior during adolescence across the entire population of adolescents with well over half reporting some form of involvement in delinquency. This is followed by a relatively rapid decline in the early twenties as most individuals desist from future offending as they mature (Moffitt, 1993; Siennick & Osgood, 2008).

It is often viewed to be the central task of adolescence to establish a sense of identity and find independence (Erikson, 1968). This manifests in part with a normative desire to gain autonomy and experiment with different possible selves. The search for identity can include some temporary experimentation with risky or rule-breaking behaviors, without this being an indicator for propensity to future criminal behavior (Thornberry et al., 2013). On the one hand, adolescents gradually get better at reasoning and self-regulation as their brains mature, and demonstrate adult-like competence in logical reasoning and information processing skills around age 15 or 16 (Albert & Steinberg, 2011; Piaget, 1965). On the other hand, so called *sensation-seeking*, the heightened motivation to seek out novel and exciting experiences, increases dramatically from childhood, reaching its peak in early adolescence before beginning to slowly decline again. At the same time, especially mid-adolescents are overly reactive to immediate reward while showing surprising difficulties to learn from punishment (Arnett, 1999; Cauffman & Steinberg, 2012). Recent research on juvenile decision-making shows that these discrepancies between cognitive ability and lack of behavioral control could be due in part to normative differences in the brain maturation of juveniles (Albert & Steinberg, 2011). These maturation processes also are associated with juveniles' increasing susceptibility to peer influence, coercion, and provocation, as well as a diminished capability to control their impulses, especially

in front of an audience of peers (Cauffman & Steinberg, 2012; Kerr, Stattin, Biesecker, & Ferrer-Wreder, 2003; Thornberry et al., 2013). It is this combination of psychosocial immaturity and malleability of behavior that mitigates adolescents' culpability and warrants their special treatment in the juvenile and not adult criminal justice system (Lambie & Randell, 2013).

In that view, the majority of juvenile offending can thus be interpreted as the product of a "maturity gap" brought on by the discrepancy between the desire to be independent and engage in adult behaviors initiated by sexual and physical maturity, and the delayed onset of social and legal maturity that grants access to it (Moffitt, 1993; Thornberry et al., 2013). Estimates show that across the lifespan, less than 5% of males continuously report involvement with antisocial behavior. Conversely, even among serious juvenile offenders, more than 85% desist offending in their late twenties (Farrington, 2003). The large majority of adolescents, it seems, belongs thus to a group of adolescent-limited offenders who typically start their offending during early adolescence, and are likely to age out of delinquency and desist from offending by the time they reach early adulthood when they take on adult roles of partner, parent, and employee (Moffitt, 1993).

### **A Portrait of (Serious) Juvenile Offenders**

In the United States, the juvenile justice system handles more than 1.6 million delinquency cases annually and cumulative prevalence rates estimate that nationally between 30.2-41.4% of youth have been arrested at least once by age 23 (Brame, Turner, Paternoster, & Bushway, 2012). Despite recent drops in numbers of incarcerated minors, according to the National Census of Youth in Residential Placement, there were still over 79,000 adolescents held in juvenile facilities across the United States in 2010, not including minors held in adult jails and prisons (Hockenberry, 2013). This corresponded to around 225 juveniles held in juvenile



residential facilities per 100,000 juveniles in the general population, making the United States the world leader in juvenile detention (Hockenberry, 2013; Mendel, 2011).

Compared to the general population, youth in the juvenile justice system are a particularly vulnerable and disadvantaged population in many ways. Rates of substance use are extremely high, with dependence and abuse affecting between 40% and 70% of juvenile offenders in custody (Lambie & Randell, 2013; RAND Corporation, 2014). They often come from backgrounds of poverty, family dysfunction, and maltreatment (Aebi et al., 2015; Wildeman et al., 2014); between 70%-95% of detained youth have mental health problems (Greve, 2001; Lambie & Randell, 2013; Potter & Jenson, 2003), they are about 10 times more likely to suffer from psychosis than the general adolescent population (Fazel, Doll, & Långström, 2008), and there is a high prevalence of previous trauma and PTSD (Chen, 2009; Paton, Crouch, & Camic, 2009). The combination of increased background risk-factors and conditions of confinement likely further exacerbate negative mental health outcomes for confined youth. For example, one study found that for over a third of incarcerated youth with depression, the onset of depression occurred after they began their incarceration (Kashani et al., 1980), while another has found that the combination of poor mental health and confinement together increased engagement in suicidal behaviors and self-harm (Mace, Rohde, & Gnau, 1997). Taken together, this could have serious implications, as new research suggests potential recursive cycles of trauma, victimization, and involvement with the criminal justice system over the life course (Hosser, Raddatz, & Windzio, 2007; Jäggi, Mezuk, Watkins, & Jackson, 2016; Li, Chu, Goh, Ng, & Zeng, 2015; Mallett, 2014; Twardosz & Lutzker, 2010). Despite a steady decline of up to 33% in the overall number of juveniles involved with the juvenile justice system since the late 1990's, due to slower declines among that population, the proportion of minority youth in the

system has increased (Hockenberry, 2013). In 2010, 68% of the custody population across the nation were still made up by minority youth, with African American youth accounting for 41% of all offenders in juvenile custody but only accounting for about 15% of the nation's adolescent population (Cauffman & Steinberg, 2012; Hockenberry, 2013).

Over a third of offenders have special education needs, and an estimated 80% of youth within the juvenile justice system enter with histories of truancy, grade retention, expulsion, and other forms of school failure (Cavendish, 2014; Foley, 2001). The majority of adjudicated youth score in the low to average range of intellectual functioning and average between the fifth- to ninth grade on academic functioning; there is ample evidence that a disproportionate number lack basic skills in reading and writing and many are diagnosed with learning disabilities (Katsiyannis, Ryan, Zhang, & Spann, 2008). This amounts to an academic achievement that has been consistently reported as 1 to several years below expected grade levels on reading, math, writing and other core subjects (Foley, 2001; Katsiyannis et al., 2008; Mathur & Schoenfeld, 2010). Numerous studies show that the combination of these issues continue to substantially impair many of those juveniles in their everyday functioning after their release and well into adulthood (D. S. Abrams, 2010; Ryan, Abrams, & Huang, 2014). As a group, offending youth have trouble achieving traditional markers of adult success, particularly in regards to educational achievement and in securing later employment (Hjalmarsson, 2008; Kirk & Sampson, 2013). The low rate of educational achievement, in particular, has significant lifelong implications, because it is strongly linked to later employment and earnings (D. S. Abrams, 2010; Apel & Sweeten, 2010; Tanner, Davies, & O'Grady, 1999).

The juvenile justice system is dominated by male offenders, especially in the residential placement population, where girls only accounted for 13% of offenders in 2010 (Hockenberry,

2013). Despite their comparatively small number, recent years have seen a considerable increase in female juvenile offenders (Hipwell & Loeber, 2006; Lambie & Randell, 2013). While they have been a largely neglected population in service delivery and research, recent research has begun to accumulate evidence showing key differences between boys and girls in the juvenile justice system. In general, incarcerated female offenders tend to be younger than their male counterparts, and tend to have more severe mental health problems (Hockenberry, 2013). Studies have found estimated prevalence rates of 84% for a diagnosis of mental disorders, compared to mental disorders for boys in the same sample estimated at 27% (Timmons-Mitchell et al., 1997). According to a more recent meta-analysis, almost 30% of girls in detention qualified for a diagnosis of major depression compared to 11% of boys, almost 20% presented with ADHD, (12% among boys), and both girls and boys shared similar elevated rates of conduct disorder at 53% of the sample (Fazel et al., 2008). Childhood trauma, sexual abuse, and PTSD is even more elevated among incarcerated girls compared to boys (Cauffman, Feldman, Watherman, & Steiner, 1998), with some studies finding prevalence rates of physical and sexual abuse at up to 70% and lifetime PTSD for up to 65% of incarcerated females (Wood, Foy, Goguen, Pynoos, & James, 2002). Those psychiatric disorders are associated with worse outcomes for females following release, including increased recidivism, suicidality, hospitalization, use of psychiatric services, and substance use problems. Additionally, girls in the juvenile justice system experience higher levels of sexual and physical health problems (Lambie & Randell, 2013).

Despite growing evidence for a female-specific phenotype, developmental course, and set of risk factors, interventions that have been developed for the behavior problems of boys are frequently applied to girls (Hipwell & Loeber, 2006). For example, studies have suggested that girls' gang involvement is more related to structural neighborhood disadvantage than boys'

(Wood et al., 2002). Any evidence of the effectiveness of treatments for girls with disruptive and delinquent behaviors is extremely limited, with most studies not including sufficient numbers of females to report on treatment effects by sex (Hipwell & Loeber, 2006). However, there is some evidence that the type of individualized aftercare that is showing promise for boys is also showing similar beneficial results for girls (James, Stams, Asscher, De Roo, & Van Der Laan, 2013; Leve, Chamberlain, & Reid, 2005). There is a dearth of data on the issue, but their comparatively small population may put mentally troubled females at an increased risk for referrals to residential placements versus diversion, due to limited availabilities of specialized treatment programs and community resources on the local level, especially in small localities.

Overall juvenile offenders are a group of youth that, compared to other vulnerable groups, show especially poor adjustment outcomes as young adults, precisely during the years when most people gain the education and level of training that serve as the foundation of their achievements in the future (Cauffman & Steinberg, 2012). High rates of recidivism and ongoing mental health problems paint a picture of youth on a downward spiral whose treatment needs are not met by the system that is supposed to rehabilitate them (Lambie & Randell, 2013).

### **Cumulative Disadvantage and Life Course Development of Crime**

In contrast to the theories of normative adolescent development and data stemming from the general adolescent population, the above portrait of youth in the juvenile justice system does not show a population of youth who just experiment and then easily age out of their problem behavior; it shows a population who is marked by an accumulation of multiple layers of disadvantage (Sampson & Laub, 1997). Building on ideas from labeling theory, Sampson and Laub's (1997) developmental theory of structural disadvantage and the life course development of crime describes how official intervention paves the way to higher probability of involvement

in subsequent delinquency and deviance because it triggers exclusionary processes that have negative consequences for conventional opportunities in education, employment, and social relationships (Bernburg & Krohn, 2003). Especially serious sanctions are seen to cut (juvenile) offenders off from future options for social interdependence, such as a stable employment, and compromise their relationships with family, friends, and romantic partners. Furthermore, because labeling and stigma operate differently across groups, these effects interact with race, structural location, and sex – which explains why this effect gets magnified in contexts of already disadvantaged urban poor minorities (Blomberg et al., 2012; Kirk & Sampson, 2013; Sampson & Laub, 1997).

In this view, general age-graded changes in social bonds over adolescence in combination with individual changes in social bonds explain crime, regardless of prior differences in propensity to offend. This is in contrast to taxonomic or static theories of crime (e.g. Moffitt, 1993) who emphasize the existence of different offender groups by disposition. While research repeatedly has supported the heterogeneity of offenders as a group, evidence from studies on desistance show an impressive amount of plasticity in trajectories of offending (Mulvey et al., 2004; Tanner et al., 1999). Even among serious juvenile offenders, there is a lack of predictability of future trajectories solely based on histories of offending (Mulvey & Schubert, 2012). Consequently, it seems that an emphasis on dynamic change in trajectories through so called life turning points or events that can redirect criminal trajectories in either a more positive (strengthening social bonds) or more negative manner (further alienating individuals from mainstream society) at any point in life (Sampson & Laub, 2005), is a promising avenue to both explain and predict trajectories of offending.

## **Effects of Arrest and Incarceration on Subsequent Behavior**

A recent review of longitudinal research on the effects of arrest and incarceration supports the labeling and negative turning point hypothesis: Huizinga and Henry (2008) summarized that most studies conducted over the last 35 years and spanning different contexts reported overall non-significant or harmful effects of arrest and incarceration on subsequent delinquent behavior and recidivism over the life course. While they are few in number there are some studies that found that imposing detention decreased future offending of adolescents (e.g. Hjalmarsson, 2009). However, it is important to note that even among those studies, there were mostly no differences in recidivism among different sanctions running from probation and fines to incarceration (Huizinga & Henry, 2008). Confirming these results, a meta-analysis on diversion versus formal juvenile justice processing for first offenders found that formal processing had no or harmful effects (Petrosino, Turpin-Petrosino, & Guckenburg, 2013). Generally, adolescents who were detained were more likely to get formally charged and sentenced, and adolescents charged with offenses were more likely to be re-convicted compared to peers who reported the same delinquent behaviors but who got diverted from incarceration (Holman & Ziedenberg, 2006). For example, data from the Rochester Youth Developmental Study, a long-term longitudinal study, showed that for males arrest and juvenile justice intervention was positively associated with their involvement in crime in early adulthood, even when controlling for race, family poverty, and educational attainment (Bernburg & Krohn, 2003). Using a propensity score matching strategy in the same data, Ward, Krohn, and Gibson (2014) found that experiencing police contact increased the likelihood of future violent offending, especially for those who were on a low-violent-offending trajectory. This evidence also is supported by international studies: in a sample from Edinburgh, Scotland, for example,

McAra and McVie (2007) found no significant difference in frequency or prevalence of offending in the year following a “police decision to charge” (equivalent to an arrest in the U.S.) and showed that the deeper juveniles penetrated the formal system, the less likely they were to desist from offending.

Additionally, compared to first-time offenders, convicted juvenile offenders were more likely to have charges pressed against them for the same offenses in the future, were even more likely to be held in pre-trial detention even for non-violent crime (Holman & Ziedenberg, 2006), and were finally more likely to subsequently be convicted (Rodriguez, 2010) and to experience harsher sentences (Henretta, Frazier, & Bishop, 1986), a mechanism that is even more exacerbated for minority and lower class youth (Bernburg & Krohn, 2003; Huizinga & Henry, 2008; Rodriguez, 2010, 2013). Minority (especially African American) youth continue to be overrepresented at most stages of the juvenile justice system (Snyder & Sickmund, 2006). Research suggests that this disparity is even more pronounced at the beginning stage of involvement with the juvenile justice process (i.e., arrest), and that the effects of ethnic and racial differences accumulate as youth are processed through the system (Holman & Ziedenberg, 2006; Rodriguez, 2010, 2013; Snyder & Sickmund, 2006). This finding is likely influenced by selective targeting of minority individuals and certain neighborhoods by law enforcement, further elevating the likelihood of detection for even minor transgressions (e.g., vandalism, loitering, minor traffic offenses), which might go unnoticed and uncharged in places with less police presence (Fagan & Davies, 2000; Jernigan, 2000; Parker, Lane, & Alpert, 2010; Sherman, 1990).

**Incarceration of juveniles in adult prisons.** Law reforms across most states in the 1990s lowered the minimum age for juveniles to be eligible for transfer to criminal courts where

they would be tried as adults and receive adult sentences (Redding, 2008). In some states those age limits were dropped to as early as 11 years (Redding, 2003). Incarceration of juveniles in adult facilities unfortunately continues despite a sizable body of research documenting the comparatively more negative effect of incarceration of juveniles who were committed as adults and incarcerated in adult prisons (Lambie & Randell, 2013; Redding, 2003, 2008). In 2009 for example, over 7,000 jail inmates across the United States were minors (Minton, 2010). Juveniles incarcerated in adult facilities face more challenges than their counterparts in juvenile facilities: In addition to challenges discussed above, (1) in the harsher environment of prison juveniles are at greater risk for victimization by other inmates, (2) for their protection they are thus more likely to be held in solitary confinement, (3) the potential for longer punishment increases developmental costs, (4) the peer group consists of adults modeling more severe criminal behavior, and (5) adult facilities offer generally lower levels of services compared to juvenile facilities where more emphasis is put on education and rehabilitation (Lambie & Randell, 2013; Redding, 2008). Controlling for offense severity, several studies have further shown higher rates of recidivism in youth transferred to the adult system compared to youth who stayed in the juvenile system (Jordan & Myers, 2011; Lambie & Randell, 2013; Redding, 2008).

### **Collateral Effects of Arrest and Incarceration**

An overwhelming number of studies with juvenile offenders document that the negative outcomes associated with arrest and incarceration are not limited to an increased risk for criminal recidivism and adult incarceration. On the contrary, the enduring negative effects of system contact encompass reduced achievement in all domains of functioning, including social, educational, employment, and health outcomes. For example, in a study of seven-year outcomes of juvenile offenders in Los Angeles, Ramchand and colleagues (2009) found that a substantial



number had died, mostly from gunshot wounds, about a third of respondents reported substance dependence and recent drug use, while only about half had completed school, and not many more had been working in the previous year.

**Reduced educational attainment.** Labeling and cumulative disadvantage mechanisms also explain a part of the reduced educational achievement of juvenile offenders. It is likely that involvement in the juvenile justice system socializes students into the role of being a criminal and they might then differentially be subject to the zero tolerance disciplinary policies, making them more likely to be excluded from school and cutting them off from future opportunities to experience the normative contexts of development (DeLisi et al., 2011; Kirk & Sampson, 2013). There is widely documented empirical support for this hypothesis. Studies investigating the effects of arrest have shown over and over that even a comparatively mild system contact has detrimental disruptive effects on later achievement and functioning beyond recidivism: In the Rochester Youth Development Study sample, arrest and juvenile justice intervention reduced the chance of high school graduation and employment, an effect that remained even when controlling for educational attainment. Again, this effect was more pronounced for impoverished families and African Americans (Bernburg & Krohn, 2003; Bernburg, Krohn, & Rivera, 2006). A study with the nationally representative sample of the National Longitudinal Survey of Youth 1997 (NLSY 1997) showed that court involvement during high school increased chances of drop-out independent of involvement in delinquency, especially for less delinquent youth (Sweeten, 2006), a finding that has been common across a vast number of recent longitudinal studies examining the issue (De Li, 1999; Huizinga & Henry, 2008; Tanner et al., 1999). Similarly, a recent report from the National Bureau of Economic Research (NBER) using estimates collected over 10 years from over 35,000 randomized cases showed that incarceration

versus diversion of juveniles results in large decreases in the likelihood of high school completion as well as large increases in the likelihood of adult incarceration (Aizer & Doyle, 2013). Finally, another study with a representative community sample by Kirk and Sampson (Kirk & Sampson, 2013) showed that among adolescents with equivalent neighborhood, school, family, peer, and individual characteristics as well as similar frequency of criminal offending, having a criminal record was associated with a substantively large and robust impact on dropping out of high school and a gap in four-year college enrollment. Supplemental analyses supported that these effects were due to institutional responses that lead to disrupted academic trajectories, and not due to individual characteristics of the adolescents. Even though there is less data, it seems likely that this process has been exacerbated in recent years with increased public access to official records, and systematic exclusion of felons from employment opportunities as part of standard business practice of an increasing number of employers spanning the government and private sector (Mauer & Chesney-Lind, 2002). Additionally, felons increasingly are excluded from public assistance such as social welfare, public housing, or scholarships for higher education (Manza & Uggen, 2004). While most juvenile offenders still get the privilege of confidential records, increased processing as adults has made them suffer the same labeling and practical consequences as felons as their adult counterparts. Simultaneously, more police presence in schools has led to increased involvement of police in school behavioral problems, increasing chances of more severe and prolonged system contact for all juveniles (Beger, 2002).

**Psychosocial consequences of incarceration during adolescence.** Labeling and cumulative disadvantage do not account for all negative effects of incarceration. Several studies have found a positive connection between prior convictions and self-reported delinquent behavior even when controlling for system labeling effects (De Li, 1999). Ample research shows

that getting involved with the justice system as a juvenile has more severe derailing effects compared to getting involved as an adult. One explanation for this is that because of its timing, the experience interacts with several crucial developmental processes (Cauffman & Steinberg, 2012; Kirk & Sampson, 2013; Sampson & Laub, 2005).

Among the major tasks of adolescence are identity formation and achieving social autonomy, both of which are related to the increasing development of psychosocial maturity over that time (Albert & Steinberg, 2011; Arnett, 1999; Kohlberg, 1963). While there exists substantial variability in level and speed, this development is on average marked by steady improvements in temperance (ability to control aggressive and impulsive behavior), perspective taking, and responsibility over the course of adolescence and early adulthood (Albert & Steinberg, 2011; Dmitrieva, Monahan, Cauffman, & Steinberg, 2012). In Western societies, during later adolescence it is expected to meet the responsibilities of young adulthood, such as gaining self-determination and a sense of personal mastery, engaging in healthy relationships with pro-social friends, and forging stable romantic partnerships (Cauffman & Steinberg, 2012; Steinberg, Chung, & Little, 2004; Steinberg & Scott, 2003).

Around 40% of the juveniles in custody are being held in large, prison-like secure correctional facilities (Mendel, 2011). Especially for them, adolescent incarceration means that they have to reach those milestones in an extreme and adverse environment (Dmitrieva et al., 2012): (1) They are separated from their parents when well-being and coping skills are still heavily influenced by family (Baumrind, 1991); (2) It places them in an environment where the only peer group available is composed of other anti-social youth at a time when peer relationships are becoming increasingly important (Leve & Chamberlain, 2005);(3) The highly structured and punitive environment restricts autonomy and inhibits opportunities to develop

responsibility (Lambie & Randell, 2013); and (4) It excludes youth from social interactions with the other sex at a time when romantic relationship skills are formed. Overall, correctional institutions provide environments in which strategies that are adaptive for successful social functioning “on the outside,” are maladaptive, and vice-versa (Dmitrieva et al., 2012). For example, incarcerated individuals in a traditional punitive setting do well if they obey orders and do not question even unfair and arbitrarily enforced rules. One study with an American sample showed that those incarcerated adolescents who quickly learned to cope with high detachment and low emotional expression had lower anxiety and depression scores and were thus adjusting better to imprisonment (Brown & Ireland, 2006). Additionally, it has been shown that juvenile delinquents possess weaker identities across both ideological and interpersonal domains (Klimstra et al., 2011).

In qualitative studies, juvenile residents repeatedly talk about being discouraged from expressing concerns or seeking social support, and often report negative experiences of fear and humiliation, a culture of bullying, sense of loss resulting from separation with loved ones, and being frustrated by lack of autonomy, and petty rules and procedures (Ashkar & Kenny, 2008; Clinkinbeard & Zohra, 2012; Lane, Lanza-Kaduce, Frazier, & Bishop, 2002). While such negative perceptions of their environment are connected to more negative adjustment within the institution, a series of quantitative Dutch studies showed that conversely, a therapeutic living group climate and positive relationships with staff helped institutionalized juveniles to develop more cognitive empathy, more active coping, and a higher internal locus of control, which can all be seen as indicators of healthy psychosocial development (Eltink, van der Helm, Wissink, & Stams, 2015; van der Helm, Beunk, Stams, & van der Laan, 2014; van der Helm, Stams, van der Stel, van Langen, & Van Der Laan, 2012). Similarly, a recent longitudinal study of serious

juvenile offenders (Dmitrieva et al., 2012) showed short-term stunted growth in psychosocial maturity among individuals incarcerated in a secure facility, with more negative effects for older adolescents. A stay in residential treatment facilities on the other hand bolstered the development of maturity in the short term, but had comparatively more detrimental effects as total time spent in the setting increased (in contrast to total time spent in a secure facility, which had no added negative effects on maturation).

In summary, there is emerging evidence supporting the idea that incarceration, especially in adult prison-like environments, negatively interacts with normative psychosocial development of adolescents and emerging adults. The field stands at the beginning of exploring such mechanisms and there is currently no data on the development of psychosocial maturity of incarcerated female offenders.

**Association with deviant peers.** It is well documented in the literature that youth who socialize with peers who engage in delinquent behavior are at an increased risk for delinquency and substance use-related activities (Kerr et al., 2003; Salzinger, Feldman, Rosario, & Ng-Mak, 2011); The peer group plays a fundamental role in orienting adolescent behavior and ample investigations have demonstrated that juvenile delinquency is above all a group phenomenon (Gatti, Tremblay, & Vitaro, 2009).

However, an inherent feature of placing juveniles in residential facilities is the aggregation of deviant adolescents in one place, with the (unintended) consequence that they are the only peer group available for one another (Leve & Chamberlain, 2005). Any intervention that places adolescents within a deviant group therefore risks exacerbating those negative behaviors, and there is accumulating research suggesting that in fact interventions which aggregate at-risk peers together produce less positive or even more negative effects compared to interventions that

focus on one-on-one treatment (Farrington & Welsh, 2005; Gatti et al., 2009; Lipsey, 2009). Researchers have for this reason especially cautioned against incarceration of juveniles in adult facilities: Getting in contact and being socialized by “hardened criminals” is thought to explain a substantial portion of the comparatively more negative outcomes for those juveniles (Lambie & Randell, 2013). Labeling and structural disadvantage theory posits that on top of such mechanisms on the inside of facilities, cutting off ties with conventional institutions pushes juveniles further to the margins of society, where they instead get socialized by the informal subcultures of dangerous neighborhoods (Blomberg et al., 2012; Sampson & Laub, 2005). Confirming this hypothesis, in one of the few examples that tested structural disadvantage theory, a longitudinal study on male offenders from the Rochester male study, found that juvenile justice intervention positively affected subsequent involvement in serious delinquency because it increases subsequent involvement in deviant social groups, namely, street gangs and delinquent peers (Bernburg et al., 2006). This is a concerning finding, given that research on such subcultures, like the “code of the street” literature, shows how especially young African American males are at increased risk to become enmeshed in this codex of self-justice, retaliation and respect, and how that puts them at increased risk for injury, death, and continued involvement with the criminal justice system (Oliver, 2006; Rich & Grey, 2005; Stewart, Schreck, & Simons, 2006). Furthermore, given that a study with an adult sample showed only a small true criminogenic effect of incarceration (Bhati & Piquero, 2007), this also emphasizes once more the special vulnerability of juvenile delinquents.

In summary, overall extant research strongly shows that the negative consequences associated with system contact and incarceration in particular are manifold and severely impact academic, economic and other outcomes for juvenile offenders exiting both the adult criminal

and the juvenile justice system. While offering valuable first insights into effects of facility stay on the development of psychological maturity, Steinberg and colleagues' work on the development of psychosocial maturity (Cauffman & Steinberg, 2012; Chassin et al., 2010; Dmitrieva et al., 2012) while theoretically advanced, unfortunately still stands alone and there is not much known on the psychological effects of incarceration (Greve, 2001). While these results support the idea that delays in psychosocial maturation play an important role in the cumulative negative effects of juvenile incarceration and institutionalization in general, the study was limited to a special sample of serious male offenders in only two localities. The field stands at the beginning of exploring these mechanisms and more data on the nature of the experience across different facilities (institutional climate, availability of counseling, mental health treatment, vocational and other transitional services) and on interactions of type and duration of the experience with age and personal maturity level across different samples are needed. There is currently no data on the development of psychosocial maturity of incarcerated female offenders.

However, not all individuals caught up in the sanctioning system show persistent negative outcomes, and there are some institutional and individual factors that repeatedly have been associated with lower negative or even positive outcomes for juvenile offenders.

### **The Role of Education in Reducing Delinquency of Juvenile Offenders**

Overall and in accordance with the predictions of cumulative disadvantage and life-course turning point perspectives (Sampson & Laub, 2005), there is mounting evidence that in order to decrease re-offending and promote positive maturational processes it is important to ensure ways back into positive developmental contexts, such as positive family relationships, school, and employment (Bullis & Yovanoff, 2002; James et al., 2013; Todis et al., 2001). Most offenders however return to the same environment from which they came, including the same

factors that lead to delinquency in the first place. Mainly, the majority of arrested and incarcerated youths return to environments with limited opportunities for pro-social involvement and limited access to positive normative environments (L. S. Abrams, 2006a; L. S. Abrams & Freisthler, 2010; Huizinga & Henry, 2008). However, one positive developmental context that could be available is education.

It is well documented that educational achievement, school attendance, and school bonding have a protective effect against delinquent behaviors across sex and race for the general population of adolescents (Cook & Hirschfield, 2008; Hirschfield & Gasper, 2011). In a longitudinal study among a Canadian community sample, LeBlanc and colleagues (LeBlanc, Vallières, & McDuff, 1993) showed that school performance in early adolescence was directly related to self-reported and official adult offending. An analysis by Cernkovich and Giordano (1992) showed that the positive association between school bonding and reduced delinquency was robust across different racial compositions of schools. Additionally, simply having to be in school has a protective incapacitating effect on adolescents' delinquent behavior: Increasing the legal minimum dropout age had a significant and negative effect on property and violent crime arrest rates among those juveniles affected by the change in a U.S. county (Anderson, 2014) and in England and Wales (Machin, Marie, & Vujić, 2011). Even negative effects of juvenile justice processing seem to be diminished for individuals who still managed to complete high school (Bernburg & Krohn, 2003). Furthermore, in the general population, every additional year spent in school as adolescents lowers the likelihood of future incarceration as adults (Lochner & Moretti, 2004). Similarly, a recent seven-wave study using the representative National Youth Survey showed that college attendance and investment in higher education are negatively associated with criminal offending in adulthood, especially for individuals who were more



delinquent during adolescence (Ford & Schroeder, 2010). Given these findings, it is thus not surprising that the Office of Juvenile Justice and Delinquency Prevention, in conjunction with the U.S. Department of Education, regards education as the most important part of the rehabilitation process (Wexler, Pyle, Flower, Williams, & Cole, 2014). In summary, research findings support the idea that the educational experience while incarcerated might serve as a turning point that directs juveniles away from future offending, if residents get a chance to catch up on their educational achievement (Blomberg et al., 2012). Furthermore, access to education inside correctional facilities seems to facilitate access to education in the community, which facilitates access to other normative contexts of development, such as employment opportunities or college. Conversely however, interruption of community school attendance through incarceration, combined with non-adequate instruction within the facility that frustrates youth and puts them farther behind in school could sever ties to an important positive context and further delineate trajectories towards more deviance (Hirschfield, 2009; Kirk & Sampson, 2013; Reed & Wexler, 2014). Both scenarios underline the importance of the quality of correctional education for the course of future life trajectories.

**Correctional education programs.** Educational programs for adult offenders are thought to be one of the most important interventions to prevent recidivism, an effect that is further increased for participants with higher educational commitment (RAND Corporation, 2014). In contrast to adult offenders for whom it is a privilege, juvenile offenders have the same right to public education as all adolescents. All interventions for incarcerated youths must include a schooling component that meets the same standards as normal public schooling, including the right to special education services for youth with disabilities and standardized testing (Foley, 2001; Leone & Cutting, 2004; RAND Corporation, 2014). For juveniles, research

and evaluation questions are thus not centered on investigating the benefits to providing correctional educational services, but on which programs are most effective in lowering young offenders' risk of future crime and in increasing their chances to participate in the legitimate economy in the future, given the context of this special population and the restrictions of a correctional setting. In other words, correctional facilities housing juveniles have to provide a complete alternative educational system to serve a highly transient population of students who bring a widely varied set of emotional and educational needs with them (Foley, 2001; Mathur & Schoenfeld, 2010; RAND Corporation, 2014).

Typically, correctional education programs use an individualized approach of instruction to teach both delinquents with and without disabilities (Foley & Gao, 2002). A recent national survey of a random sample of 131 principals from juvenile correctional schools showed that approximately 80% of schools were accredited by their State Department of Education and around 66% used a normal state or local education agency curriculum (Gagnon et al., 2009). Traditionally, the correctional education includes development of vocational skills, but in this survey schools reported their primary focus as helping youth to obtain a high school diploma or preparing students for the General Educational Development (GED) test (Foley & Gao, 2002; Gagnon et al., 2009).

Prior to entering the judicial system, many juvenile offenders accumulate negative school experiences that include truancy, dropping out, suspension, expulsion, and other forms of academic failure (Foley, 2001; Mathur & Schoenfeld, 2010). Specifically, comparatively high numbers of illiteracy and low reading competency are an important problem (Foley, 2001; Rogers-Adkinson, Melloy, Stuart, Fletcher, & Rinaldi, 2008). Additionally, there are much higher numbers of students with special needs compared to the general population (Foley, 2001;

Leone & Cutting, 2004). Taken together, this profile documents unique educational needs of incarcerated juveniles and highlights the need for specially adapted programs if they are to keep up with normal educational standards (Katsiyannis et al., 2008). Despite 33 class action lawsuits and US Department of Justice investigations in 24 states over the last 25 years, the provision of appropriate special and general education services to incarcerated youths remains a problem (Leone & Cutting, 2004). The empirical knowledge base investigating effective instructional practice for correctional education programs is largely missing and there is a lack of theory-supported academic interventions (Krezmien & Mulcahy, 2008; Mathur & Schoenfeld, 2010). Knowledge on the effects of such interventions on juvenile's future academic achievement back in the community or on delinquency is even scarcer and randomized trials are virtually absent (Katsiyannis et al., 2008; Mathur & Schoenfeld, 2010; RAND Corporation, 2014; Sander, Patall, Amoscato, Fisher, & Funk, 2012; Wexler et al., 2014).

Most juvenile offenders enter the system with substantial gaps in their academic records, histories of school failure and notoriously low levels of school engagement (Foley, 2001; Gagnon et al., 2009; Rogers-Adkinson et al., 2008). Youth in correctional facilities thus share many traits with other youth with special needs and emotional or behavioral disorders, and it seems reasonable that the knowledge on effective instructional strategies for these students are somewhat applicable to them (Foley, 2001; Katsiyannis et al., 2008; Mathur & Schoenfeld, 2010; Wexler et al., 2014). However, in contrast to regular community schools, the populations of juvenile correctional schools change constantly as adjudicated youth move through facilities. On average, students attend juvenile correctional schools only between 9 months to a year (Gagnon et al., 2009). In addition to the high mobility, student placement in instructional groups often is determined by living unit instead of instructional need, and historically there is an

emphasis on controlling behavior rather than on instruction. Therefore, much of the instruction in juvenile correctional facilities is self-paced with students working independently in their content area and consists of elective classes with minimal targeted instruction, feedback, and opportunities to practice and respond (Mathur & Schoenfeld, 2010; Reed & Wexler, 2014; Wexler et al., 2014). While those practices correspond to the reality of a changing and diverse student body, research on group-size in the general school setting calls into question the usefulness of the one-on-one self-paced approach typically used in the correctional setting (Wexler et al., 2014).

Despite the paucity of existing research on which instructional practices work best in secure residential contexts, ample research documents that the educational experience while incarcerated can serve as a turning point that promotes desistance (Blomberg, Bales, Mann, Piquero, & Berk, 2011; Lochner & Moretti, 2004; Tanner et al., 1999). Repeatedly, completion of high school or vocational training while incarcerated is associated with lower recidivism and greater employment rates (Foley, 2001; Leone & Cutting, 2004). Namely in two studies from Florida, higher academic achievement during commitment was associated with a higher likelihood of enrolling back in school, even among youth with learning disabilities (Blomberg et al., 2011, 2012; Cavendish, 2014). Blomberg and colleagues (2011) examined 4,147 delinquent youth released from Florida state correctional institutions, matched using propensity score analysis to compare high- and low-achieving youths during incarceration. The authors found that incarcerated youths with higher levels of educational achievement were more likely to return to a community school, and of those who returned, the students attending school regularly were less likely to be rearrested within 12 and 24 months. Moreover, comparisons with all youths who were rearrested showed that those youth who attended school regularly following release were

arrested for significantly less serious offenses. Further analyses showed that those relationships held across sex and ethnicity, but that the connection between level of achievement and returning to school was especially strong for African American males (Blomberg et al., 2012).

Additionally, more time spent in school repeatedly has been associated with lower rates of delinquency both in the general population of adolescents (Anderson, 2014; Hirschfield & Gasper, 2011) and among juvenile offenders (Blomberg et al., 2012).

Further evidence for the academic resiliency of juvenile offenders comes from results showing a positive relationship between time spent in a facility and grades (Chung, Mulvey, & Steinberg, 2011). One explanation for this is that young offenders show better academic outcomes in residential settings because they are schooled regularly and attend classes in more closely supervised and smaller environments. In such a fashion, students who might otherwise struggle in community schools are able to take advantage of the structured educational opportunities. Though they might not always share this perception, for those youth their residential stay may provide access to important educational and occupational opportunities that are not readily available in their communities (Chung et al., 2011).

A large body of research shows that high occupational expectations are related to academic success, and emphasizes the important that role of expectancies and achievement motivation in shaping a sense of personal efficacy about academic work which leads to better performance (Chung et al., 2011). As a group, young offenders show decreased levels of educational and occupational aspirations and expectations which may help to explain their academic deficits. In accordance with this view, young offenders' expectations to succeed have been positively linked to future school functioning and also help to explain neighborhood-level effects on grades (Chung et al., 2011; Chung & Steinberg, 2006). Furthermore, a motivation to

pursue education and the successful connection back to school repeatedly appears in both quantitative and qualitative studies as a factor explaining the resiliency of successful ex-offenders released from the juvenile justice system, even in the absence of special programs (Bullis & Yovanoff, 2002; Todis et al., 2001). Despite such illustrative findings, comparatively little is known about ways to sustainably increase academic achievement of juvenile offenders while they are incarcerated and thus encourage re-enrollment in community schools. Findings from public schools indicate that increasing student engagement through active responding and providing opportunities to respond are key factors in encouraging better academic achievement (Gagnon et al., 2009; Mathur & Schoenfeld, 2010). Yet, not much is known on the effects of student engagement or chances to develop it in the correctional setting and the connection to re-enrollment and academic achievement in the community.

In conclusion, much has been written about the low achievement rates for juvenile offenders and the protective effects of educational achievement for offenders returning to the community. However, there is a paucity of theory driven studies or systematic testing of empirically based strategies on how to remediate the problem and increase academic success for offenders. There is an absence of a comprehensive theory and major gaps in the current literature remain relating to questions of processes, such as how school failure relates to delinquency, why students perceive schools as negative, or what a good educational experience in a correctional setting should look like.

**Work placement and reentry of emerging adults.** A substantial percentage of juvenile offenders who return to the community are in their late teens to early twenties, finding themselves at the transition from late adolescence into emerging adulthood. In other words, they are expected to successfully navigate from the dependency of adolescence to the self-sufficiency

of adulthood, which is a process that requires the coordination of many skills (Steinberg et al., 2004). Those offenders are likely to find themselves in situations where they are expected to become financially independent, live alone, and enter the workforce rather than going back to school.

It is well established that among adult offenders, corrections-based educational and vocational programs improve recidivism outcomes. For example, while cautioning that many existing evaluations suffer deficiencies in methodology, a meta-analysis of 33 evaluations concluded that corrections-based educational and vocational programs for adults improve the likelihood of post-release employment and subsequently lower recidivism (D. B. Wilson, Gallagher, & MacKenzie, 2000). In contrast, the research on employment interventions among juvenile offenders has not shown such promising results (Apel & Sweeten, 2010; Bullis & Yovanoff, 2006; Uggen, 2000). For example, in one of the few studies examining age differences in employment outcomes for returning offenders, Uggen (2000) found that age interacted with employment to affect the rate of self-reported recidivism. Specifically, it seemed that working in marginal employment opportunities was protective against re-offending only for offenders that were older than 27 years, while working had only little effect on crime for the participants in their late teens and early twenties. Similarly, a study with returned teenage offenders from Oregon showed only a marginally significant effect of employment on reduced recidivism (Bullis & Yovanoff, 2006). Moreover, the study also found that less than 30% of the sample was employed 12 months after release, and only 23% were currently looking for a job. A recent study using the National Longitudinal Survey of Youth 1997 (NLSY, 1997) to estimate the impact of incarceration during late adolescence and early adulthood on short- and long-term employment outcomes confirmed the lower rates of employment among previously incarcerated youth (Apel

& Sweeten, 2010). These results were particularly compelling, because other than the majority of the field, the study did not compare ex-inmates to a normative sample of individuals who were not at risk for incarceration, but compared first-time convicted respondents who did not receive a sentence of incarceration following their conviction to those who did. Results showed that rather than simply failing to find work after release, ex-inmates were less likely to participate in the labor force. In other words, they were more reluctant to take positive steps to find work rather than being refused employment. These findings are troubling, especially insofar as they show how through facilitating prolonged non-participation in the workforce, juvenile incarceration has the capacity to serve as a catalyst that puts emerging adults at a serious risk of permanent detachment from the world of legal work.

### **Limitations of Existing Research**

Sampson and Laub's (1997, 2005) model of cumulative disadvantage and the life-course development of crime has received overwhelming theoretical and growing empirical support (Lambie & Randell, 2013). Applying this model offers a sound guideline to understand juvenile offending in context and highlights several areas that remain gravely understudied. Mainly, in such a perspective incarceration has to be framed as a context of development. In other words, incarceration becomes an extreme social environment which as such powerfully interacts with individual development. Similarly, juvenile offenders come from and return to social environments such as school or work, which in turn provide different types of opportunities to connect back to a normative context of development. However, in the majority of existing research incarceration is still treated as a binary variable, and there is a dearth of prospective examinations that take into account how even basic objective measures such as length and timing of incarceration interact with trajectories of desistance (cf. Chung et al., 2011; De Li, 1999;



Dmitrieva et al., 2012). Fewer studies yet explore how different aspects of the confinement experience impact social development, cognition, behavior, or mental health (cf. Eltink et al., 2015), and how that impacts adjustment upon return to the community (cf. Boxer, Middlemass, & Delorenzo, 2009; Dierkhising, Lane, & Natsuaki, 2014). Building upon a developmental turning-point framework, the present study thus advances the field in several important ways.

**Developmental perspective of incarceration and reentry.** Adolescents and emerging adults undergo several important developmental changes that are marked by large differences in cognition, behavior, maturity, and emotional competence throughout the teenage years and early twenties (Albert & Steinberg, 2011; Casey, Jones, & Somerville, 2011). It seems thus reasonable to assume that both chronological age and developmental stage of the returning juvenile offenders likely interact with their need for reentry assistance and their chances of success (Altschuler & Brash, 2004; Steinberg et al., 2004). For example, returning into an unstable family environment might constitute more of a challenge for early adolescents who are still very influenced by their parents, while mid-adolescents might mainly be struggling to fit in with their peer group and are more vulnerable to negative influences in that area (Kerr et al., 2003). In contrast, limited work opportunities might pose the most important challenge for an early adult trying to establish the independence normative for this stage (Altschuler & Brash, 2004; Arditti & Parkman, 2011). Despite these obvious differences, little systematic research has taken age of the returning juvenile offenders into account when investigating reentry outcomes. Moreover, it has been established that juvenile offenders returning to the community are often functionally impaired and face the immense dual challenge of reentry and compensation for delayed psychosocial development at the same time (Abram, Choe, Washburn, Romero, & Teplin, 2009; Altschuler & Brash, 2004). One reason for this developmental lag is that incarceration disrupts

juvenile offenders' routine life with the result that they are not afforded the opportunity to prepare adequately for the role transition between adolescence and adulthood (Dmitrieva et al., 2012; Steinberg et al., 2004) and are hindered in their development of a healthy sense of competence and orientation towards the future (Moffitt, 1993; Thornberry et al., 2013). On the other hand, delinquent behavior in itself can be thought of as an indicator of psychosocial immaturity, especially among older adolescents (Erikson, 1968; Moffitt, 1993; Thornberry et al., 2013), suggesting an additive process of deficits in psychosocial maturity. Whatever the explanation, in practical terms this means that the normative correspondence of chronological age and developmental stage has been disrupted, and what for example, signifies "normal" developmental mastery for someone in middle adolescence may not be applicable to a returning juvenile offender within this age range (Altschuler & Brash, 2004).

Given the many transitions in this stage, similar to changing risk factors, positive social roles and good community adjustment can refer to quite different scenarios in a sample of adolescents: For example, older adolescents might have legally dropped out of school and might be working full time, while especially younger adolescents are likely not working but should be attending school. Since neither school nor work information alone would sufficiently reflect successful transition back into the community, the present study and other studies with a developmental perspective on reentry success have consolidated school attendance and employment into one construct of gainful activity (Mulvey, 2013; Schubert et al., 2012). However, returning to a school versus work environment might mean different things based on chronological age of the returning offenders. For example, while engagement in employment is a desired outcome for emerging adults, some studies in the general population found that early employment during adolescence can have negative influences (Mortimer & Staff, 2004;

Steinberg, Fegley, & Dornbusch, 1993). Researchers have found that high work intensity (more than 20 hours per week), especially in a poor-quality work experience typical for low-skill jobs, while youth are attending school can have negative effects on behavioral and emotional outcomes (Mortimer & Staff, 2004). While in large part due to a selection effect, earlier work in adolescence has even been correlated with more juvenile delinquency (Ploeger, 1997). In contrast, past school failure might lead returning offenders to be placed in classes below their age level, potentially increasing their chances of peer victimization.

In addition to labeling and effects of accumulation of structural disadvantage, it is thus important to consider juvenile incarceration within the context of adolescent development, and to frame the reentry experience in terms of different contexts of ongoing development. The present study investigates for the first time how facility experience prepares returning offenders for a successful transition into the community in general, and into the different environments of work and school for the different age groups for whom those contexts constitute a normative experience, respectively. Specifically, the study sample investigated the specific effect of the facility school experience on school attendance for those offenders who were minors at the time of transition into the community, and how it influenced transition into work for participants who were legal adults. By investigating the impact of facility school experience on gainful activity in three different ways, the present study thus lays important groundwork for future investigations on how facility experience influences successful transition for juvenile offenders in different developmental stages.

**Inclusion of individual perspective of education experience.** Individuals experience and react differently to their environment and thus there are potential moderators of the quality of the experience of incarceration. For example, in a literature review on the psychological

effects of imprisonment from 1980, the authors conclude that “*imprisonment is not harmful to all individuals ... A complex interaction of factors including individual difference variables, institutional orientation, degree of crowding, phase of sentence, and peer group affiliation seems to influence an individual's response to confinement.*” (Bukstel & Kilmann, 1980:469). While the notion individual differences in reaction to incarceration is thus far from being a novel idea, unfortunately it has been a largely ignored notion in the recent history of offending research.

Behavior is a joint function of personal and contextual influences, and development is driven by transactions between individuals and their environment (Dmitrieva et al., 2012; Sameroff, 2009; Sampson & Laub, 2005). In the words of one of the biggest theorists in developmental science “*what matters for development and behavior is the environment as it is perceived rather than as it may exist in objective reality*” (Bronfenbrenner, 1979, p. 4). Treatment evaluations consistently find that client perceptions of treatment and the therapeutic relationship are amid the strongest predictors of treatment outcomes (Schubert et al., 2012), while educational research repeatedly documents the importance of perceived school climate for positive academic outcomes (P. J. Cook, Gottfredson, & Na, 2010). Furthermore, meta-analysis shows that there is a strong association between the quality of the client–therapist relationship and treatment outcomes for adolescents with externalizing problems (Shirk & Karver, 2003), and the quality of teacher-student relationship is an important factor in initiating behavioral change for aggressive youth (Meehan, Hughes, & Cavell, 2003). It can be argued that any form of sanction constitutes a treatment intervention intended to change future behavior either through punishment or rehabilitation. Therefore similar interactions with treatment and individual offenders’ characteristics should be expected. Supporting this hypothesis for example, an evaluation of so called “boot camps” versus traditional facilities found that youth with histories

of abuse reported higher levels of stress in the boot camp setting (MacKenzie, Wilson, Armstrong, & Gover, 2001). Histories of prior court involvement seem to have complex implications for the academic functioning of young offenders: In a study with the serious male offenders from the pathways to desistance dataset, the authors found that youth with more prior court petitions are more pessimistic about their futures and perceive fewer educational and occupational opportunities in their communities (Chung et al., 2011). Similar evidence comes from a handful of exploratory or qualitative studies (Reed & Wexler, 2014; Schubert et al., 2012; Todis et al., 2001) and some investigations from Europe (Harder et al., 2013). For example, in qualitative studies of their incarceration experience, juvenile offenders repeatedly talk about being scared and humiliated, being bullied, feeling a sense of loss through reduced autonomy, being frustrated by petty rules and procedures, and about their antagonism with youth workers resulting from those negative experiences (Ashkar & Kenny, 2008; Clinkinbeard & Zohra, 2012; Lane et al., 2002). Recently a team of researchers from the Netherlands has accumulated quantitative evidence further demonstrating that such negative perceptions of their environment are connected to more negative adjustment within the institution for juvenile offenders, while positive relationships with staff help juvenile adjustment and increase treatment motivation (Eltink et al., 2015; van der Helm et al., 2014; van der Helm, Klapwijk, Stams, & van der Laan, 2009; van der Helm, Wissink, De Jongh, & Stams, 2013; van der Helm, Stams, van der Stel, et al., 2012; van der Helm, Stams, van Genabeek, & van der Laan, 2012). Specifically, a more open living group climate (one that has a therapeutic focus and grants more autonomy to residents) repeatedly was associated with more positive outcomes such as increased cooperation with staff, less aggressive behaviors, more cognitive empathy, feelings of being understood by staff, and more active coping. Furthermore, more responsiveness of group workers was positively

associated with higher internal locus of control and behavioral competence and subsequently to fewer criminal cognitions, self-serving cognitive distortions, and greater treatment motivation (Groeneweg, van der Helm, Stams, & Asscher, 2013; van der Helm et al., 2013). However, none of those studies investigated how these gains in adjustment within the facility were connected to community adjustment upon release.

In more theoretical terms, it has been suggested in qualitative work that young offenders' individual experience of incarceration impacts their intentions to reoffend through the perceived losses and gains associated with their incarceration (Ashkar & Kenny, 2008; Lane et al., 2002). Concretely, loss of hope, safety, amenities, and separation from family and other important people combined with the gain of life skills through for example counseling leads to a confrontation with their situation that typically instills a desire for change (L. S. Abrams, 2006b; Clinkinbeard & Zohra, 2012). However, many see their imprisonment as an experience that is unconnected to their lives outside. It is thus not surprising that young inmates also report on how their readiness for change often comes without knowledge on how to implement and sustain that change upon return and feel a lack of preparation for life back in the community (Ashkar & Kenny, 2008; Clinkinbeard & Zohra, 2012).

Taken together, these findings offer valuable first insights into the complex and powerful interactions of incarceration climate with individual histories, especially for adjustment within the facility. Although all adolescents who are incarcerated share certain basic experiences (e.g. restrictions on autonomy, separation from friends and family), incarceration itself is a heterogeneous category that includes a wide range of placements across facilities that vary considerably in the level of security and degree and variety of rehabilitative and treatment services offered (Schubert et al., 2012). Yet, most existing research on offender adjustment to the

community has treated incarceration as a binary variable. A more limited body of research has incorporated facility characteristics, mainly concentrating on comparisons of adult prison versus juvenile correctional centers (Lambie & Randell, 2013) or investigated the effects of so-called boot camps (Jeter, 2010; MacKenzie et al., 2001). However, researchers only are beginning to understand how offenders make use of the various treatment strategies offered to them, and how they use those to change delinquent attitudes and behaviors within the facility (L. S. Abrams, 2006b). There is a virtual absence of knowledge of how different forms of correctional “treatment” interact with individual histories to influence community outcomes.

An increased understanding of how juveniles’ perception of their treatment (the incarceration experience) relates to their subsequent behavior would yield results that have a high practical value for multiple reasons: (1) Incorporating the voices of the recipients of the interventions (the incarcerated juveniles) is desirable from a quality assurance point of view and thus belongs in a true rehabilitative framework (L. S. Abrams, 2006b). Beyond that however, if such perceptions are in fact related to future behavior, improving the institutional process becomes a method to improve recidivism (Schubert et al., 2012). This possibility alone would make further examination of the issue necessary. (2) The heterogeneity inherent in the juvenile justice system and evaluations of different interventions raises questions about how much is in fact known about the effectiveness of many juvenile justice sanctions (Greenwood, 2008). Investigating mechanisms of change, or which components of the incarceration experience are related to what behavioral changes in the future could provide a unifying framework across objectively different settings, strengthening the external validity of all findings. (3) It is known that facility climate influences behavior during confinement. For example, Kupchik and Snyder (2009) demonstrated that youths’ *understanding* of facility rules and their perceptions of school

quality and staff helpfulness were better predictors of inmate misconduct than either individual traits or static facility characteristics such as what rules were in place, type of educational program or staff ratios. Similarly, a study investigating differences between boot camps and traditional correctional facilities showed that above the impact of facility type, more positive perceptions of their environment lead youth in a particular boot camp to become less antisocial and less depressed over time (MacKenzie et al., 2001). (4) There is tentative evidence that different experiences within facilities do influence outcomes in the community. One study specifically assessed the relationship between perceptions of the institutional experience and community outcomes for serious juvenile offenders and found that more positive perceptions across different dimensions (e.g. perceived safety, presence of caring adults, presence of antisocial peers, availability of services) were positively associated with both less re-involvement with the system and less self-reported anti-social behavior above and beyond facility type and individual characteristics (Schubert et al., 2012).

The current study incorporates this perspective and assesses for the first time how the individual experience in the correctional school predicts “treatment outcomes” of desistance after re-entry. The individual experience incorporates both performance and relationship aspects of schooling into a measurement of educational experience while incarcerated. Furthermore, adjustment in the community is assessed along four dimensions: academic-, and employment-related adjustment, engagement in antisocial activity, and re-admittance into a secure facility. Together this will further our understanding of how individual experiences in the correctional schools are related to desistance.

**Factors influencing the protective effect of correctional education.** Ample research documents that the educational experience while incarcerated can serve as a turning point that



promotes desistance (Blomberg et al., 2011; Lochner & Moretti, 2004; Tanner et al., 1999). Additionally, more time spent in school repeatedly has been associated with lower rates of delinquency both in the general population of adolescents (Anderson, 2014; Hirschfield & Gasper, 2011) and among juvenile offenders (Blomberg et al., 2012). Despite this evidence, comparatively little is known about factors associated with increased academic achievement of juvenile offenders while they are incarcerated and how correctional schooling encourages re-enrollment in community schools.

***Importance of attachment to school.*** Life course theory suggests that youths who bond with prosocial individuals and traditional institutions subscribe to prosocial norms that consequently prohibit deviant behavior. One environment that fulfills these requirements is school, and school engagement repeatedly has been associated with a protective effect against delinquency. It is known that perceptions of their relationship with the classroom teacher predict academic motivation and achievement of students as early as beginning of elementary school (Hughes, 2011). Significant relationships also have been found between adolescents' self-reported levels of connectedness with school and academic motivation, risk for dropping out of school, and substance abuse or aggressive behavior (Bryant, Schulenberg, O'Malley, Bachman, & Johnston, 2003; McNeely & Falci, 2004; Meehan et al., 2003; Roorda, Koomen, Spilt, & Oort, 2011). For example, in a longitudinal nationally representative study, school bonding, school interest, school effort, academic achievement, and parental help with school were negatively associated with substance use over the course of adolescence (Bryant et al., 2003). While often assumed, few studies have actually investigated if the prosocial bond of school engagement serves as a mediator of delinquent behavior. One exception is a study by Kimberly Bender (2012), which investigated the mediating role of school engagement in the relation between child

maltreatment and delinquency. Concretely, in this large national sample of welfare system involved youth, level of school engagement accounted for the effects of maltreatment on initial delinquency such that youths at greater risk of maltreatment were more disengaged at school which in turn was associated with higher rates of self-reported delinquency.

In summary, a wealth of findings from the general population demonstrate important effects of bonding with teachers on both school engagement and performance, though the relationship to academic achievement is comparatively weaker (Roorda et al., 2011). Thus, it can be expected that teachers are important agents in encouraging engagement and shaping or changing negative expectancies in relation to school performance in correctional education as well. Moreover, this relationship aspect seems to be especially relevant in the context of correctional facilities, where teachers are one of the few attachment figures available. Studies from Europe on adolescents in (secure) residential care document that the relationship between teachers and adolescents goes beyond academic support, and that teachers often are used as important providers of emotional support (Harker, Dobel-Ober, Berridge, & Sinclair, 2004) and as a source of secure attachment (Harder et al., 2013). Moreover, in a qualitative study from the United States, Reed and Wexler (2014) found that juvenile offenders were very attuned to whether or not teachers cared about them and demonstrated academic resiliency and a continued desire to pursue education if they perceived their teachers in the correctional school to be supportive and caring. On the other hand, when students perceived teachers did not care and when there were difficulties in earning or transferring credits, further disconnection with school occurred. Similarly, a qualitative study of juvenile offenders still in public school found how, counter to general stereotypes, those juveniles truly appreciated teacher relationships in which teachers helped them learn (Sander, Sharkey, Olivarri, Tanigawa, & Mauseth, 2010). Other

studies show how perceived relationship quality with staff impacts emotional (MacKenzie et al., 2001) and behavioral (Ashkar & Kenny, 2008; Eltink et al., 2015; Kupchik & Snyder, 2009) adjustment while incarcerated. For example, while not specific to student-teacher relationships, in a qualitative study of treatment motivation in a correctional facility, high buy-in offenders also tended to maintain positive relationships with facility staff, who often became mentors and parental figures for them and reported to gain security and trust through staffs' consistency and availability (L. S. Abrams, 2006b). Interestingly, those offenders also articulated more concrete ideas about how to maintain their personal changes and avoid future involvement in crime. Thus, it seems that the relationship between teachers or counselors and adolescents is a key in successful residential care and might assist the juvenile offenders in building a future-oriented perspective that aids in the development of psychosocial maturity beyond the classroom context. Despite this accumulating evidence for the importance of relationships in shaping motivation, school achievement and even an orientation towards the future, the present study is the first to date who investigates the impact of school orientation and bonding to teachers in the facility on community adjustment of juvenile offenders.

***Facility differences.*** The juvenile justice system falls under both state and local jurisdictions and thus includes a wide variety of practical and philosophical approaches regarding what constitutes a punishable offense, who is eligible for diversion, and type and length of sanctions across the nation. Consequently, "incarceration" encompasses a number of qualitatively quite different experiences. For example, incarceration in an adult state prison far away from home is different from incarceration in a local low-security juvenile detention center under the supervision of counselors (Snyder & Sickmund, 2006). Across systems, incarceration in an adult facility repeatedly has been associated with worse community outcomes for juveniles

(Lambie & Randell, 2013). Next to differences in punitive orientation, levels of services, and correctional education programs, qualitative studies also document big differences in perceived levels of support that correspond to differences in security levels. For example, in a recent qualitative study with juvenile offenders, 80% of students in lower security settings reported encountering staff in their facility who cared about their progress, compared to only 40% in a high security setting (Reed & Wexler, 2014). However, systematic investigations of how such differences impact the correctional school experience, and whether this in turn influences community adjustment are still absent from the literature.

***Influences of timing, length and community history on facility school experience.***

While there is research on different types of facilities, very few studies examine the extent to which stage of delinquent career and age moderate the effect of incarceration (Huizinga & Henry, 2008). There is some empirical evidence for importance of timing of the incarceration experience, with generally more derailing effects associated with younger convictions. For example, De Li's (1999) analysis of the Cambridge study in Delinquent Development (Farrington 1977) showed a relationship between early convictions (age 10-13) and unemployment at age 16-17, as well as lower status achievement at age 18-19, but no relationship between later convictions (age 14-16) and both outcomes. While there is little indication that any benefit exists for longer lengths of stay on future rates of offending for serious juvenile offenders (Loughran et al., 2009), longer absence from the public school system likely decreases the likelihood of reconnecting to a normal school for returning offenders. Conversely however, one study with the present sample showed a positive relationship between time spent in a facility and grades (Chung et al., 2011). A multitude of studies shows that previous offending is one of the most important predictors of recidivism (Cottle, Lee, &

Heilbrun, 2001), and it should thus be assumed that the number of previous institutionalizations plays an important role in adjustment to current incarceration and reentry success. Some interesting evidence supporting this notion comes from a qualitative investigation, where juveniles with more previous incarceration experience demonstrated more mastery in the process of manipulating the staff to prove that they had changed, or developed more confidence in their ability to “skirt the system” rather than actually participating in their treatment program (L. S. Abrams, 2006b). Similarly, it can be assumed that previous community school experience exerts ongoing influence on the performance and adjustment to the correctional school, yet data on this issue is completely absent from the literature. Despite a considerable amount of evidence asserting their importance, given the conceptualization of incarceration as a binary variable in most studies, little attention has been given to any of those factors. Hence, the present study adds to the literature by including the length of time spent in the facility school as well as previous community school experience in all models.

In summary, most studies exclude even basic situational factors potentially associated with correctional school outcomes. In contrast, the present study accounts for the influence of length and intensity of schooling, as well as for previous school achievement of the juvenile offenders. While most previous studies have concentrated on achievement scores, tentative results from a handful of studies indicate that the positive effects of correctional education hinge in part on the quality of the relationship with teachers in the correctional setting. Bonding to teachers could play an important part in the process of generating motivation for academic achievement and preparation for successful re-entry into community schools. The current study expands on this idea by using a model that incorporates both objective (performance) and subjective (school orientation, satisfaction, bonding to teachers) dimensions of the construct, and

thus examining for the first time what the educational experience for youth in corrections entails. Additionally, the impact of systematic differences of this experience between juvenile and adult facilities was investigated. Overall the present study thus furthers existing knowledge on several areas of correctional education substantially.

**More reliable markers for successful re-integration into the community.** The majority of studies investigating the recidivism of juvenile offenders returning to their community rely on administrative records from authorities, which encompasses a range of problems from a measurement point of view. First, there is no common definition of recidivism in the field, and the term can encompass anything from being re-arrested, re-charged with an offense, re-convicted (i.e. charged and found guilty, i.e. adjudicated for an offense). Because it is difficult to compare those different measurements, especially when they are also collected over different periods of time, it is difficult to obtain reliable estimates of recidivism (Ostermann, Salerno, & Hyatt, 2015). Second, per definition, there are no objective measures of severe delinquent behaviors that would not have labeling consequences; comparisons between offenders and youth not affected by the juvenile justice system thus have to rely on self-reports of (hidden) delinquent behaviors. Finally, all commonly used measures of recidivism share one important feature: rather than measuring behavior of the offenders, they measure an administrative response to a detected behavior that is qualified as breaking the law. Delinquency is a social construct that qualifies a certain behavior as deviant; it is not identical with an objective behavior. Frameworks of cumulative disadvantage and labeling theory provide explanations for the biases that lead to disproportionate minority contact and are a reminder that police and court records are neither an objective nor accurate reflection of behavior, especially not of general tendencies in behavior (L. D. Moore & Elkavich, 2008; Rodriguez, 2013; Sampson & Laub,

2005). However, there are no good ways to account for those distortions and the field still mostly relies on official records to evaluate itself. Even within those restrictions, reliable estimates on rates of recidivisms and on other effects of incarceration are difficult to obtain and compare across localities and samples (Snyder & Sickmund, 2006).

In the current study, successful transition back into the community was assessed through a combination of engagement in gainful activity, self-reported antisocial behavior, and time spent back in a secure facility. The combination of those measures, while subject to the limitations of self-report data, provides a more accurate reflection of general behavioral tendencies as well as a comparison with system responses. Taken together they are more indicative of actual behavioral change.

**Paucity of research on female offenders.** To date the knowledge on moderating factors is very limited; despite mounting evidence for a distinct phenotype investigations on sex differences for example are largely absent in the literature (cf., Barrett, Katsiyannis, & Zhang, 2006). Furthermore, due to their comparatively small numbers, even basic knowledge on the efficacy of interventions in corrections, school outcomes and adjustment of female juvenile offenders is very limited (Hipwell & Loeber, 2006; Leve et al., 2005). By including females in the sample this will be the first study to investigate school background, school experience while incarcerated and its connection to community adjustment for girls.

In conclusion, investigating how individual facility experience of schooling and educational achievement while institutionalized predict adjustment after release, such as going back to community school or engagement in work and antisocial behavior seems warranted and furthers our understanding in respect to a number of significant gaps in the literature.

## The Present Study

The present study integrates a life-course framework of the development of criminal trajectories (Sampson & Laub, 1997, 2005) to investigate how educational experience in the institution influences transitioning back into the community for serious juvenile male and female offenders. The present study had several aims:

(1) Investigate and quantify dimensions of the educational experience of institutionalized serious juvenile offenders. It has been demonstrated that individual perceptions of the institutional experience are related to re-arrest and self-reported antisocial behavior after release among juvenile offenders (Schubert et al., 2012), yet research on the effects of incarceration has rarely included the subjective perspective of offenders in the examination of desistance processes. Similarly, the scant research on the institutional school experience of juvenile offenders has been based uniquely on achievement scores, grades, and diplomas received; to date there is no study that has investigated different facets of the educational experience among committed juvenile offenders. The present study thus furthers existing knowledge by testing different measurement models of school experience to best integrate subjective experiences (bonding with teacher, school orientation, time spent doing homework, and importance of school activities) with school achievement during commitment.

(2) Investigate how the quality of facility school experience influences transitioning back into the community. Specifically, it will be tested whether better subjective educational experience is connected to more involvement in gainful activity, decreased involvement in self-reported delinquency, and a decreased likelihood of returning to a facility.

(3) Investigate the meaning of successful transition into gainful activity in the developmental context of different age groups of the returning offenders. For adolescents, neither



school nor work information alone sufficiently reflects a successful transition back into the community. For example, some adolescents might have legally dropped out of school and are working full time, while others are not working but are attending school. Returning juvenile offenders typically span late adolescence and emerging adulthood; going back to high school is a path which is normative for the younger population, while with increasing age, finding employment or going to college is the appropriate way of being gainfully active. Both scenarios thus fulfill what many would consider an age-appropriate positive social role for the returning offenders. However, they constitute of qualitatively very different social contexts, which might impact their function as positive turning points. Despite the obvious need to use a combined indicator, existing research typically does not use a developmental framework that accounts for different pathways of successful reintegration into the community and either concentrates on only employment or only school outcomes. Thus, by investigating the effects of being gainfully active in general, as well as going back to high school or into a work environment for younger versus older parts of the sample, the present study for the first time disentangles general and specific protective effects of different ways of reconnection to the community and its effect on desistance.

(4) Investigate if facility school experiences and subsequent engagement in gainful activity, attendance of community schools, or employment are turning points that promote actual desistance from future delinquent behavior and decrease likelihood of future institutionalization, respectively. Existing research on educational achievement during commitment and transitioning outcomes has either not included other community outcomes or concentrated on repeated system contact in the form of re-arrest or reconviction. System contact measures of reoffending are subject to labeling bias and might not be a good indicator of actual behavior. Thus, in the present

study self-reports of delinquent behavior were used to assess in a path model if the higher school performance and attachment to school while institutionalized was leading to higher general gainful activity, school attendance and employment in the community, and if this in turn served as a positive turning point that supports actual desistance.

(5) Describe and investigate systematic differences in the experience of juveniles who received correctional education in adult versus juvenile facilities. There is evidence that incarceration in an adult facility is associated with overall worse outcomes for juvenile offenders (Lambie & Randell, 2013). This has largely been attributed to the more punitive atmosphere and increased vulnerability of younger inmates in the general institution environment within adult facilities. It can be assumed that there are systematic differences between adult and juvenile facilities which extend to the classroom: For example, schools in juvenile facilities are likely to be run like community middle and high schools, including a mandatory schedule, standardized testing and extracurricular activities (Foley & Gao, 2002; Gagnon et al., 2009). In adult facilities on the other hand, educational programs are likely designed to cater to adults, thus offering more GED and vocational classes. However, there exists no definite knowledge if such systematic differences impact school services and performance in a way that affects the transition back into the community for juvenile offenders. The present study thus advances the literature both by describing the educational experience in two settings and by investigating the impact of systematic differences between institutional schools in each facility type on community outcomes.

(6) Investigate if the relationship between educational experiences in institutions and community outcomes differs by sex.

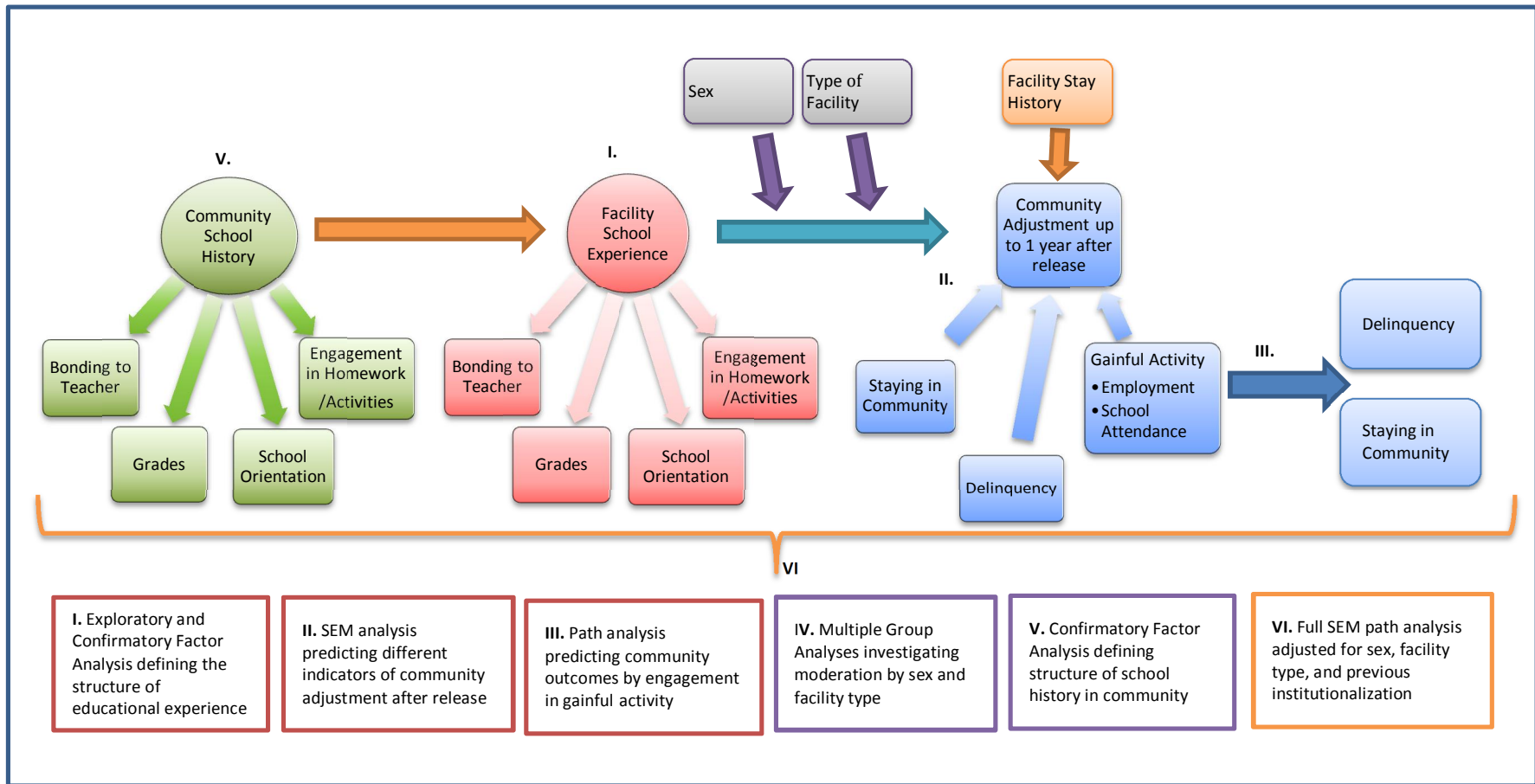


Figure 1: Schematic overview of steps of analyses.

(7) Finally, the present study took into account community school experience and institutionalization history of the incarcerated juveniles. The present study thus investigated the structure of school orientation, bonding to teachers, homework and grades in the community schools participants attended before their facility stay. These results were then included in a path model to account for the impact of this previous community school experience on the facility school experience and adjusted all outcomes by number of lifetime facility stays. A schematic overview of the different steps in the data analytic process is shown in Figure 1.

In summary, using both male and female participants of the Pathways to Desistance study, this study integrated a life-course framework of the development of criminal trajectories (Sampson & Laub, 1997, 2005) to test in a stepwise manner whether the quality of subjective (teacher bonding and school engagement) and objective (grades, time spent in facility school) school experience during institutional stay is related to transitioning to community schools (attendance), and/or work (gainful activity and employment), positive adjustment outcomes (self-reported anti-social behavior after release) and spending time back in a secure facility. In addition, the analyses investigated different outcomes by age of the returning offenders, moderating factors of sex and type of facility, and impact of previous community school experience and lifetime institutionalization.

## Methods

### Participants

**Pathways to Desistance study.** The present study is a secondary data analysis from the Pathways to Desistance project, a multisite, longitudinal study of serious juvenile offenders (Mulvey, 2004; Schubert et al., 2004). The sample of the Pathways to Desistance Study consists

of the most comprehensive data set currently available about serious adolescent offenders, following their lives through late adolescence and early adulthood.

Beginning in 2000, project staff recruited 1,354 adolescents (184 females and 1,170 males) aged 14 through 17 (at the time of their committing offense), who were adjudicated delinquent, or found guilty, of a serious (overwhelmingly felony-level) offense, at their current court appearance in Philadelphia, PA ( $N = 654$ ) and Phoenix, AZ ( $N = 700$ ). Each study participant was followed for a period of seven years.

The number of males adjudicated for a drug offense was capped at 15% of the sample so as to avoid overrepresentation of drug offenders. All females and all youth transferred to the adult system who met the enrollment criteria also were recruited to participate. Of the youths approached for participation, 67% of participants enrolled in the study; only 20% were not enrolled because they refused to participate. This equals a very high participation rate among high-risk populations. Cumulative retention rates were good, with 79.8% of participants completing nine out of ten waves of data collection (63.3% completed all waves); 84.5 % of participants completed the 7 year follow-up interview.

Data were collected with computer-assisted interviews at the participants' homes, in public places such as libraries, or in facilities if the participant was institutionalized at the time of interview. Measures and associated skip patterns were programmed onto laptop computers and each item was read aloud by trained interviewers. To maximize privacy, respondents could choose to enter their responses on a key pad (in some incarceration facilities, this option was not available). Study participants were paid using a graduated payment schedule ranging from \$50 to \$115 depending upon the interview period. Immediately after enrollment, researchers conducted a structured 4-hour baseline interview with each adolescent. The interview included a thorough

assessment of the youth's social background, developmental history, psychological functioning, psychosocial maturity, attitudes about illegal behavior, intelligence, school achievement and engagement, work experience, mental health, current and previous substance use and abuse, family and peer relationships, use of social services, and antisocial behavior. After the baseline interview, researchers interviewed participants every six months for three years and annually thereafter for four years, totaling 10 waves of data collection (including baseline). Follow-up interviews took approximately two hours to complete and included information on the adolescent's self-reported behavior and experiences during the prior six months or one year, respectively, including any illegal activity, drug or alcohol use, and involvement with treatment or other services. School attachment and achievement were assessed at baseline and at follow-up. In addition, the follow-up interviews collected data on changes in life situations (e.g., living arrangements and employment), developmental factors (e.g., likelihood of thinking about and planning for the future and relationships with parents), and functional capacities (e.g., mental health symptoms). Additional details regarding the study rationale have been outlined by Mulvey and colleagues (2004), while additional details regarding the study design, sample, and methodology are described in Schubert and colleagues' (2004) manuscript.

**Sample.** The current study used data from the restricted calendar data and public use baseline and follow-up interviews of the pathways to desistance study. This data was reduced to information from a subset of 569 participants (519 male and 50 female) who had received at least 3 months of institutional schooling in one unique stay at a facility. To be included in the analyses, we required that participants had complete data on their school experience at the institutional school and at least 50% of data present for a 12-month follow-up period after release from the institution. In addition, the unique stay in an institution had to be followed by at least a

two-month release back into the community. No participant contributed data on more than one stay to eliminate the possibility of bias produced by multiple ratings from the same individual. If a study participant had multiple qualifying episodes, the first institutional stay and subsequent 12-month follow-up period was used. An overview of the sample and comparison to the full study sample at baseline is included in Table 1.

## **Measures**

**Facility school experience.** Educational experience during commitment was assessed using the detention education measures from subject follow-up interviews as appropriate. This measure was based on the work of Cernkovich and Giordano (1992) and assessed academic commitment divided into assessment of Bonding to Teacher (mean of 3 items e.g., "Most of my teachers treat me fairly.") and School Orientation (mean of 7 items e.g., "Schoolwork is very important to me."). If participants were housed in a facility for three or more months during the recall period they rated statements on 5-point Likert scales regarding their facility schools, ranging from "Strongly Disagree" to "Strongly Agree," with higher scores indicating a greater degree of academic commitment. In the original study, a two-factor Confirmatory Factor Analysis (CFA) model was applied to the Bonding to Teacher and School Orientation dimensions in the baseline data set, producing an acceptable fit (NFI: .86; NNFI: .92; CFI: .94 and RMSEA: .07) and found adequate internal consistency of the measures at the follow-up time points. However, a one factor model also produced an acceptable fit (Mulvey & Schubert, 2012; Schubert et al., 2004). Participant's average time spent on homework (if any) in the institutional school was assessed through self-report on a scale ranging from 1 (no time spent on homework) to 5 (more than 10 hours a week spent on homework).

School performance was based on average grades during the recall period as reported by the study participants on a scale from 1 (mostly Ds and below) to 8 (mostly As); respondents reporting that they did not receive any grades were treated as missing.

Finally, two variables assessed the amount of schooling received while in the facility: (a) length of facility school attendance was assessed in continuous months and (b) rate of schooling was a proportion score dividing the number of school sessions received by the number of days spent in the facility.

**Gainful activity in the community.** Successful transitioning back to community schools or work was assessed using the construct of gainful activity. This construct is similar to that used by other researchers (see Bullis, Yovanoff & Havel, 2004) and was developed to provide descriptive data about school attendance and employment without drawing inferences about the impact of each of these simultaneous experiences on development (Mulvey, 2004). A "gainfully active" month thus indicated that the participant had either attended school and missed fewer than five days or had been employed (legally or "under the table") for at least two weeks at 20 hours a week in the past month. This marker generally was only assigned to months which were defined as community months, that is, months during which the juvenile was in an institution for less than 8 days. However, the participant also received credit for regularly attending school and/or working part-time in the community when the month was counted as an institution month but the participant spent the majority of the month in the community (only 8 or 9 days in an institution). This information was summarized into 6- and 12-month proportion scores, respectively, dividing the number of gainfully active months by the number of valid months (i.e., months with valid work or school data, not incarcerated and not missing). The proportion of



community months gainfully active was only computed if more than half of the community months in the recall period had valid (non-missing) data.

For analyses with the subset of participants who were under 18 years old at the point of transition back into the community, a similar proportion score regarding their school attendance in the community (missed fewer than 5 days in the past month) was calculated for the 6- and 12-month follow-up period. For additional analyses with the subset of participants who were 18 years and older, a similar proportion score for involvement in work (been employed for at least two weeks at 20 hours a week) was calculated for the 6- and 12-month follow-up periods.

**Self-reported delinquency.** Self-report of delinquent activity during the recall period, assessed at follow up interviews as composite scores, was used as an additional marker of successful transition back into the community. A modified version of the Self-Report of Offending (Elliott, 1990; Huizinga, Esbensen, & Weiher, 1991) scale was used at each interview and was recorded as a monthly count to measure the adolescent's account of his/her involvement in three drug-related delinquent acts (i.e., selling marijuana, selling other illegal drugs, driving while intoxicated or high), nine non-aggressive delinquent acts (i.e., breaking into a house to steal, breaking into a car to steal, shoplifting, buying/receiving/selling stolen property, using checks or credit cards illegally, stealing a car or motorcycle, joyriding, being paid by someone for sex, carried a gun), and 12 different aggressive delinquent acts (i.e., destroying/damaging property, setting fires, forcing someone to have sex, killing someone, shooting at someone [bullet hit or did not hit], robbery with and without weapon, assault, fights, fights as part of gang activity, carjacking). The sum of the number of items endorsed at least once within a given time span was divided by the number of questions answered to produce a "variety" proportion score (range 0 to 1) for each participant. This score assessed the number of different types of

delinquent acts in which the participant engaged in over a specific time period and was used in the current study as a severity index for delinquency as it is the standard for reporting offending in criminology. By using an offending variety proportion score, in contrast to a frequency score for example, researchers are better able to distinguish youth who are engaging in many different delinquent behaviors. This is particularly helpful when investigating drug-related delinquency as their frequency of delinquency may be higher (e.g., sold drugs hundreds of times), but their variety proportion score is low compared to youth who engage less frequently but in many different, and potentially more severe, forms of delinquent behavior (e.g., shooting, robbery, etc.). Higher scores on the delinquency severity history index indicate more varied, and hence severe, delinquency patterns. The monthly reported offending counts were summarized into a history proportion score to capture the variety of delinquency from transitioning back into the community to six months, from one to 12 months, and from seven to 12 months, respectively.

**Stay in the community.** Stay in the community was assessed monthly as whether the participant spent more than eight days in a secure facility, jail, or detention center (yes/no). For our study, we dichotomized this information into a reverse scored variable indicating if the participant spent all months in the community (1), or had any months in a secure facility (0) within the past six, 12, or seven to 12 months, respectively.

**Community school history.** Educational experience in the community prior to commitment was assessed using the community education measures from participant baseline interviews. This measure was based on the work of Cernkovich and Giordano (1992) and included 13 questions about academic commitment, including assessment of Bonding to Teacher (mean of 3 items e.g., "Most of my teachers treat me fairly.") and School Orientation (mean of 7 items e.g., "Schoolwork is very important to me."), rated on a 5-point Likert scale ranging from

"Strongly Disagree" to "Strongly Agree," with higher scores indicating a greater degree of academic commitment. In the original study, a two-factor CFA model was applied to the Bonding to Teacher and School Orientation dimensions at baseline, producing an acceptable fit (CFI: .93 and RMSEA: .07) and adequate internal consistency of the measure at the follow-up time points. However, a one factor model also produced an acceptable fit (Mulvey & Schubert, 2012; Schubert et al., 2004).

Participant's average time spent on homework (if any) in the community school at baseline was assessed through self-report on a scale ranging from 1 (no time spent on homework) to 5 (more than 10 hours a week spent on homework); School performance was based on average grades during the recall period as reported by the study participants on a scale from 1 (mostly Ds and below) to 8 (mostly As).

**Demographics.** Several demographic variables were included in the descriptive overview of the full and subsample to provide a description of the participants' characteristics (see tables 1-3). A single item represented race/ethnicity (i.e., White, Black, Hispanic, and other); age in years was a continuous variable. Type of facility was determined as juvenile, adult, and specialized services. Due to low cell counts for stays in specialized services facilities, we excluded this category from the demographic overview tables and from moderation analyses. The number of lifetime stays was a count variable. It combined stay number during the study period and number of previous lifetime incarceration experiences and was included in all adjusted models as a covariate.

Sex (coded as male = 0, female = 1) and type of facility (coded as 0 = juvenile, 1 = adult) were explored as potential moderators in a unique subset of analyses and were subsequently included as covariates where appropriate in adjusted models.

## Data Analysis

Analyses were performed using Mplus version 7.4 (Muthén & Muthén, 2015) and SPSS version 21 (IBM Corporation, 2013). To account for non-normality of the distributions, all analyses used MLR, a maximum likelihood estimator robust to non-normality and non-independence of observations. The MLR standard errors are computed using a sandwich estimator, while the MLR chi-square test statistic is asymptotically equivalent to the Yuan-Bentler T2\* test statistic. All nested model comparisons thus were calculated using the Satorra-Bentler scaled chi-square difference test (Muthén & Muthén, 1998-2015). In model comparisons resulting in negative test statistics, an alternative calculation using Loglikelihood values was used (Asparouhov & Muthén, 2013). For the models with categorical outcomes, MLR estimation with Monte Carlo integration was used to account for missingness on the predictor variables (Muthén & Muthén, 1998-2015). Participants with missing data were included in the model estimations using Full Information Maximum Likelihood (FIML) techniques. Model fit was assessed using the Root Mean Square Error of Approximation (RMSEA) and its 90% confidence interval, the Standardized Root Mean Square Residual (SRMR) and the Comparative Fit Index (CFI). Values of 0.95 or above for the CFI, 0.06 or below for the RMSEA and 0.08 for the SRMR indicate that the model adequately fit the data (Hu & Bentler, 1999).

In a first step, the complete data was reduced to a subsample of juvenile offenders who experienced a transition from incarceration to the community. This was achieved by restructuring the data from a longitudinal timeline organized by recall period into ordering it by occurrence of facility stays. Then, a distinct episode of incarceration during which participants received at least three months of schooling (facility stay data) that was followed by a transition into the community (gainful activity calendar data) for at least two months was identified. All

participants who had complete facility school data as well as at least 50% of data present for a 12-month follow-up period after release from the institution, including at least a two-month stay back in the community, were included in the study. If a study participant had multiple qualifying episodes, the first institutional stay and subsequent 12-month follow-up period was used. No participant contributed data on more than one stay to eliminate the possibility of bias produced by multiple ratings from the same individual.

Within the study sample, we then examined differences in the distribution of demographic characteristics, facility school experience, and outcomes in relation to the original study sample (Table 1), by age group (Table 2) and by type of facility (Table 3) using chi-square and independent sample *t*-tests, respectively in SPSS. Next, a combination of Exploratory Factor Analysis (EFA) and CFA was used to identify the best measurement structure for the facility school experience from the commitment school variables (Field, 2009). To test the predictive value of facility school experience on community integration we estimated four structural equation (SEM) models predicting gainful activity and self-reported offending at six and 12 months, respectively. Another series of models investigated whether facility school experience was associated with remaining in the community. Then, we split the sample into offenders who were under 18 years old at the time of transition (Younger subsample;  $N=310$ ) and offenders who were 18 and older at the time of transition (Older subsample;  $N=259$ ). Similarly, we investigated six SEM models predicting school attendance, offending, and remaining in the community at 6 and 12 months for the younger participants, and six SEM models investigating engagement in employment, offending, and remaining in the community for the older participants of the sample. In addition, path models where gainful activity/school attendance/employment predicted 7-12 month offending and remaining in the community were

estimated for both the complete and partial samples, respectively. Next, using the full sample, four series of nested group models were estimated to explore moderation by adult versus juvenile facility, by sex, by ethnicity and by study site for all outcomes. The fit of constrained versus unconstrained models was compared by examining differences in the models based on RMSEA, CFI, SRMR and the Sample size adjusted Bayesian Information Criterion (SSA BIC). Lower SSA BIC, SRMR and RMSEA, and higher CFI indicate a better model fit (Hu & Bentler, 1999).

Finally, CFA analyses of community school variables were conducted and the resulting latent and manifest variables were included as predictors in a final series of models predicting community outcomes. These models were adjusted for baseline levels of school attachment, school performance, and lifetime number of facility stays, as well as for sex and facility type, as appropriate in the full and younger subsample. A schematic overview of the analytic steps is included in Figure 1.

## Results

### Differences between Study Sample and Excluded Pathways Sample

The sample for the present study consisted of an ethnically diverse subsample of 569 (519 male and 50 female) participants from the Pathways to Desistance Study. While participants were about equally distributed between the two study sites in the original study, in the present study sample participants predominantly were from Philadelphia and there was a bigger proportion of offenders who were Black. Compared to the excluded participants ( $n=785$ ) of the original study, the final sample was younger at baseline ( $t = -6.60, p < .001$ ), were less likely to have been employed ( $\chi^2(1) = 6.13, p < .05$ ), but more likely to have been enrolled in school at baseline ( $\chi^2(1) = 6.98, p < .01$ ).

Table 1

*Descriptive Characteristics of Study Sample and Full Pathways Sample at Baseline*

Variable	Total Baseline Sample		Total Study Sample	
	<i>N</i>	Column %	<i>N</i>	Column %
<b>Demographic Characteristics</b>				
Total ( <i>N</i> , Row %)	1,354	100%	569	100%
Race				
White	274	20%	89	16%***
Black	561	41%	290	51%
Hispanic	454	34%	169	30%
Other	65	5%	21	4%
Study Site				
Philadelphia	700	52%	377	66%***
Phoenix	654	48%	192	34%
Sex				
Male	1,170	86%	519	91%***
Female	184	14%	50	9%
Age at Baseline (Mean, <i>SD</i> )	16.04	1.14	15.81	1.16***
Parental Index of Social Position (SES; Mean, <i>SD</i> )	51.41	12.30	52.17	12.04
Full Scale IQ (Mean, <i>SD</i> )	84.52	13.03	82.46	12.59***
Employed (Currently or Before Coming to Facility)	354	26%	129	23%*
<b>Community School Experience at Baseline</b>				
Enrolled in School (Currently or Before Coming to Facility)	972	72%	430	76%**
Ever go to a School Counselor/Special Teacher	123	9%	41	7%*
Ever Received any School Based Services	176	13%	66	12%
Involved in at Least One Extracurricular Activity in Last Year	566	46%	193	35%
Importance of Extracurricular Activities (Mean, <i>SD</i> )	2.49	1.47	2.49	1.47
Hours Per Week Spent on Homework				
None	571	47%	382	69%
Less Than One Hour	202	17%	49	9%
One to Five Hours	372	31%	93	17%
Six or More Hours	52	43%	30	5%
Bonding to Teachers In Community School (Mean, <i>SD</i> )	3.34	0.83	3.32	0.83
School Orientation in Community School (Mean, <i>SD</i> )	3.56	0.74	3.58	0.73
School Grades (Mean, <i>SD</i> )	4.20	1.90	4.09	1.86
<b>History of Offending</b>				
Lifetime Total Offending Variety Proportion (Mean, <i>SD</i> )	0.33	0.21	0.34	0.20
Lifetime Aggressive Offending Variety Proportion (Mean, <i>SD</i> )	0.30	0.20	0.31	0.19
<b>Juvenile Justice Contact</b>				
Age at First Prior (Mean, <i>SD</i> )	14.93	1.64	14.61	1.58***
Number of Previous Petitions (Mean, <i>SD</i> )	3.16	2.22	3.43	2.23***
Number of Facility Stays During Study Period	5.19	4.26	6.85	4.07***

Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$  in chi-square/*t*-tests of mean sample differences between cases included ( $N = 569$ ) versus excluded ( $N = 785$ ) in the study sample.

Table 2

*Demographic Characteristics of Study Sample by Age Group*

Variable	Total Study Sample		Young Sample		Old Sample	
	N	Column %	N	Column %	N	Column %
<b>Demographic Characteristics</b>						
Total (N, Row %)	569	100%	310	54%	259	46%
Race/Ethnicity						
White	89	16%	54	17%	35	14%
Black	290	51%	155	50%	135	52%
Hispanic	169	30%	92	30%	77	30%
Other	21	4%	9	3%	12	5%
Study Site						
Philadelphia	377	66%	201	65%	176	68%
Phoenix	192	34%	109	35%	83	32%
Sex						
Male	519	91%	282	91%	237	92%
Female	50	9%	28	9%	22	8%
Age at Transition Back into Community (Mean, SD)	17.95	1.48	16.98	0.77	19.12	1.27***
<b>Facility School Experience</b>						
Type of Facility						
Juvenile Facility	429	78%	260	87%	169	68%***
Adult Facility	119	22%	40	13%	79	32%
Lifetime Stay Number (Mean, SD)	4.23	3.47	3.73	2.79	4.82	4.06***
Number of Months Attended the Facility School (Mean, SD)	5.01	1.60	4.87	1.37	5.17	1.83*
Rate of Schooling (Total Sessions / Number Of Days in Facility; Mean, SD)	0.67	0.17	0.68	0.16	0.66	0.18
School Orientation (Mean, SD)	3.70	0.65	3.69	0.66	3.71	0.64
Bonding to Teachers (Mean, SD)	3.37	0.77	3.40	0.78	3.34	0.75
Received Job Training	327	58%	173	57%	154	60%
Hours Per Week Spent on Homework						
None	382	69%	210	69%	172	69%
Less Than One Hour	49	9%	31	10%	18	7%
One to Five Hours	93	17%	44	15%	49	20%
Six or More Hours	30	5%	18	6%	12	5%
Involved in any Activities	193	35%	111	37%	82	33%
Importance to Participate in these Activities (Mean, SD)	3.93	1.30	3.86	1.39	4.02	1.17
Received Grades	453	80%	263	85%	190	73%***
Grades (Mean, SD)	6.31	1.38	6.26	1.45	6.38	1.29
<b>Community Outcomes</b>						
Stay in Community 6 Months	439	77%	227	73%	212	82%*
Stay in Community 12 Months	324	57%	159	51%	165	64%**
Proportion of School Attendance at 6 Months (Mean, SD)	0.25	0.33	0.32	0.35	0.16	0.29***
Proportion of School Attendance at 12 Months (Mean, SD)	0.23	0.30	0.30	0.32	0.14	0.24***
Proportion of Gainful Activity at 6 Months (Mean, SD)	0.49	0.38	0.50	0.36	0.49	0.40



Proportion of Gainful Activity at 12 Months (Mean, <i>SD</i> )	0.49	0.35	0.49	0.33	0.49	0.37
Proportion of Employment at 6 Months (Mean, <i>SD</i> )	0.28	0.36	0.21	0.32	0.37	0.39***
Proportion of Employment at 12 Months (Mean, <i>SD</i> )	0.30	0.34	0.23	0.30	0.38	0.36***
Total Offending Variety Proportion Months 1-6 (Mean, <i>SD</i> )	0.08	0.13	0.09	0.14	0.06	0.11**
Total Offending Variety Proportion Months 1-12 (Mean, <i>SD</i> )	0.11	0.15	0.13	0.16	0.09	0.14**
<b>Type(s) of School Enrolled in After Return to Community</b>						
High School	222	39%	161	52%	61	24%***
GED Program	46	8%	23	7%	23	9%
Trade School	57	10%	42	14%	15	6%**
College	32	6%	14	5%	18	7%
<b>Community School Experience at Baseline</b>						
Enrolled in School (Currently or Before Coming to Facility)	430	76%	250	81%	180	69%**
Ever Failed a Class	459	81%	243	79%	216	83%
Ever go to a School Counselor/Special Teacher	41	7%	23	7%	18	7%
Ever go to a School for Children With Special Needs	28	5%	18	6%	10	4%
Ever Received any School Based Services	66	12%	38	12%	28	11%
Involved in at Least One Extracurricular Activity in Last Year	243	49%	133	48%	110	49%
Importance of Extracurricular Activities (Mean, <i>SD</i> )	2.49	1.47	2.53	1.47	2.45	1.47
Hours Spent on Homework per Week						
None	233	47%	121	44%	112	50%
Less Than One Hour	83	17%	46	17%	37	17%
One to Five Hours	153	31%	92	33%	61	27%
Six or More Hours	31	6%	17	6%	14	6%
School Orientation in Community School (Mean, <i>SD</i> )	3.58	0.73	3.64	0.76	3.51	0.69*
Bonding to Teachers in Community School (Mean, <i>SD</i> )	3.32	0.83	3.35	0.82	3.28	0.83
School Grades (Mean, <i>SD</i> )	4.09	1.86	4.16	1.84	4.00	1.87
<b>Other Background Variables</b>						
Number of Priors	3.43	2.23	3.39	2.27	3.47	2.19
Age at First Offense	14.61	1.58	14.15	1.46	15.17	1.53***
Employed (Currently or Before Coming to Facility)	440	77%	248	80%	192	74%

Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$  in Chi-square/*t*-tests of mean sample differences between older and younger participants, respectively. Young sample are participants <18.00 years, old sample are participants = 18.00 years and older.

Table 3

*Demographic Characteristics of Study Sample by Facility Type*

Variable	Juvenile Facility		Adult Facility	
	N	Column %	N	Column %
<b>Demographic Characteristics</b>				
Total (N, Row %)	429	78%	119	22%
Race/Ethnicity				
White	67	16%	13	11% ***
Black	251	59%	29	24%
Hispanic	97	23%	70	59%
Other	14	3%	7	6%
Study Site				
Philadelphia	330	77%	26	22% ***
Phoenix	99	23%	93	78%
Sex				
Male	393	92%	109	92%
Female	36	8%	10	8%
Age at Transition Back into Community (Mean, SD)	17.58	1.05	19.27	2.06 ***
<b>Facility School Experience</b>				
Lifetime Stay Number (Mean, SD)	3.61	2.56	6.50	5.15 ***
Peer Delinquency In Institution (Mean, SD)	3.18	0.74	3.51	0.84 ***
Future Orientation Of The Program (Mean, SD)	3.41	0.61	2.79	0.63 ***
Overall Safety Rating (Mean, SD)	4.74	0.51	4.38	0.85 ***
Number of Services Received Excluding Job Skills (Mean, SD)	4.25	1.77	2.22	1.34 ***
Received Job Training	279	66%	32	27% ***
Number of Calendar Months in this Stay (Mean, SD)	9.71	4.60	11.59	9.63 **
Number of Months in Facility School (Mean, SD)	4.97	1.39	5.20	2.24
Rate of Schooling (Total Sessions / Number of Days in Institution; Mean, SD)	0.69	0.14	0.58	0.21 ***
School Orientation (Mean, SD)	3.67	0.66	3.75	0.61
Bonding to Teachers (Mean, SD)	3.35	0.77	3.39	0.73
Hours per Week Spent on Homework				
None	299	72%	71	61%
Less than One Hour	31	7%	17	15%
One to Five Hours	64	15%	23	20%
Six or More Hours	23	6%	5	4%
Involved in Any Activities	178	42%	6	5% ***
Importance to Participate in these Activities (Mean, SD)	3.92	1.30	3.83	1.17
Received Grades	368	86%	65	55% ***
Grades (Mean, SD)	6.36	1.33	6.03	1.54
Received Case Management Services	409	95%	83	70% ***
<b>Community Outcomes</b>				
Stay in Community 6 Months	340	79%	83	70% *
Stay in Community 12 Months	253	59%	58	49% *
Proportion of School Attendance at 6 Months (Mean, SD)	0.28	0.34	0.12	0.25 ***

Proportion of School Attendance at 12 Months (Mean, <i>SD</i> )	0.25	0.30	0.13	0.25 ***
Proportion of Gainful Activity at 6 Months (Mean, <i>SD</i> )	0.50	0.37	0.44	0.41
Proportion of Gainful Activity at 12 Months (Mean, <i>SD</i> )	0.49	0.34	0.46	0.39
Proportion of Employment at 6 months (Mean, <i>SD</i> )	0.27	0.35	0.33	0.39
Proportion of Employment at 12 Months (Mean, <i>SD</i> )	0.28	0.33	0.36	0.37 *
Total offending Variety Proportion Months 1-6 (Mean, <i>SD</i> )	0.08	0.14	0.06	0.09 *
Total offending Variety Proportion Months 1-12 (Mean, <i>SD</i> )	0.11	0.15	0.09	0.14
<b>Type(s) of School Enrolled in After Return to Community</b>				
High School	193	45%	20	17% ***
GED Program	32	8%	10	8%
Trade School	49	11%	5	4% *
College	20	5%	10	8%
<b>Community School Experience At Baseline</b>				
Enrolled in School (Currently or Before Coming to Facility)	342	80%	73	61% ***
Ever Received Any School Based Services	50	12%	12	10%
Involved in at Least One Extracurricular Activity in Last Year	184	49%	52	51%
Importance of Extracurricular Activities (Mean, <i>SD</i> )	2.46	1.46	2.73	1.47
Hours Per Week Spent on Homework				
None	175	46%	49	48%
Less than one hour	61	16%	19	19%
One to Five hours	—	—	—	—
Six or more hours	—	—	—	—
School Orientation in Community School (Mean, <i>SD</i> )	3.59	0.77	3.59	0.62
Bonding to Teachers in Community School (Mean, <i>SD</i> )	3.27	0.82	3.54	0.82 **
School Grades (Mean, <i>SD</i> )	4.07	1.87	4.13	1.85
<b>Other Background Variables</b>				
Number of Priors	3.33	2.13	3.70	2.43
Age at First Offense	14.61	1.52	14.64	1.75
Employed (Currently or Before Coming to Facility)	107	25%	20	17%

*Note.* \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$  in Chi-square/*t*-tests of mean sample differences between participants in juvenile versus adult facilities, respectively. Only participants in either juvenile or adult correctional facilities were included in these calculations. — Numbers blinded for confidentiality.

The final sample was comprised of a smaller proportion of females than the original sample ( $\chi^2(1) = 19.27, p < .001$ ), and had more overall contact with the juvenile justice system: they were younger at their first prior court petition ( $t = -6.25, p < .001$ ), had more prior petitions at baseline ( $t = 3.83, p < .001$ ) and collected more facility stays during the study period ( $t = 12.89, p < .001$ ). Overall, the full and subsamples received very few school-based services or had ever seen a counselor or special teacher at school (between 7-13%) and less than half were involved with one or more extracurricular activities. On average, they received “mostly C’s” as grades and scored more than one Standard Deviation (*SD*) below the population mean for the Wechsler Abbreviated Scale of Intelligence (WASI) Full Scale IQ (Wechsler, 1999), with the final sample scoring even lower ( $t = -4.99, p < .001$ ); the majority spent very little or no time on homework. There were no differences in history of offending or any of the school measures between the final sample and the excluded participants.

### **Demographic Characteristics by Age Group and Facility Type**

To investigate the meaning of successful transition into gainful activity in the developmental context of different age groups the younger and older study subsamples (described above) were compared. Full results of this comparison are shown in table 2. As expected, a higher proportion of the older subsample was incarcerated in adult facilities ( $\chi^2(1) = 27.40, p < .001$ ), were less likely to have been enrolled in community school ( $\chi^2(1) = 9.50, p < .01$ ), had more lifetime stays in a correctional facility ( $t = -4.97, p < .001$ ), and spent more time in the facility school ( $t = -2.15, p < .05$ ). There were no differences in the other facility school variables, but a smaller percentage of older offenders received any grades while incarcerated ( $\chi^2(1) = 13.74, p < .001$ ). In terms of outcomes, as expected the subsample of younger offenders spent more time in school back in the community ( $t = 5.95, p < .001$ ;  $t = 6.41,$

$p < .001$  for 6 and 12 months, respectively) while being less involved in employment ( $t = -5.14$ ,  $p < .001$ ;  $t = -5.53$ ,  $p < .001$  for 6 and 12 months, respectively). In the combined measure however, there were no differences in overall involvement in gainful activity. The younger subsample was more than twice as likely to enroll in high school ( $\chi^2(1) = 47.78$ ,  $p < .001$ ) or trade school ( $\chi^2(1) = 9.42$ ,  $p < .001$ ) though overall enrollment rates for trade school, GED classes and college were very low in the entire sample. The younger subsample also reported more delinquency ( $t = 2.91$ ,  $p < .01$ ,  $t = 2.79$ ,  $p < .01$ , for 6 and 12 months, respectively) and was less likely to remain in the community ( $\chi^2(1) = 5.96$ ,  $p < .05$ ,  $\chi^2(1) = 8.872$ ,  $p < .01$ , for 6 and 12 months, respectively). The samples did not differ meaningfully in their community school history and were equally distributed across ethnicity, sex and study site.

In contrast, dividing the study sample into subsamples by stay in adult versus juvenile facility revealed differences in treatment across juvenile justice systems (see Table 3). Most offenders in adult facilities were from Phoenix, while the population in juvenile facilities was predominantly from Philadelphia ( $\chi^2(1) = 124.15$ ,  $p < .001$ ). This unequal distribution also resulted in differences in ethnicity across the samples, with more Black and Hispanic offenders in juvenile versus adult facilities, respectively ( $\chi^2(3) = 64.41$ ,  $p < .001$ ). As expected, participants in adult facilities were older ( $t = -8.60$ ,  $p < .001$ ), had more lifetime facility stays ( $t = -5.93$ ,  $p < .001$ ), and were less likely to have been enrolled in school prior to their stay ( $\chi^2(1) = 17.12$ ,  $p < .001$ ) or enroll in community high school ( $\chi^2(1) = 31.14$ ,  $p < .001$ ) or trade school ( $\chi^2(1) = 5.47$ ,  $p < .05$ ) upon their release. The incarceration experience between adult and juvenile facilities differed significantly: offenders in a juvenile facility reported less peer delinquency ( $t = -4.07$ ,  $p < .001$ ), were in a more future-oriented program ( $t = 9.69$ ,  $p < .001$ ), felt safer ( $t = 4.39$ ,  $p < .001$ ), and received on average more than twice as many services

( $t = 13.55, p < .001$ ), including case management services ( $\chi^2(1) = 66.50, p < .001$ ) and job training ( $\chi^2(1) = 57.96, p < .001$ ). While there were big average differences between length of stay in the facility and how much time they spent in the facility school for the entire sample suggesting major gaps in the delivery of correctional education, offenders in adult facilities received even lower school rates ( $t = 5.42, p < .001$ ). Little more than half of them received grades in school ( $\chi^2(1) = 54.29, p < .001$ ) and almost no one was involved in any extracurricular activities ( $\chi^2(1) = 54.70, p < .001$ ). Despite those stark differences in service delivery, there were no group differences on other facility school variables or in community school history, besides higher bonding to community teachers among the sample in adult an adult facility ( $t = -2.94, p < .01$ ). There were few differences in community outcomes by type of facility, but offenders returning from adult facilities were less likely to remain in the community ( $\chi^2(1) = 4.78, p < .05, \chi^2(1) = 3.98, p < .05$ , for 6 and 12 months, respectively). Finally, it is noteworthy that overall, juveniles received low levels of school services in the community, despite overall high levels of previous school failure and low average grades.

### **Exploratory and Confirmatory Factor Analyses of Facility School Experience**

Based on inspection of correlations regarding facility school data we decided to include seven variables in an initial EFA: (1) amount of time spent on homework, (2) involvement in any activities (yes/no), (3) grades, (4) bonding to teacher, (5) school orientation, (6) rate of schooling and (7) length of school attendance. The resulting eigenvalues of the EFA indicated a two- or three-factor solution (Eigenvalues for factors 1-3 1.76, 1.11, 1.10, respectively). Model results indicated a significantly better fit for a two versus a one factor model ( $\chi^2$ -difference (6) = 12.90,  $p < .05$ ) and no difference between a two and a three-factor model ( $\chi^2$ -difference (5) = 19.68,  $p = .069$ ). Specifically though, model fit was almost identical between the one- and two-factor

models and comparisons suggested that rate of schooling, time in facility school, and involvement in activities provided neither high nor discriminant loadings. Rate of schooling and time in facility school were thus excluded from further factor analyses. Due to high number of missing values and low correlations with all other variables, the “involvement in activities” variable was excluded from all further analyses (for correlations between all remaining study variables see Table 4). Based on EFA results and taking into account the low number of four remaining variables we then proceeded to compare subsequent models with a combination of latent and observed variables. Specifically, we compared a one-factor model to a model with a one-factor latent construct (attachment to facility school) and correlated manifest variable (grades) using CFA analyses. This showed an equivalent fit (Sample-size adjusted BIC [SSA BIC] = 5428.29; RMSEA = .03, 90%CI = .00-.09; CFI = 1.00;  $\chi^2 (2) = 2.49, p = .287$ ) of the two models and we thus decided to keep grades as a separate but correlated manifest variable. This strategy allows for a more meaningful comparison with the large body of literature that has concentrated solely on the contribution of school performance in detention to community adjustment.

This study conceptualized incarceration as an intervention which includes the assumption that it is important to include and control for the amount of exposure to treatment in any model measuring the impact of treatment on future behavior. Such an approach seemed even more important given the lack of such qualifiers in most existing research. We thus included rate of schooling and length of facility school attendance as predictors for both grades and the latent construct of subjective school experience to quantify exposure both in terms of duration and intensity of the school experience. This resulted in a SEM model that quantified multiple aspects of the facility school experience based on a combination of exploratory analyses and theoretical

considerations with a good fit (see Figure 2). This final SEM model was used as a starting point for all subsequent predictive analyses (see Figure 3).

### **Facility School Experience and Community Adjustment**

To test the predictive value of facility school experience on reintegration into the community we estimated several SEM path models predicting gainful activity, self-reported delinquency, and remaining in the community at 6- and 12-month follow-ups for the full sample and younger and older subsamples. A schematic overview of those unadjusted models is depicted in Figure 3. Correlations between all variables included in these analyses are included in Tables 4, 5, and 6, respectively; model results are presented in Tables 7-9.

Results in the full study sample showed that higher attachment to the facility school predicted better short- and long-term community adjustment in the form of more gainful activity and less self-reported delinquency at 6 and 12 months, respectively (see Table 7). In contrast, school performance in the form of grades, though positively correlated with attachment to facility school was not related to any of the community outcomes. In all models, facility school attachment increased with more time spent in the facility school and with higher rates of schooling. Conversely, while more time in school was associated with an increase in grades, rates of schooling had no influence on school performance. Overall, model fit for all unadjusted models in the full sample was good.

This pattern was repeated in the results in the younger subsample (see Table 8). Again, higher levels of facility school attachment was associated with more months of regularly attending community school and less delinquency at both 6 and 12 months, respectively. Grades were not related to any of the outcomes.



Table 4

*Zero-Order Correlations of Facility and Baseline School Variables with Outcomes in Full Study Sample*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. School Orientation Facility School	--																					
2. Bonding To Teachers Facility School	0.48***	--																				
3. Amount Of Homework Facility School	0.20***	0.18***	--																			
4. Grades in Facility	0.14***	0.06	0.03	--																		
5. Time In School	0.13**	0.03	0.09*	0.10*	--																	
6. Rate of Schooling	0.09*	0.11*	-0.03	0.05	-0.05	--																
7. School Orientation Community School	0.33***	0.17***	0.02	0.08	-0.03	0.06	--															
8. Bonding To Teachers Community School	0.25***	0.26***	0.09*	0.03	-0.01	0.03	0.47***	--														
9. Amount Of Homework Community School	0.13**	0.11**	0.09*	-0.02	-0.05	0.03	0.30***	0.18***	--													
10. Grades at Baseline	0.07	0.07	0.04	0.10*	-0.03	0.01	0.33***	0.19***	0.21***	--												
11. Sex	0.07	0.10*	0.16***	0.03	-0.05	0.04	0.01	0.01	-0.01	0.11*	--											
12. Age	0.01	-0.04	0.05	-0.03	0.20***	-0.16***	-0.10*	-0.02	-0.08	-0.06	-0.01	--										
13. Facility Type	0.05	0.02	0.05	-0.11**	0.06	-0.27***	0.00	0.12**	-0.06	0.01	-0.01	0.46***	--									
14. Proportion Of Gainful Activity At 6 Months	0.12**	0.08*	0.08	0.04	-0.07	-0.01	0.06	0.06	0.07	0.02	-0.01	-0.03	-0.07	--								
15. Proportion Of Gainful Activity At 12 Months	0.13**	0.10*	0.08	0.06	-0.04	-0.01	0.11**	0.09*	0.08	0.04	-0.02	-0.04	-0.04	0.90***	--							
16. Delinquency Variety Proportion At 6 Months	-0.22***	-0.12**	-0.12**	-0.10*	-0.13**	-0.04	-0.14***	-0.15***	-0.07	0.04	-0.11*	-0.10*	-0.08*	-0.18***	-0.18***	--						
17. Delinquency Variety Proportion At 12 Months	-0.22***	-0.15***	-0.12**	-0.07	-0.14***	-0.04	-0.13**	-0.14***	-0.13**	0.05	-0.11*	-0.09*	-0.06	-0.14***	-0.16***	0.90***	--					
18. Staying In Community 6 Months	0.11**	0.06	0.05	-0.01	0.02	0.00	-0.03	0.06	0.01	-0.02	0.07	0.05	-0.09*	0.21***	0.20***	-0.28***	-0.23***	--				
19. Staying In Community 12 Months	0.09*	0.11**	0.09*	0.05	0.04	0.08	-0.04	0.07	0.00	0.03	0.16***	0.08	-0.08*	0.19***	0.17***	-0.22***	-0.21***	0.63***	--			
20. Lifetime Stay Number	-0.05	-0.09*	-0.05	-0.06	-0.02	-0.18***	-0.07	-0.01	-0.11**	-0.03	-0.01	0.30***	0.34***	-0.08	-0.07	0.08	0.11**	-0.12**	-0.13**	--		
21. Delinquency 7-12 Months	-0.14***	-0.10*	-0.11*	0.00	-0.09*	-0.03	-0.09*	-0.08	-0.17***	0.00	-0.09*	-0.01	0.00	-0.03	-0.06	0.43***	0.74***	0.00	-0.08	0.12**	--	
22. Staying in Community 7-12 Months	0.06	0.10*	0.07	0.05	0.05	0.09*	-0.04	0.06	0.02	0.02	0.15***	0.10*	-0.07	0.16***	0.15***	-0.21***	-0.21***	0.53***	0.95***	-0.14***	-0.09*	--
Estimated Means	3.70	3.37	0.60	6.27	5.01	0.67	3.59	3.32	1.97	4.09	0.09	17.95	0.22	0.50	0.49	0.08	0.11	0.77	0.57	4.23	0.06	0.60

Note.  $N = 569$ . \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ . Sex was coded as 0 = male, 1 = female; Facility type was coded as 0 = juvenile facility, 1 = adult facility; Staying in community was coded as 0 = back in facility for at least 1 month, 1 = stayed in community.

Table 5

*Zero-Order Correlations and Estimated Means of Facility and Baseline School Variables with Outcomes in Younger Subsample*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. School Orientation Facility School	--																					
2. Bonding To Teachers Facility School	0.50***	--																				
3. Amount Of Homework Facility School	0.21***	0.21***	--																			
4. Grades in Facility	0.17**	0.10	0.04	--																		
5. Time In School	0.12*	0.04	-0.03	0.16**	--																	
6. Rate of Schooling	0.15**	0.15**	-0.03	0.09	0.01	--																
7. School Orientation Community School	0.43***	0.23***	0.05	0.09	0.05	0.09	--															
8. Bonding To Teachers Community School	0.22***	0.22***	0.10	0.02	-0.01	0.02	0.45***	--														
9. Amount Of Homework Community School	0.23***	0.14*	0.17**	0.01	0.05	0.08	0.28***	0.19***	--													
10. Grades at Baseline	0.08	0.05	0.06	0.08	0.01	-0.03	0.32***	0.17**	0.17**	--												
11. Sex	0.03	0.07	0.18**	0.02	-0.01	0.05	-0.01	-0.03	-0.04	0.13*	--											
12. Age	-0.08	-0.05	-0.08	0.04	0.03	-0.04	-0.05	-0.02	-0.08	-0.01	-0.02	--										
13. Facility Type	0.00	0.05	-0.03	-0.05	-0.13*	-0.21***	0.12*	0.23***	-0.07	0.11*	-0.09	0.05	--									
14. Proportion Of School Attendance At 6 Months	0.15**	0.07	0.04	0.00	0.00	0.08	0.08	0.16**	0.12*	0.10	-0.25***	-0.10	--									
15. Proportion Of School Attendance At 12 Months	0.19***	0.10	0.04	0.04	0.09	0.13*	0.13*	0.19***	0.11*	0.04	0.12*	-0.29***	-0.06	0.91***	--							
16. Delinquency Variety Proportion At 6 Months	-0.20***	-0.10	-0.12*	-0.14*	-0.13*	-0.01	-0.19***	-0.11*	-0.06	0.01	-0.14*	0.01	-0.06	-0.21***	-0.23***	--						
17. Delinquency Variety Proportion At 12 Months	-0.21***	-0.15**	-0.14*	-0.10	-0.13*	-0.02	-0.16**	-0.12*	-0.10	0.01	-0.15*	0.06	-0.05	-0.20***	-0.23***	0.92***	--					
18. Staying In Community 6 Months	0.15**	0.05	0.09	-0.01	0.02	-0.05	-0.02	0.05	0.02	-0.06	0.09	0.07	-0.08	0.22***	0.21***	-0.29***	-0.22***	--				
19. Staying In Community 12 Months	0.13*	0.12*	0.14*	0.05	0.03	0.01	-0.08	0.01	-0.02	-0.08	0.20***	0.11	-0.05	0.17**	0.15**	-0.22***	-0.21***	0.62***	--			
20. Lifetime Stay Number	-0.19***	-0.07	-0.09	-0.07	-0.09	-0.11	-0.09	-0.04	-0.09	0.05	-0.01	0.17*	0.02	-0.14*	-0.16**	0.17**	0.14*	-0.14*	-0.16**	--		
21. Delinquency 7-12 Months	-0.14*	-0.11	-0.14*	-0.01	-0.05	0.01	-0.11	-0.10	-0.13*	-0.06	-0.10	0.18*	-0.05	-0.12*	-0.15**	0.45***	0.73***	0.06	-0.04	0.07	--	
22. Staying in Community 7-12 Months	0.09	0.12*	0.11*	0.06	0.05	0.01	-0.08	-0.01	0.00	-0.09	0.18***	0.10	-0.05	0.18**	0.17**	-0.22***	-0.21***	0.56***	0.96***	-0.18**	-0.05	--
Estimated Means	3.69	3.40	0.59	6.24	4.87	0.68	3.65	3.35	2.03	4.16	0.09	16.98	0.13	0.32	0.30	0.09	0.13	0.73	0.51	3.73	0.06	0.53

Note.  $N = 310$ . \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$  Sex was coded as 0 = male, 1 = female; Facility type was coded as 0 = juvenile facility, 1 = adult facility; Staying in community was coded as 0 = back in facility for at least 1 month, 1 = stayed out of facility.

Table 6

*Zero-Order Correlations and Estimated Means of Facility and Baseline School Variables with Outcomes in Older Subsample*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. School Orientation Facility School	--																					
2. Bonding To Teachers Facility School	0.47***	--																				
3. Amount Of Homework Facility School	0.20***	0.14*	--																			
4. Grades in Facility	0.08	0.02	-0.01	--																		
5. Time In School	0.13*	0.03	0.18**	0.01	--																	
6. School Rate	0.01	0.05	-0.04	0.01	-0.09	--																
7. School Orientation Community School	0.19**	0.07	-0.01	0.03	-0.10	-0.01	--															
8. Bonding To Teachers Community School	0.30***	0.32***	0.08	0.03	0.01	0.05	0.49***	--														
9. Amount Of Homework Community School	0.02	0.05	0.00	-0.08	-0.15*	-0.05	0.33***	0.17**	--													
10. Grades at Baseline	0.05	0.09	0.03	0.13*	-0.06	0.05	0.33***	0.23***	0.26***	--												
11. Sex	0.12*	0.14*	0.14*	0.05	-0.08	0.02	0.04	0.05	0.06	0.08	--											
12. Age	0.07	0.00	0.15*	-0.19**	0.28***	-0.24***	-0.04	0.05	0.00	-0.07	0.01	--										
13. Facility Type	0.09	0.01	0.10	-0.21***	0.16*	-0.31***	-0.07	0.05	-0.01	-0.07	0.08	0.65***	--									
14. Proportion Of Employment At 6 Months	0.08	0.09	0.11	0.00	-0.05	-0.13*	-0.04	-0.04	-0.01	-0.07	-0.09	0.07	0.05	--								
15. Proportion Of Employment At 12 Months	0.11	0.16*	0.10	-0.02	-0.02	-0.14*	-0.01	0.00	0.01	-0.04	-0.15*	0.06	0.07	0.90***	--							
16. Delinquency Variety Proportion At 6 Months	-0.26***	-0.15*	-0.11	-0.02	-0.12	-0.10	-0.08	-0.23***	-0.08	0.08	-0.06	-0.04	-0.07	-0.04	-0.05	--						
17. Delinquency Variety Proportion At 12 Months	-0.24***	-0.16**	-0.09	-0.02	-0.14*	-0.10	-0.13*	-0.18**	-0.22***	0.11	-0.06	-0.06	-0.02	-0.06	-0.04	0.86***	--					
18. Staying In Community 6 Months	0.05	0.09	-0.01	-0.01	-0.01	0.07	-0.03	0.10	0.00	0.05	0.04	-0.13*	-0.16**	0.06	0.05	-0.23***	-0.22***	--				
19. Staying In Community 12 Months	0.04	0.12	0.03	0.03	0.03	0.17**	0.04	0.17**	0.04	0.18**	0.12	-0.12	-0.18**	0.10	0.12*	-0.18**	-0.18**	0.62***	--			
20. Lifetime Stay Number	0.07	-0.09	-0.03	-0.06	-0.01	-0.22***	-0.07	0.02	-0.13*	-0.09		0.32***	0.48***	-0.13*	-0.06	0.04	0.14*	-0.14*	-0.15*	--		
21. Delinquency 7-12 Months	-0.14*	-0.10	-0.05	0.01	-0.13*	-0.07	-0.12*	-0.05	-0.28***	0.08	-0.08	-0.07	0.07	-0.01	0.02	0.40***	0.77***	-0.08	-0.10	0.19**	--	
22. Staying in Community 7-12 Months	0.02	0.09	0.02	0.03	0.03	0.20***	0.04	0.15*	0.06	0.18**	0.12*	-0.09	-0.16**	0.05	0.08	-0.17**	-0.19**	0.48***	0.93***	-0.16**	-0.12*	--
Estimated Means	3.71	3.34	0.61	6.30	5.17	0.66	3.53	3.28	1.92	4.00	0.09	19.12	0.31	0.37	0.38	0.06	0.09	0.82	0.64	4.82	0.05	0.67

Note.  $N = 259$ . \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ . Sex was coded as 0 = male, 1 = female; Facility type was coded as 0 = juvenile facility, 1 = adult facility; Staying in community was coded as 0 = back in facility for at least 1 month, 1 = stayed out of facility.

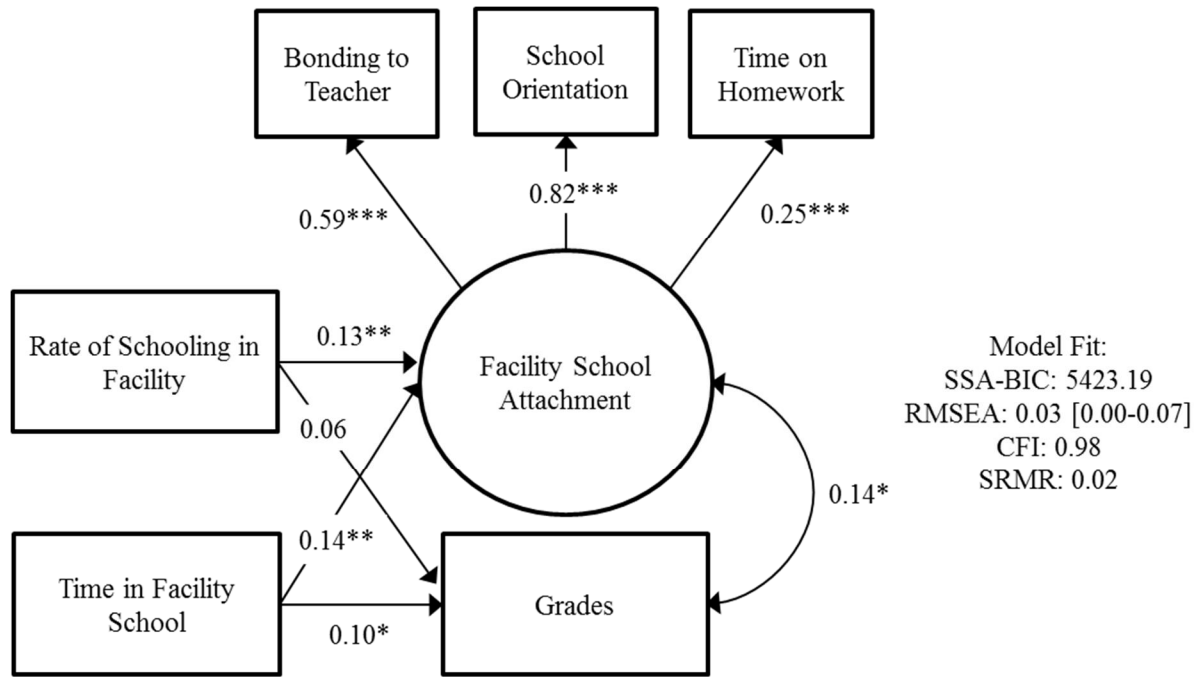


Figure 2. Measurement model of school experience in facility. Factor loadings and parameter estimates are standardized.  $N = 569$ . \*\*\*  $p < .001$ , \*\*  $p < .001$ , \*  $p < .05$ .

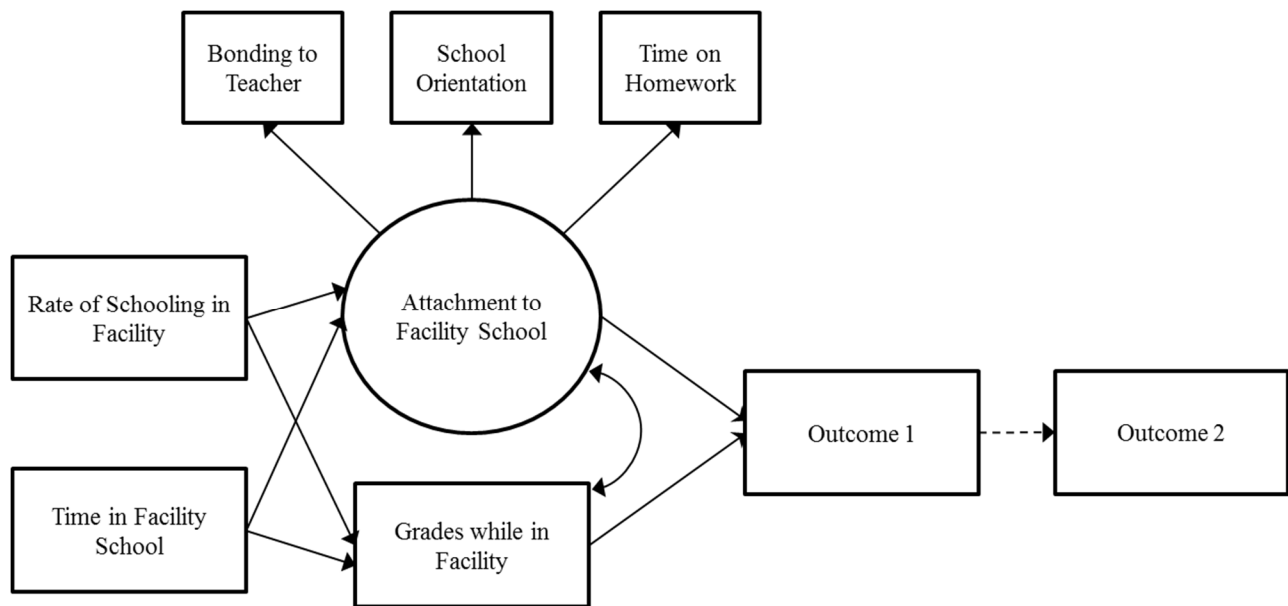


Figure 3. Schematic overview of unadjusted models

Table 7

*Parameter Estimates for Unadjusted Community Outcomes Models Full Study Sample*

Parameters	Gainful Activity 6 Months			Gainful Activity 12 Months			Delinquency 6 Months			Delinquency 12 Months			Community Stay 6 Months			Community Stay 12 Months		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
<b>Community Outcomes</b>																		
Facility School Attachment → Outcome	0.15	0.05	2.87**	0.16	0.05	3.09**	-0.26	0.06	-4.52***	-0.27	0.06	-4.59***	0.17	0.06	2.74**	0.16	0.06	2.56*
Grades In Facility → Outcome	0.01	0.05	0.27	0.03	0.05	0.55	-0.05	0.05	-0.94	-0.03	0.05	-0.59	-0.05	0.06	-0.72	0.02	0.05	0.30
<b>Covariates</b>																		
Rate of Schooling → Facility School Attachment	0.12	0.05	2.36*	0.12	0.05	2.41*	0.12	0.05	2.46*	0.13	0.05	2.54*	0.12	0.05	2.41*	0.14	0.05	2.64**
Time In School → Facility School Attachment	0.14	0.05	3.09**	0.14	0.05	3.03**	0.15	0.05	3.41***	0.16	0.05	3.42***	0.15	0.04	3.31***	0.14	0.05	2.98**
Rate of Schooling → Grades In Facility	0.06	0.05	1.19	0.05	0.05	1.18	0.06	0.05	1.23	0.06	0.05	1.27	0.06	0.05	1.28	0.06	0.05	1.31
Time In School → Grades In Facility	0.10	0.05	2.24*	0.10	0.05	2.23*	0.11	0.05	2.31*	0.11	0.05	2.28*	0.11	0.05	2.32*	0.10	0.05	2.29*
<b>Correlations</b>																		
Facility School Attachment And Grades In Facility	0.14	0.06	2.36*	0.14	0.06	2.32*	0.14	0.06	2.32*	0.14	0.06	2.25*	0.14	0.06	2.31*	0.14	0.06	2.14*
<b>Latent Variable (School Attachment)</b>																		
School Orientation	0.83	0.08	10.05***	0.81	0.08	10.46***	0.84	0.07	12.70***	0.81	0.06	12.90***	0.83	0.07	11.18***	0.77	0.07	10.56***
Homework	0.25	0.05	5.19***	0.26	0.05	5.48***	0.26	0.05	5.36***	0.27	0.05	5.73***	0.25	0.05	5.25***	0.27	0.05	5.81***
Bonding With Teacher	0.58	0.06	9.09***	0.59	0.06	9.54***	0.57	0.06	10.27***	0.59	0.05	11.06***	0.58	0.06	9.46***	0.63	0.06	9.90***
<b>Model Fit</b>																		
CFI; SRMR	0.97	0.03		0.98	0.03		0.97	0.03		0.96	0.03							
RMSEA; (95% CI)	0.04	(0.00-0.06)		0.03	(0.00-0.06)		0.04	(0.00-0.07)		0.04	(0.01-0.07)							
SSA-BIC; AIC													6037.31	6015.09	6202.40	6180.18		

Note.  $N = 569$ . All parameter estimates are standardized. For ease of interpretation, Community Stay was coded as 1 = stayed out of facility, 0 = back in facility for at least 1 month. Due to missingness on predictor variables MLR estimation with Monte Carlo integration was used in all models; only AIC and SSA-BIC model fit indices could be computed in those models.

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

Table 8

## Parameter Estimates for Unadjusted Community Outcomes Models Younger Subsample

Parameters	School Attendance 6 Months			School Attendance 12 Months			Delinquency 6 Months			Delinquency 12 Months			Community Stay 6 Months			Community Stay 12 Months		
	<i>B</i>	<i>S.E.</i>	$\beta$	<i>B</i>	<i>S.E.</i>	$\beta$	<i>B</i>	<i>S.E.</i>	$\beta$	<i>B</i>	<i>S.E.</i>	$\beta$	<i>B</i>	<i>S.E.</i>	$\beta$	<i>B</i>	<i>S.E.</i>	$\beta$
<b>Community Outcomes</b>																		
Facility School Attachment → Outcome	0.17	0.06	2.45*	0.23	0.06	3.80***	-0.22	0.07	-3.01**	-0.26	0.08	-3.41***	0.20	0.08	2.49 *	0.20	0.08	2.52 *
Grades In Facility → Outcome	0.01	0.07	0.21	-0.01	0.06	-0.15	-0.09	0.08	-1.14	-0.04	0.07	-0.57	-0.05	0.08	-0.62	0.01	0.07	0.11
<b>Covariates</b>																		
Rate of Schooling → Facility School Attachment	0.20	0.07	2.73**	0.20	0.07	2.69**	0.19	0.07	2.66**	0.19	0.07	2.69**	0.18	0.07	2.55 *	0.19	0.07	2.74 **
Time In School → Facility School Attachment	0.12	0.07	1.77	0.13	0.06	2.00*	0.13	0.06	1.99*	0.12	0.06	1.95	0.12	0.06	1.80	0.11	0.07	1.57
Rate of Schooling → Grades In Facility	0.09	0.06	1.36	0.10	0.05	1.75	0.09	0.05	1.73	0.10	0.05	1.77	0.10	0.05	1.80	0.10	0.05	1.79
Time In School → Grades In Facility	0.10	0.06	1.91	0.16	0.06	2.81**	0.16	0.06	2.86**	0.16	0.06	2.83**	0.16	0.06	2.82 **	0.16	0.06	2.84 **
<b>Correlations</b>																		
Facility School Attachment And Grades In Facility	0.30	0.07	4.30***	0.17	0.08	2.09*	0.18	0.08	2.13*	0.18	0.09	2.07*	0.17	0.08	2.09 *	0.17	0.09	1.99 *
<b>Latent Variable (School Attachment)</b>																		
School Orientation	0.80	0.08	9.72***	0.82	0.08	9.80***	0.81	0.08	9.65***	0.79	0.08	9.88***	0.82	0.10	8.68 ***	0.76	0.08	9.09 ***
Homework	0.28	0.06	4.53***	0.27	0.06	4.33***	0.27	0.06	4.24***	0.28	0.06	4.48***	0.27	0.07	4.04 ***	0.29	0.06	4.51 ***
Bonding With Teacher	0.63	0.07	9.15***	0.61	0.07	8.45***	0.61	0.08	8.03***	0.63	0.07	8.97***	0.60	0.08	7.46 ***	0.66	0.07	8.79 ***
<b>Model Fit</b>																		
CFI; SRMR	1.00	0.03	0.99	0.03	0.98	0.03	0.97											
RMSEA; (95% CI)	0.00	(0.00-0.05)	0.03	(0.00-0.07)	0.03	(0.00-0.07)	0.03	(0.00-0.07)	0.97	(0.00-0.08)								
SSA-BIC; AIC													3410.71	3399.98	3478.42	3467.69		

Note.  $N = 310$ . All parameter estimates are standardized. For ease of interpretation, Community Stay was coded as 1 = stayed out of facility, 0 = back in facility for at least 1 month. Due to missingness on predictor variables MLR estimation with Montecarlo integration was used in all models; only AIC and SSA-BIC model fit indices could be computed in those models.

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

Table 9

*Parameter Estimates for Unadjusted Community Outcomes Models Older Subsample*

Parameters	Employment 6 Months			Employment 12 Months			Delinquency 6 Months			Delinquency 12 Months			Community Stay 6 Months			Community Stay 12 Months		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
<b>Community Outcomes</b>																		
Facility School Attachment → Outcome	0.11	0.08	1.30	0.17	0.09	1.90	-0.31	0.10	-3.26***	-0.30	0.10	-2.95**	0.11	0.11	0.98	0.10	0.12	0.87
Grades In Facility → Outcome	-0.03	0.07	-0.38	-0.05	0.08	-0.68	0.00	0.07	0.06	0.00	0.08	-0.03	-0.05	0.10	-0.53	-0.01	0.09	-0.11
<b>Covariates</b>																		
Rate of Schooling → Facility School Attachment	0.04	0.07	0.56	0.04	0.07	0.52	0.06	0.07	0.76	0.06	0.07	0.83	0.05	0.07	0.65	0.06	0.08	0.72
Time In School → Facility School Attachment	0.16	0.07	2.35*	0.16	0.07	2.26*	0.17	0.07	2.43*	0.17	0.07	2.51*	0.16	0.07	2.43 *	0.16	0.07	2.42 *
Rate of Schooling → Grades In Facility	-0.02	0.08	-0.22	-0.01	0.08	-0.17	-0.02	0.08	-0.29	-0.02	0.08	-0.27	-0.02	0.08	-0.32	-0.02	0.08	-0.29
Time In School → Grades In Facility	0.00	0.07	-0.06	0.00	0.07	-0.06	0.00	0.07	-0.06	0.00	0.07	-0.05	0.00	0.08	0.02	0.00	0.07	-0.04
<b>Correlations</b>																		
Facility School Attachment And Grades In Facility	0.09	0.09	1.08	0.09	0.09	0.97	0.10	0.09	1.09	0.10	0.09	1.04	0.09	0.09	1.02	0.09	0.10	0.89
<b>Latent Variable (School Attachment)</b>																		
School Orientation	0.84	0.14	6.24***	0.78	0.12	6.46***	0.84	0.11	8.01***	0.82	0.10	8.30***	0.83	0.14	5.91 ***	0.79	0.14	5.45 ***
Homework	0.24	0.08	3.03**	0.26	0.07	3.57***	0.24	0.07	3.41	0.25	0.07	3.64***	0.24	0.07	3.35 ***	0.25	0.07	3.55 ***
Bonding With Teacher	0.55	0.10	5.69***	0.59	0.10	6.10***	0.54	0.09	6.40***	0.56	0.08	6.69***	0.56	0.11	5.21 ***	0.59	0.12	5.08 ***
<b>Model Fit</b>																		
CFI; SRMR	0.91	0.04	0.90	0.06	0.97	0.04	0.95											
RMSEA; (95% CI)	0.05	(0.00-0.09)	0.06	(0.01-0.10)	0.04	(0.00-0.08)	0.95	(0.00-0.08)										
SSA-BIC; AIC													2640.81	2633.47	2735.02	2727.67		

Note.  $N = 259$ . All parameter estimates are standardized. For ease of interpretation, Community Stay was coded as 1 = stayed out of facility, 0 = back in facility for at least 1 month. Due to missingness on predictor variables MLR estimation with Montecarlo integration was used in all models; only AIC and SSA-BIC model fit indices could be computed in those models.

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



Table 10

## Parameter Estimates for Path Models Predicting Community Adjustment by Different Types of Gainful Activity

Parameters	Full Study Sample (N = 569)			Younger Study Sample (N = 310)			Older Study Sample (N = 259)											
	Gainful Activity And Delinquency			Gainful Activity And Community Stay			School Attendance And Delinquency			School Attendance And Community Stay			Employment And Delinquency			Employment And Community Stay		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
<b>Incarceration Outcomes</b>																		
Gainful Activity 1-6 → Community Adjustment Months 7-12	-0.03	0.05	-0.71	0.19	0.05	4.00***	-0.12	0.05	2.50*	0.20	0.06	3.15**	-0.01	0.06	0.18	0.07	0.08	0.87
School Attachment → Gainful Activity	0.15	0.05	2.87**	0.14	0.05	2.82**	0.18	0.06	2.80**	0.18	0.07	2.79**	0.11	0.08	1.30	0.11	0.08	1.30
Grades in Facility → Gainful Activity	0.01	0.05	0.27	0.01	0.05	0.27	-0.03	0.06	0.54	-0.03	0.06	-0.56	-0.03	0.07	0.38	-0.03	0.07	-0.40
<b>Covariates</b>																		
Rate of Schooling → School Attachment	0.12	0.05	2.36*	0.12	0.05	2.38*	0.19	0.07	2.66**	0.19	0.07	2.72**	0.04	0.07	0.56	0.04	0.07	0.56
Time in School → School Attachment	0.14	0.05	3.09**	0.14	0.05	3.11**	0.12	0.06	1.86	0.12	0.06	1.86	0.16	0.07	2.35*	0.16	0.07	2.36*
Rate of Schooling → Grades in Facility	0.06	0.05	1.19	0.06	0.05	1.20	0.10	0.05	1.77	0.10	0.05	1.79	-0.02	0.08	0.22	-0.02	0.08	-0.22
Time in School → Grades in Facility	0.10	0.05	2.24*	0.10	0.05	2.25*	0.16	0.06	2.82**	0.16	0.06	2.82**	0.00	0.07	0.06	0.00	0.07	-0.06
<b>Correlations</b>																		
Grades and School Attachment in Facility	0.14	0.06	2.36*	0.14	0.06	2.36*	0.17	0.08	2.10*	0.17	0.08	2.10*	0.09	0.09	1.08	0.09	0.09	1.07
<b>School Attachment (Latent Variable)</b>																		
School Orientation	0.83	0.08	10.05***	0.83	0.08	10.0	0.82	0.10	8.50***	0.82	0.10	8.51***	0.84	0.14	6.24***	0.84	0.14	6.24***
Homework	0.25	0.05	5.20***	0.26	0.05	5.20***	0.27	0.07	4.14***	0.27	0.06	4.16***	0.24	0.08	3.03**	0.24	0.08	3.03**
Bonding to Teacher	0.58	0.06	9.09***	0.58	0.06	9.08***	0.61	0.08	7.71***	0.61	0.08	7.76***	0.55	0.10	5.69***	0.55	0.10	5.69***
<b>Model Fit</b>																		
CFI; SRMR	0.91	0.04					0.97	0.04					0.88	0.05				
RMSEA; (95% CI)	0.05	(0.03-0.07)					0.03	(0.00-0.06)					0.05	(0.00-0.08)				
SSA-BIC; AIC				6682.15	6656.42					3693.39	3680.96				2969.65	2961.14		

Note. All parameters are standardized. For ease of interpretation, Community Stay was coded as 1 = stayed out of facility, 0 = back in facility for at least 1 month. Due to missingness on predictor variables MLR estimation with Montecarlo integration was used in all models; only AIC and SSA-BIC model fit indices could be computed in those models. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

As in the full sample, a higher rate of schooling was significantly related to more attachment to the facility school in the younger subsample, but time spent in the facility school was not important in the younger subsample. Model fit for all unadjusted community adjustment models in the younger subsample was good.

Conversely, results with the older subsample showed that attachment to the facility school was not related to engagement in work at 6 nor 12 months after release, and the model fit for those models was only fair (see Table 9). Despite this lack of association with employment outcomes, as in the full and younger subsample, more attachment to the facility school was related to less self-reported delinquency. In this subsample, grades were not predicted by time in school nor correlated with attachment to the facility school, and rate of schooling was not associated with attachment to facility school in the models predicting self-reported delinquency.

In both the full and younger subsample, more attachment to the facility school was related to a higher likelihood of staying out in the community both at 6 months (Odds Ratio [OR]=1.77, 95% Confidence Interval, [95% CI]=1.23-2.57, full sample; OR=2.13, 95% CI=1.21-3.75, younger subsample) and 12 months (OR=1.82, 95% CI=1.16-2.83, full sample; OR=2.13, 95% CI=1.21-3.75; younger subsample; see Tables 7 and 8). Especially for the younger subsample, in this unadjusted model each increase in a unit of attachment to the facility school was associated with twice increased odds of not returning to a facility for a year after release back into the community. As in other community outcome models, better grades were not associated with remaining in the community at 6 months (OR=0.94, 95% CI=0.82-1.09, full sample; OR=0.94, 95% CI=0.79-1.11, younger subsample) nor 12 months (OR=1.02, 95% CI=0.90-1.15, full sample; 95% OR=1.01, CI=0.87-1.17, younger subsample). Conversely, there were no significant relations between attachment to the facility school (OR=1.47, 95% CI=0.72-2.95, at 6 months; OR=1.45, 95% CI=0.66-3.20, at 12 months) or grades (OR=0.93, 95%

CI=0.73-1.17, at 6 months; OR=0.99, 95%CI=0.80-1.22, at 12 months) and remaining in the community among the older subsample (see Table 9).

### **Engagement in Gainful Activity and Future Offending**

Path models investigating the protective effect of engagement in gainful activity during the first 6 months after release on self-reported delinquency for months 7-12 showed no significant relation between these constructs in the full sample (see Table 10). Similarly, there was no relation between employment in months 1-6 and self-reported delinquency in months 7-12 in the older subsample. However, in the younger subsample, more school attendance during months 1-6 showed a significant dampening effect on self-reported delinquency for months 7-12. Conversely, gainful activity and school attendance, respectively, during the first 6 months after release more than doubled the odds of staying in the community during months 7-12 in the full (OR=2.47, 95% CI=1.69-3.63), and younger subsample (OR=2.87, 95% CI=1.62-5.07). Working during months 1-6 on the other hand was again unrelated to staying in the community in the older subsample (OR=1.36, 95% CI=0.76-2.46).

### **Stay in a Juvenile versus an Adult Facility**

To investigate differences in the subjective school experience and subsequent community adjustment by type of facility, we estimated a series of multiple group comparison models. While staying in an adult ( $N=119$ ) versus juvenile ( $N=429$ ) facility was associated with numerous differences in service delivery (see Table 3), the multiple group comparisons showed little differences between relations with community adjustment by facility type (see Table 11). Specifically, nested model comparisons of fit showed that there was no difference in fit of the latent attachment to facility school variable during incarceration or at baseline. Thus, in all following model comparisons, the loadings of the latent attachment to facility school variable were held constant; comparisons were calculated between a fully constrained model and a model

where associations with outcomes were allowed to vary. Model comparisons showed no improved fit for a model accounting for differences in relationships with gainful activity and self-reported delinquency. However, letting parameters for remaining in the community vary was associated with overall better fit in the 12-month outcome, and a marginally better fit in the 6 month outcome. Specifically, offenders returning from adult facilities had an overall lower likelihood of remaining in the community and no significant relationship between attachment to school and remaining in the community (results not shown). Thus, type of facility was included as a covariate in all further analyses predicting stay in the community.

### **Sex Differences**

To investigate differences in the subjective school experience and subsequent community adjustment by sex, we estimated another series of multiple group comparison models. Results showed overall little differences between relationships to community adjustment for male ( $N=519$ ) versus female ( $N=50$ ) participants (see Table 12). Specifically, nested model comparisons showed that there was no difference in fit of the latent attachment to facility school variable during incarceration or at baseline by sex. Thus, in all following model comparisons, the loadings of the latent attachment to facility school variable were held constant; comparisons were calculated between a fully constrained model and a model where associations with outcomes were allowed to vary. Model comparisons showed no improved fit for a model accounting for differences in relationships with gainful activity and stay in community. However, letting parameters for self-reported delinquency vary was associated with overall better fit in both the 6 and 12 month outcome, with females reporting much lower rates of delinquency compared to males and no relationship between attachment to school and delinquency (results not shown). Thus, sex was included as a covariate in all further analyses predicting self-reported delinquency.

Table 11

*Model Comparisons of Facility School Experience and Community Outcomes by Juvenile or Adult**Facility Type*

Model by Constrained Outcome	Constrained Model			Unconstrained model			p-value	
	SCF	df	Chi-Square Value	SCF	df	Chi-Square Value		
Latent Variable Facility School Experience Construct (Facility School Attachment and Grades)	0.93	9	7.49	0.77	6	4.37	0.412	
SSA-BIC, RMSEA, CFI, SRMR	<b>5205.19</b>	0.000	1.000	0.033	5210.96	0.000	1.000	0.023
Latent Variable Community School Experience Construct (School Attachment and Grades at Baseline)~	0.96	9	-2814.09	1.29	6	-2809.22	0.235	
SSA-BIC	5687.63		0.068	5687.26		<b>0.058</b>		
Gainful Activity 6 Months	0.98	27	36.32	0.96	25	36.87	0.973	
SSA-BIC, RMSEA, CFI, SRMR	<b>5679.70</b>	<b>0.035</b>	<b>0.956</b>	0.042	5685.90	0.042	0.944	0.042
Gainful Activity 12 Months	0.98	27	35.11	0.97	25	35.44	0.935	
SSA-BIC, RMSEA, CFI, SRMR	<b>5601.78</b>	<b>0.033</b>	<b>0.962</b>	<b>0.041</b>	5607.89	0.039	0.951	0.042
Delinquency 6 Months	1.01	27	32.87	0.98	25	31.92	0.522	
SSA-BIC, RMSEA, CFI, SRMR	<b>4466.01</b>	<b>0.028</b>	<b>0.974</b>	0.039	4470.60	0.032	0.969	<b>0.038</b>
Delinquency 12 Months	0.96	27	38.69	0.94	25	35.22	0.186	
SSA-BIC, RMSEA, CFI, SRMR	<b>4667.02</b>	<b>0.040</b>	0.949	0.045	4669.41	0.041	<b>0.948</b>	<b>0.039</b>
Stay in Community 6 Months	1.00	27.00	35.54	0.99	25.00	31.97	0.176	
SSA-BIC, RMSEA, CFI, SRMR	<b>5809.44</b>	0.034	0.958	0.045	5811.86	<b>0.032</b>	<b>0.966</b>	<b>0.039</b>
Stay in Community 12 Months	0.97	27.00	37.92	0.98	25.00	29.67	<b>0.015</b>	
SSA-BIC, RMSEA, CFI, SRMR	<b>5995.71</b>	0.038	0.947	0.044	5994.00	<b>0.026</b>	<b>0.977</b>	<b>0.036</b>

Note.  $N = 548$ ; 429 in juvenile facility, 119 in adult facility. SCF = Scaling Correction Factor. MLR estimation was used to correct for non-normal distributions. Chi-square difference test for MLR estimation was computed using a SCF as outlined by Muthen and Muthen (2015). Better model fit values and significant p-values are indicated in bold. ~For baseline model  $N = 546$ , 428 in juvenile, 118 in adult facilities. Due to negative test statistics, an alternative calculation of Chi-Square difference testing using Loglikelihood values was used as outlined by Asparouhov and Muthen (2013). RMSEA and CFI could not be computed for this comparison.

Table 12

*Model Comparisons of Facility School Experience and Community Outcomes by Sex*

Model by Constrained Outcome	Constrained Model				Unconstrained model				p-value
	SCF	df	Chi-Square Value		SCF	df	Chi-Square Value		
Latent Variable Facility School Experience Construct (Facility School Attachment and Grades)	0.92	9.00	22.24	0.00	0.66	6.00	22.07	0.00	0.252
SSA-BIC, RMSEA, CFI, SRMR	<b>5433.22</b>	<b>0.072</b>	<b>0.927</b>	0.051	5436.84	0.097	0.912	<b>0.048</b>	
Latent Variable Community School Experience Construct (School Attachment and Grades at Baseline)~	0.98	9.00	7.41	0.00	0.98	6.00	6.89	0.00	0.920
SSA-BIC, RMSEA, CFI, SRMR	<b>5903.37</b>	<b>0.000</b>	<b>1.000</b>	0.029	5912.39	0.023	0.996	<b>0.026</b>	
Gainful Activity 6 Months	1.03	27	52.34		1.02	25	52.59		0.991
SSA-BIC, RMSEA, CFI, SRMR	<b>5942.92</b>	<b>0.057</b>	<b>0.881</b>	0.050	5949.23	0.062	0.87	<b>0.049</b>	
Gainful Activity 12 Months	1.04	27	46.84		1.03	25	46.51		0.689
SSA-BIC, RMSEA, CFI, SRMR	<b>5854.47</b>	<b>0.051</b>	<b>0.905</b>	0.048	5859.92	0.055	0.896	<b>0.047</b>	
Delinquency 6 Months	0.99	27	55.67		1.00	25	46.81		<b>0.007</b>
SSA-BIC, RMSEA, CFI, SRMR	4682.43	0.061	0.881	0.056	<b>4680.62</b>	<b>0.055</b>	<b>0.91</b>	<b>0.047</b>	
Delinquency 12 Months	0.95	27	61.64		0.98	25	49.98		<b>0.001</b>
SSA-BIC, RMSEA, CFI, SRMR	4858.73	0.067	0.859	0.059	<b>4855.07</b>	<b>0.059</b>	<b>0.898</b>	<b>0.048</b>	
Stay in Community 6 Months	0.99	27.00	39.90		1.01	25.00	38.39		0.733
SSA-BIC, RMSEA, CFI, SRMR	<b>6069.54</b>	0.041	0.937	0.043	6075.48	<b>0.043</b>	<b>0.935</b>	<b>0.043</b>	
Stay in Community 12 Months	0.98	27.00	45.25		0.99	25.00	44.68		0.780
SSA-BIC, RMSEA, CFI, SRMR	<b>6242.57</b>	0.049	0.914	0.046	6248.43	<b>0.053</b>	<b>0.907</b>	<b>0.045</b>	

Note.  $N = 569$ ; 519 males and 50 females. SCF = Scaling Correction Factor. ~For baseline model  $N = 567$ , 517 males, 50 females. MLR estimation was used to correct for non-normal distributions. Chi-square difference test for MLR estimation was computed using a SCF as outlined by Muthen and Muthen (2015). Better model fit values and significant  $p$ -values are indicated in bold.

Table 13

*Model Comparisons of Facility School Experience and Community Outcomes by Ethnicity*

Model by Constrained Outcome	Constrained Model			Unconstrained model			p-value
	SCF	df	Chi-Square Value	SCF	df	Chi-Square Value	
Latent Variable Facility School Experience Construct (Facility School Attachment and Grades)	0.89	9	18.07	0.75	6	14.35	0.208
SSA-BIC, RMSEA, CFI, SRMR	<b>5425.77</b>	<b>0.060</b>	<b>0.954</b>	0.056	5429.95	0.070	<b>0.957</b>
Latent Variable Community School Experience Construct (School Attachment and Grades at Baseline)	1.00	9	15.89	0.95	6	11.10	0.182
SSA-BIC, RMSEA, CFI, SRMR	<b>5897.43</b>	<b>0.052</b>	0.969	0.057	5901.56	0.055	<b>0.977</b>
Gainful Activity 6 Months	0.99	27	50.47	0.99	25	48.99	0.468
SSA-BIC, RMSEA, CFI, SRMR	<b>5937.48</b>	<b>0.055</b>	<b>0.897</b>	0.053	5942.28	0.058	<b>0.895</b>
Gainful Activity 12 Months	1.00	27	49.07	0.99	25	47.55	0.441
SSA-BIC, RMSEA, CFI, SRMR	<b>5850.25</b>	<b>0.054</b>	<b>0.903</b>	0.053	5854.86	0.056	<b>0.901</b>
Delinquency 6 Months	0.99	27	52.53	0.96	25	52.40	0.536
SSA-BIC, RMSEA, CFI, SRMR	<b>4658.77</b>	<b>0.058</b>	<b>0.897</b>	0.054	4663.41	0.062	<b>0.89</b>
Delinquency 12 Months	0.97	27	53.68	0.95	25	51.65	0.289
SSA-BIC, RMSEA, CFI, SRMR	<b>4840.89</b>	<b>0.059</b>	0.893	0.053	4844.17	0.061	0.893
Stay in Community 6 Months	1.00	27.00	46.67	1.00	25.00	45.51	0.586
SSA-BIC, RMSEA, CFI, SRMR	<b>6060.69</b>	<b>0.051</b>	<b>0.911</b>	0.052	6066.00	0.054	<b>0.907</b>
Stay in Community 12 Months	0.97	27.00	51.89	0.97	25.00	51.68	0.811
SSA-BIC, RMSEA, CFI, SRMR	<b>6257.52</b>	<b>0.057</b>	<b>0.891</b>	0.053	6263.43	0.061	0.883

Note.  $N = 569$ ; 290 African American and 279 all other. SCF = Scaling Correction Factor. MLR estimation was used to correct for non-normal distributions. Chi-square difference test for MLR estimation was computed using a SCF as outlined by Muthen and Muthen (2015). Better model fit values and significant  $p$ -values are indicated in bold.

Table 14

*Model Comparisons of Facility School Experience and Community Outcomes by Study Site*

Model by Constrained Outcome	Constrained Model			Unconstrained model			p-value		
	SCF	df	Chi-Square Value	SCF	df	Chi-Square Value			
Latent Variable Facility School Experience Construct (Facility School Attachment and Grades)	0.91	9	5.57	0.88	6	3.82	0.622		
SSA-BIC, RMSEA, CFI, SRMR	<b>5398.20</b>	0.000	1.000	0.024	5405.95	0.000	1.000	<b>0.018</b>	
Latent Variable Community School Experience Construct (School Attachment and Grades at Baseline)	1.02	9	17.33	0.00	0.98	6	16.22	0.00	0.669
SSA-BIC, RMSEA, CFI, SRMR	<b>5907.06</b>	<b>0.057</b>	<b>0.963</b>	0.049	5914.87	0.078	0.955	<b>0.039</b>	
Gainful Activity 6 Months	1.00	27	42.22	0.99	25	38.56	0.165		
SSA-BIC, RMSEA, CFI, SRMR	<b>5916.56</b>	0.045	0.924	0.046	5918.79	<b>0.044</b>	<b>0.932</b>	<b>0.043</b>	
Gainful Activity 12 Months	1.01	27	38.32	0.99	25	37.13	0.470		
SSA-BIC, RMSEA, CFI, SRMR	<b>5830.48</b>	<b>0.038</b>	<b>0.943</b>	0.043	5834.97	0.041	0.939	<b>0.042</b>	
Delinquency 6 Months	1.00	27	39.86	0.99	25	32.14	<b>0.029</b>		
SSA-BIC, RMSEA, CFI, SRMR	4633.20	0.041	0.940	0.046	<b>4631.48</b>	<b>0.032</b>	<b>0.967</b>	<b>0.038</b>	
Delinquency 12 Months	0.98	27	38.63	0.97	25	32.69	0.061		
SSA-BIC, RMSEA, CFI, SRMR	<b>4806.83</b>	0.039	0.945	0.044	4807.31	<b>0.033</b>	<b>0.962</b>	<b>0.039</b>	
Stay in Community 6 Months	1.02	27.00	32.26	1.01	25.00	27.08	0.083		
SSA-BIC, RMSEA, CFI, SRMR	<b>6045.64</b>	0.026	0.972	0.043	6046.56	<b>0.017</b>	<b>0.989</b>	<b>0.036</b>	
Stay in Community 12 Months	0.99	27.00	34.93	0.99	25.00	32.16	0.251		
SSA-BIC, RMSEA, CFI, SRMR	<b>6235.52</b>	0.032	0.959	0.041	6239.10	0.032	<b>0.963</b>	<b>0.039</b>	

Note.  $N = 569$ ; 377 from Philadelphia and 192 from Phoenix. other. SCF = Scaling Correction Factor. MLR estimation was used to correct for non-normal distributions. Chi-square difference test for MLR estimation was computed using a SCF as outlined by Muthen and Muthen (2015). Better model fit values and significant  $p$ -values are indicated in bold.



## Differences by Ethnicity and Study Site

In a final series of multiple group comparisons we investigated differences in the subjective school experience and subsequent community adjustment by ethnicity and study site. Results showed overall little differences between relationships to community adjustment for African American ( $N=290$ ) compared to participants from all other races/ethnicities ( $N=279$ , see Table 13) and by participants from the Philadelphia ( $N=377$ ) and Phoenix ( $N=192$ ) study sites (see Table 14). Specifically, nested model comparisons showed that there was no difference in fit of the latent attachment to facility school variable during incarceration or at baseline by ethnicity or study site. As above, in all following model comparisons, the loadings of the latent attachment to facility school variable were thus held constant; comparisons were calculated between a fully constrained model and a model where associations with outcomes were allowed to vary. Model comparisons showed no improved fit for a model accounting for differences in relationships with any of the outcomes by ethnicity, and ethnicity was not included as a covariate in any of the adjusted models. Conversely, letting parameters for self-reported delinquency vary was associated with a significantly better fit in the 6 month outcome in the study site comparisons, with participants from Phoenix reporting a relationship between grades in detention and delinquency, compared to participants from Philadelphia who showed no such relationship (results not shown). However, in the present study the sample composition between the two study sites was heavily confounded with participants' stay in adult versus juvenile facilities (see Table 2), and a high percentage of participants from Phoenix reported not receiving any grades at all (overall 116 participants with missing grades, 76 from Phoenix, see Table 2). It seems thus that this difference was an artifact of age and facility differences associated with the site differences. Since there were no significant differences by facility type we thus decided not to

include study site as a covariate in any of the adjusted analyses to avoid over adjusting our models.

### **Path Models with Community School History and Covariates**

To take into account past community school experience we proceeded to build another series of SEM path models that adjusted for community school history and relevant covariates in the full sample and younger subsample. To verify that the community school history variables were modeled adequately, we estimated a CFA paralleling the structure of the facility school variables. This model showed a good fit; results are shown in Figure 4. Based on the results of the multiple group comparisons, sex was included as a predictor of self-reported delinquency in all models with that outcome. Similarly, type of facility was included as a predictor in all models with stay in community as the outcome. Finally, number of lifetime facility stays was included as a predictor on all outcomes. Figure 5 shows a schematic overview of the adjusted models that include community school experience history and covariates; model results are presented in Tables 13-15.

### **Community School, Facility School Experience and Adjustment after Release**

Results of the adjusted models in the full study sample showed that higher attachment to facility school predicted better short- and long-term community adjustment in the form of more gainful activity and less self-reported delinquency at 6 and 12 months, respectively, even when accounting for community school history, lifetime facility stays and sex, where appropriate (see Table 15). Again, school performance in the form of grades, though still positively correlated with attachment to facility school was not related to any of the community outcomes. Higher school attachment in the community was strongly associated with higher school attachment in the facility in all models, and higher grades in the community predicted better performance in the

facility school, though the association was much weaker. While school attachment and school performance were strongly correlated in the community school variables, this association was much weaker in the facility school variables. In all models, facility school attachment increased with more time spent in the facility school and with higher rates of schooling. Conversely, while more time in school was associated with an increase in grades, rate of schooling had no influence on school performance. Lifetime stay number was not related to any of the outcomes, but being female was associated with a strong reduction in self-reported delinquency. Overall, model fit for all adjusted models in the full sample was good.

This overall pattern was repeated in the results in the younger subsample (see Table 16): Higher facility school attachment was associated with more months of regularly attending community school and less delinquency at both 6 and 12 months, respectively even when accounting for community school history, lifetime facility stays and sex, where appropriate. However, the size of the effect on self-reported delinquency was considerably smaller in the younger subsample versus the full sample. Again, grades were not related to any of the outcomes. In the younger subsample, higher school attachment in the community was strongly associated with higher school attachment in the facility. School attachment and school performance were again strongly correlated in the community school variables in the younger subsample, though the effect was slightly smaller than in the full sample in all models. Other than in the full sample though, grades in the community were not related to performance in the facility school in any of the models. As in the full sample, a higher rate of schooling and time in the facility were significantly related to more attachment to the facility school in the younger subsample. Being female again was associated with a strong reduction in self-reported

delinquency in the younger subsample, but other than in the full sample, higher lifetime stay number was related to less school attendance at 6 and 12 months, and more self-reported delinquency at 6 months. Model fit for all unadjusted community adjustment models in the young subsample was good. In the full study sample a higher attachment to the facility school (OR=1.52, 95% CI=1.09-2.10) was related to a higher likelihood of staying out in the community at 6 months, (see Table 15). In contrast to findings in the unadjusted models however, this was unrelated to staying out in the community at 12 months in the full sample (OR=1.42, 95% CI=1.03-1.97), and neither facility school attachment (OR=1.54, 95% CI=1.03-2.32, at 6 months; OR=1.45, 95%CI=0.96-2.17, at 12 months) nor grades in the facility (OR=0.95, 95% CI=0.80-1.13, at 6 months; OR=1.02, 95%CI=0.88-1.82, at 12 months) predicted stay in the community in the younger subsample when accounting for type of facility, lifetime number of facility stays, and community school history (see Table 16).

Finally, adjusted path models investigating the protective effect of engagement in gainful activity during the first 6 months after release on self-reported delinquency for months 7-12 showed no significant relation between the two constructs in the full sample (see Table 17). In the younger subsample, more school attendance during months 1-6 showed a significant dampening effect on self-reported delinquency for months 7-12. Conversely, gainful activity and school attendance, respectively, during the first 6 months after release more than doubled the odds of staying in the community during months 7-12 in the full sample (OR=2.37, 95% CI=1.60-3.50), and younger subsample (OR=2.61, 95% CI=1.46-4.68) even when accounting for past community school experience, facility type, and lifetime facility stays.

## Post Hoc Analyses of Involvement in Employment

To further investigate structural disadvantage involved with the lack of involvement in employment after release, we calculated a series of one-way between subjects Analysis of Variance (ANOVA) with *post hoc* comparisons of the outcome variables by race/ethnicity among the older subsample. Results showed significant differences in involvement in employment after release by race/ethnicity for both the 6- ( $F(3, 254) = 3.94, p < 0.01$ ) and 12-month outcomes ( $F(3, 254) = 3.29, p < 0.05$ ). *Post hoc* comparisons using the Bonferroni correction (Field, 2009) indicated that the mean score for Whites ( $M = .57, SD = .42, 6$  months;  $M = .56, SD = .39, 12$  months) was significantly higher than for Blacks ( $M = .35, SD = .37, 6$  months;  $M = .35, SD = .36, 12$  months), Hispanics ( $M = .33, SD = .36, 6$  months;  $M = .35, SD = .36, 12$  months), and Other ( $M = .26, SD = .45, 6$  months;  $M = .36, 12$  months), who did not differ among themselves. Conversely, there were no group differences between involvement in school ( $F(3, 254) = 0.23, p = .874, 6$  months;  $F(3, 254) = 0.33, p = .804, 12$  months), self-reported delinquency ( $F(3, 253) = 0.713, p = .550, 6$  months;  $F(3, 253) = 0.79, p = .499, 12$  months), or stay in the community at 6 ( $\chi^2(3) = .77, p = .857$ ) and 12 months ( $\chi^2(3) = 5.39, p = .145$ ) between participants of different races/ethnicities.

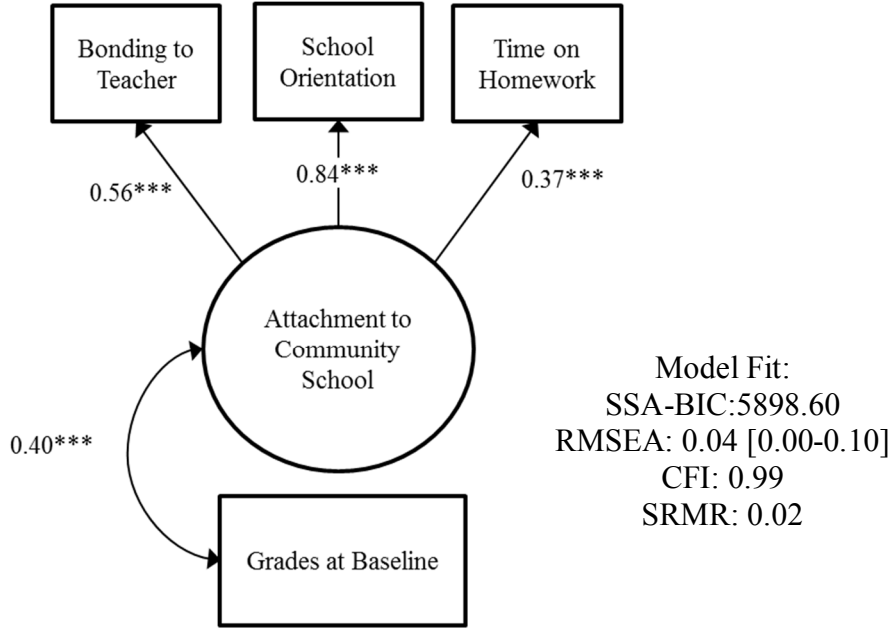


Figure 4. CFA of school experience in community school at baseline.  $N = 567$ . All parameters are standardized. \*\*\*  $p < .001$

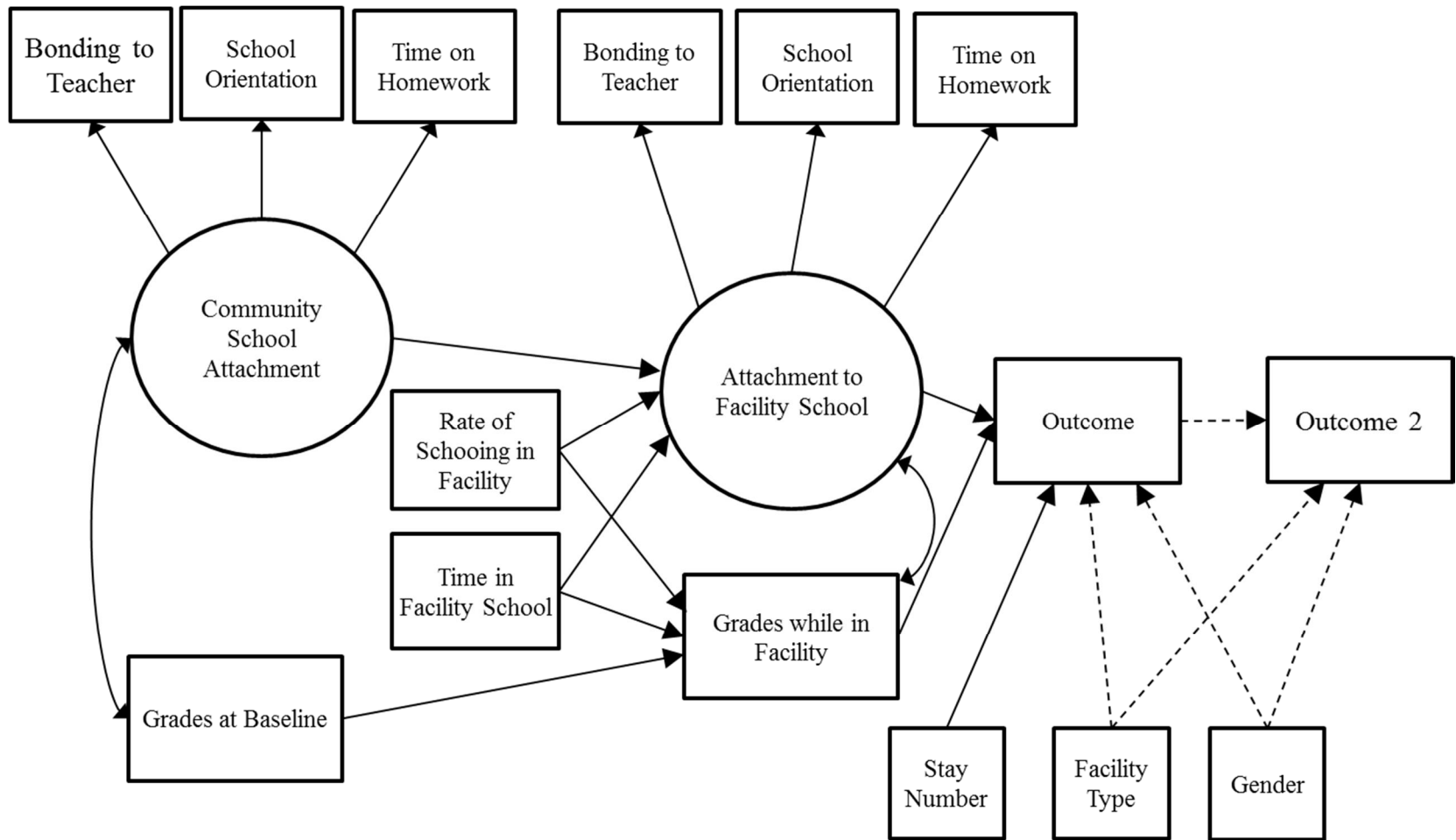


Figure 5. Schematic overview of fully adjusted models.

Table 15

*Parameter Estimates for Community Outcomes Models Adjusted for Baseline School Experience and Sex with Full Study Sample*

Parameters	Gainful Activity 6 Months			Gainful Activity 12 Months			Delinquency 6 Months			Delinquency 12 Months			Community Stay 6 Months~			Community Stay 12 Months~		
	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.	β
<b>Community Outcomes</b>																		
Facility School Attachment → Outcome	0.14	0.05	2.85**	0.16	0.05	3.17**	-0.25	0.05	-4.56***	-0.26	0.06	-4.36***	0.13	0.06	2.09*	0.11	0.06	1.86
Grades In Facility → Outcome	0.01	0.05	0.16	0.02	0.05	0.44	-0.05	0.05	-0.83	-0.02	0.05	-0.43	-0.04	0.06	-0.66	0.02	0.06	0.31
<b>School Attachment History</b>																		
Community School Attachment → Facility School Attachment	0.44	0.06	7.65***	0.45	0.06	7.84***	0.45	0.06	7.78***	0.45	0.06	7.87***	0.43	0.06	7.41***	0.43	0.06	7.48 ***
Baseline Grades → Grades In Facility	0.11	0.05	2.48*	0.11	0.05	2.47*	0.11	0.05	2.44*	0.11	0.05	2.44*	0.11	0.05	2.32*	0.11	0.05	2.31 *
<b>Covariates</b>																		
Lifetime Facility Stays → Outcome	-0.10	0.05	-1.94	-0.06	0.05	-1.16	0.06	0.04	1.70	0.10	0.07	1.47	-0.10	0.06	-1.80	-0.11	0.06	-1.80
Sex → Outcome							-0.09	0.03	-3.26***	-0.09	0.03	-3.33***						
Facility Type → Outcome													-0.09	0.06	-1.50	-0.06	0.05	-1.22
Rate of Schooling → Facility School Attachment	0.09	0.05	2.01*	0.10	0.05	2.05*	0.10	0.05	2.13*	0.10	0.05	2.16*	0.10	0.05	1.97*	0.11	0.05	2.11 *
Time In School → Facility School Attachment	0.16	0.04	3.78***	0.16	0.04	3.75***	0.17	0.04	3.96***	0.17	0.04	3.98***	0.16	0.04	3.69***	0.16	0.04	3.79 ***
Rate of Schooling → Grades In Facility	0.06	0.05	1.25	0.06	0.05	1.24	0.06	0.05	1.28	0.06	0.05	1.31	0.07	0.05	1.44	0.07	0.05	1.45
Time In School → Grades In Facility	0.11	0.05	2.30*	0.11	0.05	2.29*	0.11	0.05	2.36*	0.11	0.05	2.33*	0.11	0.05	2.46*	0.11	0.05	2.43 *
<b>Correlations</b>																		
Facility School Attachment And Grades In Facility	0.14	0.06	2.25*	0.14	0.06	2.22*	0.14	0.06	2.20*	0.14	0.06	2.18*	0.14	0.06	2.26*	0.14	0.06	2.26 *
Community School Attachment and Baseline Grades	0.39	0.05	7.31***	0.39	0.05	7.31***	0.38	0.05	7.28***	0.39	0.05	7.27***	0.38	0.05	7.22***	0.38	0.05	7.23 ***
<b>Latent Variables</b>																		
Facility School Attachment																		
School Orientation	0.87	0.06	14.03***	0.85	0.06	14.96***	0.86	0.05	16.63***	0.84	0.05	16.58***	0.88	0.06	15.29***	0.86	0.06	14.51 ***
Homework	0.24	0.05	5.24***	0.24	0.05	5.43***	0.24	0.05	5.41***	0.25	0.05	5.52***	0.23	0.05	4.89***	0.24	0.05	4.87 ***
Bonding With Teacher	0.55	0.05	10.27***	0.57	0.05	11.03***	0.56	0.05	11.28***	0.57	0.05	11.69***	0.54	0.05	10.26***	0.55	0.05	10.15***
Community School Attachment																		
School Orientation	0.82	0.05	16.45***	0.81	0.05	16.60***	0.82	0.05	16.88***	0.81	0.05	16.77***	0.84	0.05	17.31***	0.84	0.05	17.12***
Homework	0.38	0.05	8.31***	0.38	0.05	8.35***	0.38	0.05	8.34***	0.38	0.05	8.36***	0.38	0.05	8.43***	0.38	0.05	8.43 ***
Bonding with Teacher	0.58	0.05	12.81***	0.58	0.05	12.93***	0.58	0.05	12.93***	0.58	0.05	13.00***	0.57	0.05	12.72***	0.57	0.05	12.70***
<b>Model Fit</b>																		
CFI, SRMR	0.96		0.04	0.96		0.03	0.91		0.04	0.90		0.04						
RMSEA, (95% CI)	0.03		(0.01-0.04)	0.03		(0.01-0.04)	0.04		(0.03-0.05)	0.04		(0.03-0.05)						
SSA-BIC; AIC													11395.55	11355.93	11556.22	11516.60		

Note. N = 569. All parameter estimates are standardized. \*\*\* p < .001, \*\* p < .01, \* p < .05. ~Community Stay Models N = 548; sample was reduced to participants in either juvenile or adult facilities. For ease of interpretation, Community Stay was coded as 1 = stayed out of facility, 0 = back in facility for at least 1 month; sex was coded as 0 = male, 1 = female; facility type was coded as 0 = juvenile facility, 1 = adult facility. Due to missingness on predictor variables MLR estimation with Monte Carlo integration was used in Community Stay models which have dichotomized outcomes; only AIC and SSA-BIC model fit indices could be computed in those models.



Table 16

## Parameter Estimates for Community Outcomes Models Adjusted for Baseline School Experience and Sex with Younger Subsample

Parameters	School Attendance 6 Months			School Attendance 12 Months			Delinquency 6 Months			Delinquency 12 Months			Community Stay 6 Months			Community Stay 12 Months		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
<b>Community Outcomes</b>																		
Facility School Attachment → Outcome	0.16	0.06	2.49*	0.20	0.06	3.40***	-0.19	0.07	-2.74**	-0.22	0.07	-3.08**	0.14	0.08	1.74	0.12	0.08	1.55
Grades In Facility → Outcome	-0.04	0.06	-0.60	-0.01	0.06	-0.20	-0.08	0.07	-1.07	-0.04	0.07	-0.50	-0.04	0.08	-0.52	0.01	0.07	0.20
<b>School Attachment History</b>																		
Community School Attachment → Facility School Attachment	0.52	0.08	6.96***	0.53	0.07	7.11***	0.53	0.08	7.04***	0.53	0.08	7.09***	0.51	0.07	6.84***	0.51	0.07	6.94 ***
Baseline Grades → Grades In Facility	0.10	0.06	1.63	0.10	0.06	1.62	0.10	0.06	1.56	0.10	0.06	1.59	0.09	0.06	1.37	0.09	0.06	1.34
<b>Covariates</b>																		
Lifetime Facility Stays → Outcome	-0.11	0.06	-1.99*	-0.13	0.05	-2.34*	0.13	0.06	2.14*	0.10	0.06	1.70	-0.09	0.07	-1.31	-0.14	0.07	-2.05 *
Sex → Outcome							-0.13	0.03	-3.78***	-0.13	0.03	-3.92***						
Facility Type → Outcome													-0.13	0.07	-1.94	-0.05	0.06	-0.88
Rate of Schooling → Facility School Attachment	0.14	0.07	2.14*	0.15	0.07	2.18*	0.14	0.06	2.19*	0.14	0.06	2.20*	0.14	0.07	2.15*	0.14	0.07	2.18 *
Time In School → Facility School Attachment	0.11	0.05	2.17*	0.12	0.05	2.22*	0.12	0.05	2.20*	0.12	0.05	2.20*	0.11	0.05	2.11*	0.11	0.05	2.07 *
Rate of Schooling → Grades In Facility	0.10	0.05	1.85	0.10	0.05	1.84	0.10	0.05	1.81	0.10	0.05	1.85	0.10	0.06	1.90	0.10	0.06	1.90
Time In School → Grades In Facility	0.16	0.06	2.84**	0.16	0.06	2.83**	0.16	0.06	2.88**	0.16	0.06	2.84**	0.15	0.06	2.61**	0.15	0.06	2.61 **
<b>Correlations</b>																		
Facility School Attachment And Grades In Facility	0.17	0.09	1.98*	0.17	0.09	1.98*	0.17	0.09	2.00*	0.18	0.09	2.00*	0.16	0.09	1.82	0.16	0.09	1.87
Community School Attachment And Baseline Grades	0.36	0.07	5.27***	0.36	0.07	5.26***	0.36	0.07	5.25***	0.36	0.07	5.24***	0.37	0.07	5.36***	0.37	0.07	5.35 ***
<b>Latent Variables</b>																		
Facility School Attachment																		
School Orientation	0.89	0.07	12.92***	0.88	0.06	13.83***	0.88	0.06	14.39***	0.86	0.06	14.22***	0.90	0.06	14.81***	0.89	0.07	13.53 ***
Homework	0.24	0.06	4.14***	0.24	0.06	4.27***	0.24	0.06	4.19***	0.25	0.06	4.23***	0.22	0.06	3.72***	0.23	0.06	3.67 ***
Bonding With Teacher	0.56	0.07	8.59***	0.56	0.06	9.11***	0.56	0.06	9.06***	0.57	0.06	9.38***	0.55	0.06	8.48***	0.56	0.07	8.36 ***
Community School Attachment																		
School Orientation	0.86	0.07	12.42***	0.86	0.07	12.51***	0.86	0.07	12.87***	0.86	0.07	12.71***	0.88	0.07	12.97***	0.88	0.07	12.72 ***
Homework	0.36	0.07	5.47***	0.36	0.07	5.53***	0.36	0.07	5.50***	0.36	0.07	5.53***	0.35	0.06	5.48***	0.35	0.06	5.50 ***
Bonding with Teacher	0.52	0.06	9.24***	0.53	0.06	9.30***	0.52	0.06	9.39***	0.52	0.06	9.43***	0.52	0.06	9.02***	0.52	0.06	9.02 ***
<b>Model Fit</b>																		
CFI, SRMR	0.97		0.05	0.96		0.05	0.93		0.05	0.93		0.05						
RMSEA, (95% CI)	0.03		(0.00-0.05)	0.03		(0.00-0.05)	0.04		(0.01-0.05)	0.04		(0.01-0.05)						
SSA-BIC; AIC													6397.83	6379.19	6465.50	6446.87		

Note. N = 310. All parameter estimates are standardized. \*\*\* p<.001, \*\* p<.01, \* p<.05. ~Community Stay Models N = 300; sample was reduced to participants in either juvenile or adult facilities. For ease of interpretation, Community Stay was coded as 1 = stayed out of facility, 0 = back in facility for at least 1 month; sex was coded as 0 = male, 1 = female; facility type was coded as 0 = juvenile facility, 1 = adult facility. Due to missingness on predictor variables MLR estimation with Montecarlo integration was used in Community Stay models which have dichotomized outcomes; only AIC and SSA-BIC model fit indices could be computed in those models.

Table 17

Parameter Estimates For Path Models Predicting Community Adjustment by Different Types of Gainful Activity

Parameter	Full Study Sample						Younger Study Sample					
	Gainful Activity And Delinquency (N=569)			Gainful Activity And Community Stay (N=548)			School Attendance And Delinquency (N=310)			School Attendance And Community Stay (N=300)		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
<b>Community Outcomes</b>												
Gainful Activity 1-6 → Community Adjustment Months 7-12	-0.03	0.05	-0.75	0.18	0.05	3.72***	-0.11	0.05	-2.28*	0.18	0.06	2.79**
School Attachment → Gainful Activity	0.14	0.05	2.85**	0.14	0.05	2.83**	0.16	0.06	2.49*	0.14	0.06	2.20*
Grades In Facility → Outcome	0.01	0.05	0.16	0.01	0.05	0.09	-0.04	0.06	-0.60	-0.03	0.06	-0.42
<b>School Attachment History</b>												
Community School Attachment → Facility School Attachment	0.44	0.06	7.65***	0.43	0.06	7.37***	0.52	0.08	6.96***	0.52	0.08	6.89***
Baseline Grades → Grades In Facility	0.11	0.05	2.48*	0.11	0.05	2.32*	0.10	0.06	1.63	0.09	0.06	1.40
<b>Covariates</b>												
Lifetime Facility Stays → Outcome	-0.10	0.05	-1.94	-0.09	0.05	-1.63	-0.11	0.06	-1.99*	-0.11	0.06	-1.88
Sex → Outcome	-0.09	0.02	-3.89***				-0.09	0.03	-3.33***			
Facility Type → Outcome				-0.07	0.05	-1.37				-0.03	0.06	-0.52
Rate of Schooling → Facility School Attachment	0.09	0.05	2.01*	0.10	0.05	2.08*	0.14	0.07	2.14*	0.15	0.07	2.28*
Time In School → Facility School Attachment	0.16	0.04	3.78***	0.16	0.04	3.79***	0.11	0.05	2.17*	0.12	0.05	2.18*
Rate of Schooling → Grades In Facility	0.06	0.05	1.25	0.07	0.05	1.38	0.10	0.05	1.85	0.11	0.05	1.94
Time In School → Grades In Facility	0.11	0.05	2.30*	0.11	0.05	2.40*	0.16	0.06	2.84**	0.15	0.06	2.60**
<b>Correlations</b>												
Facility School Attachment And Grades In Facility	0.14	0.06	2.25*	0.14	0.06	2.28*	0.17	0.09	1.98*	0.16	0.09	1.88
Community School Attachment And Baseline Grades	0.39	0.05	7.31***	0.38	0.05	7.21***	0.36	0.07	5.27***	0.37	0.07	5.36***
<b>Latent Variables</b>												
Facility School Attachment												
School Orientation	0.87	0.06	14.03***	0.88	0.06	13.73***	0.89	0.07	12.92***	0.89	0.07	12.70***
Homework	0.24	0.05	5.24***	0.23	0.05	4.88***	0.24	0.06	4.14***	0.23	0.06	3.74***
Bonding With Teacher	0.55	0.05	10.27***	0.54	0.05	10.04***	0.56	0.07	8.59***	0.55	0.07	8.56***
Community School Attachment												
School Orientation	0.58	0.05	12.81***	0.57	0.05	12.69***	0.52	0.06	9.24***	0.52	0.06	9.01***
Homework	0.38	0.05	8.31***	0.38	0.05	8.40***	0.36	0.07	5.47***	0.35	0.06	5.49***
Bonding with Teacher	0.82	0.05	16.45***	0.85	0.05	17.20***	0.86	0.07	12.42***	0.88	0.07	12.61***
<b>Model Fit</b>												
CFI, SRMR	0.89	0.05					0.92	0.05				
RMSEA, (95% CI)	0.04	(0.03-0.05)					0.04	(0.01-0.05)				
SSA-BIC; AIC				12014.36	11971.35					6673.58	6653.35	

Note. All parameters are standardized. For ease of interpretation, Community Stay was coded as 1 = stayed out of facility, 0 = back in facility for at least 1 month. Due to missingness on predictor variables MLR estimation with Montecarlo integration was used in all models; only AIC and SSA-BIC model fit indices could be computed in those models. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

## Discussion

One common part of the incarceration experience for juvenile offenders across different systems and facility types is the obligation to go to school and receive correctional education. A wealth of research demonstrates that increased academic achievement, attending community school, and being employed are connected to desistance from future offending and better community outcomes for juvenile offenders. Until recently, most research has treated incarceration as a binary variable and the perspectives of juvenile offenders in institutional settings have largely been ignored. Consequently, little is known about how these positive community outcomes are influenced by experiences while incarcerated. In contrast, the present study viewed incarceration as both a context where adolescent development happens and an intervention aimed to modify antisocial behavior upon return to the community. In a novel application of the life-course theory of the development of crime (Sampson & Laub, 1997, 2005), this study investigated how different aspects of correctional education serve as a turning point to influence a number of community adjustment outcomes among male and female serious juvenile offenders, thus attempting to close some significant gaps in knowledge.

Specifically, the present study tested whether the quality of subjective (teacher bonding and school orientation) and objective (grades, time spent in institutional school) school experience during an institutional stay was related to transitioning to community schools (attendance), and/or work (gainful activity and employment), self-reported anti-social behavior after release and re-admittance into a secure facility. Furthermore, by taking into account previous community school experiences, institutionalization history, and age at transition back into the community, the present study also acknowledged that the successful transition back into

school and work environments is further influenced by developmental stage and the individual history of the returning offenders.

Results showed that for both male and female offenders, improved attachment to the facility school while incarcerated predicted better community adjustment in the form of increased involvement in gainful activity and decreases in self-reported delinquency over the first 12 months after release, supporting the life-course theory of crime notion that the incarceration experience serves as an individual turning point. Furthermore, the positive effect of increased attachment to the facility school was particularly robust for younger offenders who returned to school, even when accounting for the number of previous facility stays and previous community school experiences. Conversely, older offenders who returned to gainful employment showed fewer positive adjustment effects. Results showed that individual community school history influenced responses to correctional education, and higher school attachment in the community prior to incarceration was associated with higher school attachment in the facility across all models. While the association was much weaker, higher grades in the community prior to incarceration predicted better performance in the facility school, at least in the full sample. In line with these findings and in contrast to other studies, grades received while incarcerated, although positively correlated with attachment to the facility school, did not predict community adjustment in the present sample.

Overall, the results repeatedly showed behavioral differences based on individual history and experience during incarceration across different types of facilities, strongly supporting a future research agenda that goes beyond treating incarceration as a binary variable. The present results thus add to mounting evidence that the individual experiences of the incarcerated juveniles matter. Further, these data suggest that relationships with teachers and school

orientation while incarcerated matters a great deal, indicating resources should be directed to this aspect of the institution.

In the remainder of the discussion I will discuss the most important findings in detail, followed by an analysis of limitations, and recommendations for research, policy, and practice.

### **Attachment to Facility School and Community Outcomes**

Findings showed a relation between attachment to the facility school while incarcerated and several indicators of adjustment in the community, including more gainful activity, less self-reported delinquency, and a higher likelihood of staying in the community. This finding is supported by qualitative studies showing that juvenile offenders with a high buy-in to treatment programs, or those who report positive interactions with staff and even see them as mentors, also tend to report more concrete plans for a successful community reentry (L. S. Abrams, 2006a, 2006b). Similarly, a qualitative study by Reed and Wexler (2014) showed that students in facility schools felt they could detect whether a teacher cared about them, and how that was connected to increased motivation. In the present study as well, the personal attachment to school was comprised of a combination of positive teacher relationships and two motivational indicators: school orientation, which measured attitudes towards school, and amount of time spent on homework, which measured a behavioral investment in school. Taken together this school attachment stood apart and trumped self-reported performance in predicting adjustment back in the community.

**Differences by age, facility type, and sex.** The present study investigated the meaning of a successful transition into the community for juvenile offenders spanning late adolescence to emerging adulthood. Splitting the sample into offenders who were still minors when released versus legal adults revealed several important age-related differences in outcomes and

background. Mainly, analyses confirmed that younger offenders were more likely to have been enrolled in school and to return to school, while older offenders were more likely to engage in work upon return into the community. The younger subsample also reported more overall delinquency and was less likely to remain in the community. This pattern of findings, according to theories of adolescent delinquency, can be seen as a replication of the age-crime curve, when even most serious juvenile offenders tend to desist from future offending (Moffitt, 1993; Mulvey et al., 2004; Siennick & Osgood, 2008).

Though the distribution revealed some significant site differences, age was confounded with staying in adult versus juvenile facilities and the study population in adult facilities was older compared to those in juvenile facilities. As expected, the incarceration experience differed significantly by facility type, and offenders in a juvenile facility reported a more positive and therapeutic environment overall with more services available to them. Offenders in adult facilities also received fewer school sessions, were seldom graded, and reported no involvement in any extracurricular activities overall. This confirms other research reporting on conditions in adult jails and the comparatively more detrimental effect of spending time in adult facilities for juvenile offenders (Lambie & Randell, 2013; Redding, 2008). Despite these differences in service delivery, multiple group comparisons showed that there were no differences in the construct of attachment to the facility school. Even more interestingly, there were few differences in community outcomes by type of facility, and the majority of those could be attributable solely to age differences. However, in contrast to the findings that older returning offenders engaged in less self-reported delinquency and were overall more likely to remain in the community, offenders returning from adult facilities were still less likely to remain in the community, suggesting that there might be labeling effects (Bernburg et al., 2006; Sampson &

Laub, 1997). Further, it is notable that while there were even bigger gaps for offenders in adult facilities, there were big average differences between length of stay in the facility and how much time participants spent in the facility school for the entire sample, suggesting major gaps in the delivery of correctional education for all offenders.

Despite their comparatively small numbers, we included girls in our sample to further the knowledge base on this gravely under-researched population. While there were differences in mean levels of involvement in delinquency and likelihood of being readmitted into a facility, with girls showing less risk on both of these measures relative to boys, our results revealed no indications of differences in the relation between school experience and outcomes by sex beyond overall differences in prevalence of outcomes. These findings are consistent with other research investigating sex differences in reoffending (e.g. Barrett, Katsiyannis, & Zhang, 2010).

**Self-reported delinquency and stay in community.** While there were differences in outcomes across the different subsamples, for all offenders there was a consistent pattern of higher attachment to the facility school leading to reductions in self-reported delinquency upon return to the community. It is important to note that while self-reported delinquency and stay in community were correlated, the correlations were comparatively low in magnitude, especially for the older sample (see Tables 4-6, respectively). It is thus not overly surprising that the reduction in self-reported delinquency associated with higher facility school attachment did not translate into an increased probability of staying in the community when adjusting for other factors. Reduction in self-reported delinquency also was not connected to an increase in finding employment for the older subsample. Conversely, reporting more gainful activity in the community did not lead to reductions in self-reported delinquency in the full sample. However, those returning offenders who managed to find work or attended school had much improved

odds of remaining in the community across both the younger and older subsamples. One interpretation of this pattern of findings is that regardless of personal behavior, offenders whose daytime hours are accounted for might be less likely to be stopped by police or scrutinized by parole officers, for example for loitering, regardless of their actual levels of involvement in delinquent activities (Grattet, Lin, & Petersilia, 2011; Parker et al., 2010). Furthermore, for some offenders, failure to work or attend school might constitute a violation of their parole which might even be the sole cause for re-institutionalization (Archwamety & Katsiyannis, 2000). Whatever the explanation, the present findings expose the complicated relation and important difference between measures of self-reported behavior and measures of system response when investigating recidivism (Ostermann et al., 2015).

**Employment outcomes.** The present study shows that in the younger subsample improved attachment to the facility school predicted more school attendance and less self-reported delinquency six months and 12 months after release. Moreover, this positive effect held even when accounting for previous community school experience and number of previous facility stays. Furthermore, more school attendance in the first six months was associated with lower levels of self-reported delinquency and markedly increased chances of remaining in the community. In the full sample and across both subsamples, attachment to the facility school had a protective effect on self-reported offending, indicating that an increased attachment to the facility school reduced the likelihood of delinquent behavior, making it plausible that it was associated with an increased motivation to do better, succeed academically and otherwise, and desist from future offending among all juvenile offenders. This interpretation is in accordance with qualitative studies that showed that the incarceration experience instills a strong desire to



move towards desistance among current residents of correctional facilities (L. S. Abrams, 2012; Ashkar & Kenny, 2008; Unruh, Povenmire-Kirk, & Yamamoto, 2009).

However, despite the motivation to change in the aforementioned ways, research with offenders also repeatedly documents that the experience of incarceration nevertheless fails to provide juvenile offenders with the internal confidence, practical skills, or sense of social support necessary to achieve and sustain such a change. Over and over offender participants in qualitative studies discuss how the facility experience matters in building a readiness for positive change, but that they feel that the connection between goals and action steps is not spelled out (L. S. Abrams, 2006a, 2012; Clinkinbeard & Zohra, 2012). In their eyes, the programming received while incarcerated falls short by failing to delineate concrete strategies for how to implement that change into life in the community. Similarly, increased school performance or attachment to school did not manifest in an increased likelihood of employment activities in the older subsample in the current study. Furthermore, overall only a very low percentage of older offenders managed to maintain work activity upon return into their communities.

These results are supported by a NLSY (1997) study estimating the impact of incarceration during late adolescence and early adulthood on short- and long-term employment outcomes (Apel & Sweeten, 2010). The authors showed that rather than simply failing to find work after release, ex-inmates were less likely to be looking for work compared to convicted but non-incarcerated individuals. While we could not directly investigate the reasons for non-participation in gainful activity in the present study due to the non-availability of these data, our results are consistent with the hypothesis that this might be a result of discouragement and structural barriers rather than reflecting idleness (Apel & Sweeten, 2010). For example, it has been suggested that one such barrier might be that incarceration erodes relationships to

neighborhood associates who otherwise might have provided a reference to prospective employers (Western, 2002). In addition, it is possible that perceived rather than actual barriers lead to disengagement from the employment process. For example, fear of rejection by future employers due to the stigma of incarceration might be enough to deter returning juvenile offenders from making an effort to find employment - even for those returning offenders who have been processed in the juvenile system and thus do not have a criminal record that would subject them to the labeling consequences of an adult conviction (Apel & Sweeten, 2010). Importantly, in the current study, additional analyses with the older subsample revealed that Blacks and Hispanics had an even lower chance of being employed, while there were no such differences in levels of self-reported delinquency or school attendance. Furthermore, multiple group comparisons with the full sample revealed no differences by race/ethnicity on the composition of school attachment or any of the other relationships. This finding documents an exacerbated risk of remaining unemployed for the group of minority offenders and points to a systematic difference in access to resources, which is consistent with other studies that have found positive associations between neighborhood characteristics of minority concentration, unemployment, and poverty, and reentry success of returning juvenile offenders (L. S. Abrams & Freisthler, 2010). The fact that this effect of race/ethnicity was specific to employment and was not present for the other outcomes again highlights the cumulative disadvantage faced by minority individuals (Rodriguez, 2013; Sampson & Laub, 1997).

Alternatively, in the absence of concrete work placements immediately after release, it might simply take too long to establish the contacts necessary to get involved in employment. It is well known that the first few months of community reentry are a critical time period for youth offenders, since they need to establish routines and support systems that can help them to reduce

the likelihood of recidivism (L. S. Abrams, 2006a). Perhaps by the time the returning offenders succeed in securing employment, the positive effects of an increased attachment to the facility school are diluted. Finally, older returning offenders, especially those who are young men of color, might be more focused on immediate financial and physical survival than finding legitimate work, because as well as facing a higher likelihood of re-incarceration, they are at an increased risk for violent victimization and premature mortality (L. S. Abrams & Terry, 2014).

### **A Developmental Perspective on Returning to School versus Working**

Applying a developmental life-course perspective highlights several additional possible explanations for the discrepancy in results for the older and younger subsamples and between going back to school versus finding employment.

One explanation is that going back to school is both a developmentally appropriate and a straightforward way of acting upon the instilled motivation to change when returning to the community that is not subject to discrimination. In this interpretation, attachment to the facility school might simply translate more readily into the concrete strategy of enrolling and going back to high school for all younger offenders who are still within the age range of admissibility. On the other hand, older returning offenders either are no longer eligible to go back to high school or would be markedly older than other students. If older returning offenders are not eligible to return to high school the option to act upon their increased school orientation is barred; if older returning offenders can return to high school but are considerably older than their classmates, this promises at best to be a rocky integration into the high school peer culture and transforms the school environment from a developmentally normative context to a very different experience (Erikson, 1993). It is reasonable to assume that this constitutes a severe obstacle to re-enrollment for older offenders, even if it was still open. Consequently, while likely increasing motivation to

stay out of trouble and reduce self-reported delinquency in a similar way across the entire sample, attachment to the facility school might prepare older adolescents, for whom a return to high school is barred, inadequately for finding and taking on a job.

Additionally, given that returning offenders would most likely have to start out in the low-skill job market, higher attachment to school and better grades might even cause them to have unrealistically high expectations about their employment potential and might thus undermine their motivation to commit to existing employment opportunities (Apel & Sweeten, 2010).

Another explanation for the difference in findings across younger and older subsamples of offenders is highlighted when focusing on the ability of school versus work outcomes to satisfy developmental needs of the returning adolescents and young adults. It is known that young offenders reentering the community often face difficulty both finding and partaking in recreational activities that are positive (Altschuler & Brash, 2004). This is especially true for youth recovering from drug or alcohol abuse who often have little experience filling their time with activities that do not involve being high (Altschuler & Brash, 2004; Todis et al., 2001; Unruh et al., 2009). The incarceration experience may not help to develop this new behavior pattern. Furthermore, the most important social context for adolescents is their peer group, which also is one of the main drivers of adolescent delinquency (Gatti et al., 2009). Thus, it is not surprising that a meta-analysis concluded that among the strongest predictors of juvenile recidivism are family problems, ineffective use of leisure time, and association with delinquent peers (Cottle et al., 2001).

Conversely, successful reentry repeatedly has been connected to forming friendships and spending time with peers who were not involved in crime (L. S. Abrams, 2006a, 2006b;

Altschuler & Brash, 2004; Inderbitzin, 2009; Todis et al., 2001; Unruh et al., 2009).

Unequivocally, it is recognized that school provides a significant amount of time in a structured environment and thus reduces recidivism (Anderson, 2014; Bullis & Yovanoff, 2002). Beyond that however, school also offers access to a large number of peers to connect with who have positive values, and thus facilitates transformation on a personal and social level. Ideally, it offers options to participate in extracurricular activities, explore other identities, engage in hobbies, and connect with peers who are involved in similar positive interests.

In summary, school offers not only an investment into a positive future through education; it also offers access to a peer group that shares positive values, hobbies, and interests beyond the classroom. As recognized by the young offenders themselves in several qualitative studies, school offers a chance at a new group of friends and a better way to spend leisure time (L. S. Abrams, 2006a; Todis et al., 2001; Unruh et al., 2009). Starting over in a new school or returning to a community school with new self-esteem provides the most complete opportunity to transform both “professional” and social life, opening a way back into being a “normal” adolescent and thus providing an effective path to desistance.

This access, or the lack thereof, might be of exacerbated importance for emerging adults returning to the community. It is well established that especially younger adolescents are sensitive to short-term rewards and have trouble with long-term strategies (Steinberg & Scott, 2003). A recent longitudinal study of serious juvenile offenders (Dmitrieva et al., 2012) showed stunted short-term growth in psychosocial maturity among individuals incarcerated in a secure facility, especially among older adolescents. Furthermore, it has been documented that especially youth who have been incarcerated often or for a longer period of time, feel behind in their social development and suffer from anxiety about blending in and making “normal” friends (L. S.

Abrams, 2006a). This might indicate that returning offenders who chronologically are emerging adults might still function at the developmental level of younger adolescents, that is are still highly susceptible to peer group influences, are still prone to thrill-seeking, and lag behind in their capability for long-term planning relative to their normative peers who are by then transitioning into college and employment environments (Albert & Steinberg, 2011; Altschuler & Brash, 2004; Arnett, 2000). In other words, despite having aged out of normal high school, they might still be in high need of a similar structured positive environment that offers not only a gainful occupation but access to a positive community of peers, access to sports and other extracurricular activities that provide positive opportunities for thrill-seeking and identity exploration in structured leisure time, and a possible connection to caring adults.

Private social bonds, such as a romantic relationship and parenthood, are powerful mechanisms to keep ex-offender adults engaged in employment (Huebner, 2005; Wiesner, Capaldi, & Kim, 2010). For example, using event history analysis, researchers found that recent cohabitation/marriage significantly decreased the risk of job-loss in at-risk emerging adults from an Oregon sample, supporting the theory that strong social ties to the family increase compliance with work intervention programs (Wiesner et al., 2010). Conversely, however, the work environment might not (yet) provide a social anchor of that nature for adolescents and emerging adults who are still at a lower level of maturity and live outside of such relationships. A low-wage job without much chance of advancement might help achieve financial independence and thus constitute a desired milestone towards responsible adulthood (Apel & Sweeten, 2010; Unruh et al., 2009; Wiesner et al., 2010), but it does not exactly facilitate positive social relationships with peers or mentors. While school automatically connects students to a large group of peers, colleagues in the work environment most likely are smaller in numbers and might

come from a wide age range. In combination with the social insecurity described in some qualitative studies (L. S. Abrams, 2006a, 2012), this likely increases the difficulty in establishing a new social circle and makes youth more likely to revert to their old peer group and thus their old behavioral patterns (L. S. Abrams, 2006b; Bullis & Yovanoff, 2002; Todis et al., 2001; Unruh et al., 2009). Simultaneously, it has been suggested that the monotonous nature of low-wage employment might even increase a desire to earn illicit money, which usually also satisfies more thrill-seeking desires (Altschuler & Brash, 2004). Together this might outweigh any benefits associated with a legitimate workplace, especially for those adolescents who are still concentrating on short-term rewards over long-term consequences.

In summary, theory suggests and data indicate that the work environment alone fails to provide the needed positive social relationships of both peers and mentors, as well as the structure the returning young adult offenders likely would need. More research is needed urgently, but these factors might explain why work placement programs are not effective for emerging adults, even though they show promise for adults (Huebner, 2005; Uggen, 2000).

In conclusion, the present results showed that returning young adult offenders might be an especially vulnerable population that is currently inadequately served by re-integration efforts that either are designed for juveniles or adults. This is in accordance other studies showing low success rates among young adult offenders (Huebner, 2005; Uggen, 2000) and suggest that existing programs repeatedly “miss the mark” in meeting their special developmental needs and thus set them up for an increased risk of re-incarceration and a continuing embeddedness in a life of crime.

## **Academic Performance and Community Adjustment**

Interestingly, in the present study, while grades and attachment to the facility school were correlated, grades were not related to any of the outcomes in the full sample or the younger or older subsamples. These findings contrast with findings from another study with a large sample of juvenile offenders that showed a positive relation between academic achievement while incarcerated and community school attendance (Blomberg et al., 2011, 2012; Cavendish, 2014). However, in all previous studies, grades or other measures of academic performance were investigated in isolation; subjective aspects of schooling, such as teacher bonding or school orientation were not assessed. The present results thus likely indicate that while grades are one factor of the school experience, when taken into account simultaneously, the subjective aspects of the facility school experience are relatively more important in predicting future community adjustment. Furthermore, the comparatively short time spent in the facility school (on average only 5 months) might not provide students with enough time to catch up in a way that is reflected in a gain in grades, while a change in motivation and building positive relationships would show comparatively more immediate effects. This interpretation is supported by a recent meta-analysis of teacher-student relationships and school engagement and performance in the general student population (Roorda et al., 2011). Roorda and colleagues found that the magnitude of associations of both positive and negative relationships with teachers and school engagement was larger than the magnitude of association between relationships with teachers and achievement (Roorda et al., 2011).

Another possible explanation for the lack of connection between grades and community outcomes is that grades might not be an accurate measurement of true performance in the facility schools. For example, focus-group data from a recent study in a secure facility revealed that



students received no significant feedback on their work and often were left clueless as to what was expected of them, but received high marks as long as they handed in completed work packages (Reed & Wexler, 2014). Moreover, classroom observations in the same study revealed that teachers would even mark worksheets filled in at random as completed satisfactorily. Interestingly those incarcerated students described a caring teacher as someone who expected high achievement and kept pushing the students to complete even difficult tasks (Reed & Wexler, 2014). Taken together, these findings might provide another explanation for why grades were neither a good predictor of community school adjustment post release nor highly correlated with attachment to the facility school in the present study. Furthermore, in the present study, there was low consistency between grades in community schools and grades while incarcerated, and there was no relation between these two constructs in the adjusted model for the younger participants in the study. Mean levels of performance were much higher in the facility, while facility comparisons revealed that 45% of offenders in adult facilities did not receive any grades. Taken together, this raises concerns about the validity of grades received while in a facility, not only in the present study. Ideally, the higher grades in the facility schools would be a reflection of individual gains in the more personalized environment of a detention school. However, it could also be an indicator that grading was not taken very seriously in this environment and more studies with standardized performance measures are needed to investigate the importance of gains and overall levels of facility school performance and subsequent community adjustment.

### **Limitations**

There were several limitations to the present study. Three of them are shared by all studies attempting to investigate juvenile offending for they are connected intrinsically to the special political and structural nature of the juvenile justice system and the issues that are dealt

with within it. First, per definition, there are no objective measures of severe delinquent behaviors that would not have labeling consequences; all comparisons between offenders and youth not affected by the juvenile justice system thus have to rely on self-reports of (hidden) anti-social behaviors. Second, delinquency is a social construct that qualifies a certain behavior as deviant; it is not an objective behavior. Frameworks of cumulative disadvantage and labeling theory provide explanations for the biases that lead to disproportionate minority contact and remind us that police and court records are neither an objective nor accurate reflection of behavior, especially not of general tendencies in behavior (L. D. Moore & Elkavich, 2008; Rodriguez, 2013; Sampson & Laub, 2005). However, there are no good ways to account for those distortions and the field primarily still relies on official records to evaluate itself. Finally, there is no common definition of recidivism and the term can encompass anything including being re-arrested, re-charged with an offense, being re-convicted (i.e. charged and found guilty, i.e. adjudicated for an offense), or sent back to a facility. Such numbers generally exclude self-reports of delinquent or anti-social behavior, suggesting that actual engagement in delinquent behavior is higher than suggested by such estimates (Snyder & Sickmund, 2006). In the present study, re-admittance into a facility included all residential placements, i.e. substance use and other mental health treatment facilities. We did not measure re-arrest nor could we account for processing time between the occurrence of a delinquent act and the actual beginning of a stay in a secure facility. As in other studies, it was impossible to connect readmittance into a secure facility to a concrete delinquent act and it is thus possible that youth were readmitted into a facility for actions that occurred even before their last incarceration. For all those reasons, reliable estimates on rates of recidivisms and on other effects of incarceration are difficult to

obtain and it is difficult to compare the present study results across localities and samples (Snyder & Sickmund, 2006).

To offset the disadvantage recidivism measures of system contact, this study relied on self-reports of delinquency and other outcome measures. While necessary and appropriate when studying individual perceptions of the facility experience, it cannot be excluded that the outcome measures were biased by social desirability and that respondents reported more engagement in positive behaviors while underreporting their engagement in delinquent activities. However, we think that while fraught with the potential reporting bias of all self-report measures, the delinquency measures in the present study still present a more accurate estimate of actual behavior than other measures of recidivism. Additionally, the consistent relationships of attachment to the facility school and both self-reported delinquency and transfer back into a facility increases confidence in the validity of the outcome measures, despite the limitations inherent in each separate approach.

The obligation to provide correctional education is one important unifying factor across different systems and facilities housing juveniles, but the concentration on facility school experience is also connected to several important limitations of this study. This is the first time a study has attempted to capture different facets of the facility school experience and the generalizability of the findings are limited by the choice of specific modeling approach, measurement of the experience and sample composition:

We used a combination of factor analysis results and theoretical justifications build the latent construct of facility school attachment and model grades as a correlated but separate manifest variable. It cannot be excluded however, that both the low correlation of grades with the other measures of facility school experience and the lack of association with any outcomes are

due to the measurement of that variable: Self-report, low variance, and high amount of missing values that were non-randomly associated with stay in an adult facility makes it possible that we were not able to detect the true relationship of school performance to facility school attachment and adjustment in the community. Furthermore, as discussed above, there are widespread concerns about the quality of instruction and thus accuracy of grades received while in a secure facility (RAND Corporation, 2014; Reed & Wexler, 2014). While we thus acknowledge the poor measurement of school performance as an important limitation of our results, it is a true reflection of the status of correctional education in the United States and it provides support for our modeling approach of investigating the contribution of facility school attachment separately.

Another limitation of the present sample is that racial/ethnic composition, facility type and study site were confounded in a way that made it impossible to isolate effects of each one of those variables independently. While we included multiple group comparisons for each of those indicators, it cannot be excluded that effects of ethnicity went undetected in this sample. We tried to capture systematic differences between treatment approaches by concentrating on moderation by stay in an adult versus juvenile facility, since such differences would likely have the most immediate effect on school experience. The site difference we did find was most likely due to the difference in assignment of grades in adult facilities in Phoenix, and since the facility type analyses did not show similar differences we did not include site as a covariate in our final models. However, more studies with different samples are needed to investigate the contributions of individual experiences within and between facilities of the same type, of differences in service delivery (such as accreditation of facility schools, mandate to participate in standardized testing or provide grades, etc.) by justice systems and of effects of race/ethnicity on both facility school experience and outcomes.

Finally, schooling is only one aspect of being incarcerated. Other important aspects of that experience include the level of services available, the feeling of overall safety within the facility, and the treatment orientation of the program, all of which have been shown to influence adjustment back in the community in the same sample (Schubert et al., 2012) and in samples from Europe (van der Helm et al., 2009). Future research should thus encompass all aspects of the facility experience to further disentangle the relative importance and relationship between different aspects of the individual facility experience.

Related to the limitation above, we did not assess the availability and influence of other treatment services received, either while incarcerated or in the community. Similarly, we did not account for previous and current mental health status or substance abuse problems. Specifically, experiencing trauma both before and while incarcerated impacts adjustment in the community after release (Boxer et al., 2009; Kubiak, 2004; MacKenzie et al., 2001; H. W. Wilson et al., 2013) and therefore assessments of trauma should be incorporated in future studies of community reentry in that population. Similarly, given the high risk of recidivism for delinquents with substance abuse problems, future studies should account for that important confounder of transition success, either by controlling for substance abuse or examining how having a substance abuse problem moderates predictors of transition success.

The strongest factor in the attachment to the facility school construct was school orientation. While we did control for baseline levels of attachment to community school (e.g., attachments youth had to school prior to their facility stay under investigation), it may be the case that rather than representing an effect of attending the correctional school, offenders' attachment to the facility school largely was influenced by values that were formed by events prior to or outside of the facility school experience, such as relationships with parents, contact

with counselors at home, or other factors. For example, it is not known if the type of schooling (GED versus high school diploma), which appeared as an important issue in a recent qualitative study (Reed & Wexler, 2014), influenced school orientation in the present sample. In that investigation, a high 72% of juvenile offenders who currently were working towards a GED reported preferring to earn a regular high school degree over a GED. Similarly, while we tested for racial/ethnic differences in our analyses, we did not assess the possible influence of acculturation, speaking English as a second language, or being a minority within a minority (i.e. being Latino in a sample of predominantly Hispanic students versus within a sample of predominantly African American students) on school orientation, performance and subsequent adjustment. In other words, while the present study demonstrates the importance of attachment to school and especially school orientation in predicting success after release, more research is needed to explain how exactly to promote a positive school orientation and positive student-teacher relationships with incarcerated students. This issue is not well documented in the general population (Sander et al., 2010), and research in correctional education is urgently needed.

While employment outcomes included both legal work and “under the table” employment, the current study did not assess frequency and role of engagement in domestic work such as providing childcare. Finally, given the very low numbers of offenders attending college in the current sample (only 5.6% ever enrolled in college classes) we could not investigate the protective effect of college attendance versus employment for the older subsample. However, since there is some evidence that the protective effect of higher education is stronger for individuals who were more delinquent during adolescence (Ford & Schroeder, 2010), it would be interesting for future studies to address this issue.

## **Implications for Research, Policy and Practice**

**Implications for research.** The present study has several important implications for future research on the successful transition of juvenile offenders back into community school and work environments. Most importantly, it demonstrates the necessity and practical utility of applying a developmental perspective to the study of juvenile offending and the effects of incarceration. Such a perspective acknowledges incarceration as both a context of development and an intervention that acts upon future behavior. Thus, rather than treating incarceration as a black box, future research should try to understand how subjective differences in that experience impact the future adjustment of juvenile, emerging adult, and adult offenders. In short, beyond presenting a very useful theoretical stance, the current study underscores the practical value of taking the client-perspective of incarcerated juveniles into account. The results evidenced that individual perceptions of the facility experience, specifically the attachment to the facility school, influenced several community outcomes across sex and different facility types.

The present results indicate that future studies of correctional education should include measures beyond school performance, as this might not be the main driver of post-release school attendance and adjustment. These results are reinforced by findings from another study with the same sample that found that affectively laden aspects of the facility experience were the most important predictors of self-reported delinquency after release (Schubert et al., 2012).

The current study also confirmed that returning to work or school are not the same for different age groups. Therefore, investigating community placements within a framework of developmentally important properties of different contexts may be a promising avenue for future theory and research. The present results further underscore the need for more research to fully understand whether and how maturation processes interact with effectiveness of transition

services and school and work placement programs. A recent study using the male participants of the Pathways to Desistance dataset further supports the idea that delays in psychosocial maturation play an important role in the cumulative negative effects of juvenile incarceration and institutionalization in general (Dmitrieva et al., 2012). Despite accumulating knowledge on the effects of juvenile incarceration, the field has just begun to integrate an understanding of developmental mechanisms into this body of research. More data on the nature of the incarceration experience across different facilities (institutional climate, availability of counseling, mental health treatment, vocational and other transitional services) and on interactions of type and duration of the experience with age and personal maturity level across different samples are direly needed.

Studies of how to increase the effectiveness of re-entry programs is another area ripe for research. These studies might assess the added value of assisting returning offenders in connecting to positive social groups, like sports clubs or faith-based organizations in addition to facilitating school or job placements.

Finally, the difference in findings between self-reported delinquency and returning to an institutional setting highlights the problems inherent with measuring recidivism as system contact, and future research on recidivism could benefit from combining official reports of system contact with self-reported measures of delinquent behavior.

**Implications for policy and practice.** The current study has several important practical and policy implications. First and foremost, it shows that levels of school orientation and bonding with teachers influences post-release adjustment of serious juvenile offenders. For practitioners and policy-makers alike this means that the facility school climate matters, and investment in programming that focuses on increasing motivation to continue education pays off



-even among youth that have been disengaged and have struggled in school before. In a textbook example of structural disadvantage theory, examination of community school history showed that there was an extremely low level of school services received in the community for the juvenile offenders in the present study, despite overall high levels of previous school failure, intellectual functioning well below population average, and low grades. In addition, these to-be offenders mainly had disengaged from school, with fewer than half involved in any extracurricular activities and a large majority who spent little or no time on homework prior to their incarceration.

The present results also highlight the importance of resident-staff relationships over pure indicators of performance which might be flawed. Therefore, future interventions should concentrate on ways to improve the attachment to school of especially younger juvenile offenders while incarcerated. Furthermore, continued evaluation that takes into account the voices of the correctional students seems both promising and warranted in order to further our understanding on how attachment to facility schools and community adjustment can be improved. In addition, even if successful, a wealth of qualitative data shows that simply increasing attachment to facility schools might not be enough. It also is necessary to make sure that the rehabilitative programming and institutional experience not only instills the desire to go back to school, refrain from future offending, and become a productive member of society, but concretely supports the young offenders in implementing and sustaining this change. Thus, it seems that correctional education done right presents an important opportunity to connect juvenile offenders back to a normative context of development. Therefore, the present findings also underscore the importance of investing into all efforts that streamline this connection, such as transferrable credits, seamless enrollment back in community schools, or even opportunities to

participate in community education while incarcerated in order to fully capitalize on this positive turning point.

One way of introducing this positive turning point while in the facility might be offering extracurricular activities. It could not be tested directly in the current sample due to low numbers, but there was some evidence that this might be a powerful way to engage juvenile offenders. Among those who were involved in activities while incarcerated, almost half (47%) reported their participation in those activities as very important to them. While this might be a selection effect, the combination of comparatively higher rates of previous engagement in activities in the community, low correlations to the other school engagement variables, and extremely low number of participants involved in activities in the adult facilities make it more likely that the low rate of participants reporting involvement in activities represents a lack of opportunity. The high engagement of those who were involved might thus indicate a missed opportunity for the juveniles to discover new skills that might empower them and increase attachment to positive community contexts beyond school by facilitating contact with older peers who have left school but still participate in the same hobbies. One example of a strategy that connects offenders with positive peers are co-teaching models, where regular college classes are held in jails and prisons for both regular college students and inmates. One program using this dual enrollment approach is the OPEN MINDS program in Richmond, VA that offers a variety of class subjects such as autobiographic writing or religious studies in a service-learning framework where regular college students and jail inmates meet in a shared classroom (Coogan, Belton, & Black, 2015; [www.openminds.vcu.edu](http://www.openminds.vcu.edu)). In addition to offering practice in exchanges with positive peers, such programs might also lower barriers for college enrollment upon return into the community for the participating offenders.

Research has shown several promising ways to improve after-care outcomes. For example, a recent meta-analysis of reentry programs for juvenile and young adult offenders showed that aftercare is most effective if it consists of individual treatment, and is aimed at older and high-risk youth (James et al., 2013). Similarly, Lipsey (2009) confirmed in another meta-analysis that a “therapeutic” intervention philosophy and serving high-risk offenders was associated with program success. Families repeatedly emerge as primary provider of social stability for returning ex-offenders; but also as sources of persistent negative influence if they are connected to substance use or crime patterns (L. S. Abrams, 2006a, 2012). One promising way to support positive change while incarcerated is to involve families into treatment and reentry planning and encourage visitation. Across different studies, juveniles receiving more family visitation had fewer institutional charges and better grades (Agudelo, 2013) and showed reductions in depressive symptoms regardless of relationship quality with the visiting parent (Monahan, Goldweber, & Cauffman, 2011). While the above studies did not assess these outcomes, it seems plausible that improved grades also are an indicator of a more positive attitude towards school and increased motivation overall. Another example are mentorship programs that allow offending juveniles to get in touch with positive community members (R. H. Moore, 1987). Despite some promising results of such interventions, a recent literature review concluded that an overall absence of detailed information on the interventions, weak research designs, and the diversity of the mentoring programs unfortunately means that there is still a dearth of knowledge about the effectiveness of such interventions to reduce recidivism (L. S. Abrams, Mizel, Nguyen, & Shlonsky, 2014)

The present study highlights a potentially large missed opportunity for a positive turning point: connecting older returning offenders to college. Analyses using a longitudinal, nationally

representative dataset showed that college attendance and investment in higher education were negatively associated with criminal offending in adulthood, especially for individuals who were more delinquent during adolescence (Ford & Schroeder, 2010). Despite such promising results, the vast majority of juvenile offenders never attend college. For example, among the current study sample only 5.6% enrolled in a college, and only 10% enrolled in a trade school in the follow-up period. This is similar to results from a different sample of offenders who returned to the community, in which 34.7% had not attempted any postsecondary education, and only 13.3% had completed a postsecondary program, most commonly a technical/trade school certificate (L. S. Abrams & Franke, 2013). Conversely, it is known that reentry assistance in the form of job placements and help with college and scholarship applications show promise (Bullis & Yovanoff, 2006), but more data is needed.

Returning juvenile offenders repeatedly mention fear associated with finding new friends and connecting with “normal” peers (L. S. Abrams, 2006a). The co-teaching models mentioned above are thus another promising strategy that might lower barriers for college attendance, while simultaneously connecting offenders with positive peers (Coogan et al., 2015; [www.openminds.vcu.edu](http://www.openminds.vcu.edu)), but more systematic evaluation of such programs is needed.

The final and most important implication for research, policy, and practice alike has been voiced in every literature review and meta-analysis in the field: The call for more intervention and evaluation research that includes measures and outcomes that are empirically sound and comparable across the fragmented landscape that is juvenile corrections. Next to a basic incorporation of intervention dosage (i.e., length, timing, and intensity of services), the present study shows that a careful assessment of offender perceptions of different aspects of facility climate and relationships with staff can provide a powerful unifying framework that allows for

comparisons across sites and systems. Such an evaluation agenda would advance the field significantly for the benefit of researchers, practitioners, policy makers, and the affected juveniles and young adults.

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## Vita

Lena Janina Jäggi was born on August 16, 1985 in Basel, Switzerland and is a Swiss citizen. She received her Bachelor of Law from the University of Berne, Switzerland, in 2007. After an exchange semester in Finland in 2009, she received her Master of Law in Criminology and Criminal Law from the University of Berne, Switzerland, in 2010. After earning that degree she continued to study psychology at the University of Basel, Switzerland. After relocating to Richmond, VA in 2011, she received a Master of Science in Psychology from Virginia Commonwealth University (VCU) in 2014. After passing her preliminary examination with distinction, she is currently a doctoral candidate in the Developmental Psychology Ph.D. program at VCU working with Dr. Wendy Kliever. She has research and evaluation experience working with several NGO's., universities and a state government who are providing services to juveniles and adults in diverse settings. Her research interest focuses on the public health consequences of incarceration for communities, families and individuals in different cultural settings. She has a strong interest in qualitative and advanced quantitative methods (e.g. analyzing large datasets, Structural Equation Modeling, multilevel modeling) and is interested in program evaluation in the context of trauma exposure, aggressive behavior, violence, and delinquency prevention for youth.