

Inside the Prison Black Box: Toward a Life Course Importation Model of Inmate Behavior

International Journal of
Offender Therapy and
Comparative Criminology
55(8) 1186–1207

© 2011 SAGE Publications
Reprints and permission:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0306624X11383956
<http://ijo.sagepub.com>



**Matt DeLisi¹, Chad R. Trulson²,
James W. Marquart³, Alan J. Drury¹,
and Anna E. Kosloski¹**

Abstract

The importation model is a venerable theoretical explanation for inmate misconduct but it has not been extended in nearly 50 years. The current study advances a life course importation model of inmate behavior where life events in childhood cascade to predict antisocial behavior during adolescence and misconduct occurring during periods of confinement. Based on data from 2,520 institutionalized male delinquents, ordinary least squares, logistic, and negative binomial regression models indicated that family background variables were largely predictive of multiple facets of delinquent careers. Negative binomial regression models of institutional misconduct indicated that proximal delinquent career variables were more consistently associated with misconduct than distal family background factors. Because institutional behavior can be understood as the importing of family deprivation experiences and chronic delinquency, the life course importation model is a useful conceptual framework to study crime over the life course, even including periods of confinement.

Keywords

importation model, inmate behavior, delinquent career, life course, family

¹Iowa State University, Ames

²University of North Texas, Denton

³University of Texas at Dallas, Richardson

Corresponding Author:

Matt DeLisi, Iowa State University, 203A East Hall, Ames, IA 50011-1070

Email: delisi@iastate.edu

Introduction

Early criminological studies of prisoners and inmate behavior emphasized the structural features of the prison facility itself, its administrative regime, and the ways that correctional officials or guards interacted with and supervised inmates (Clemmer, 1940; Cloward et al., 1960; Hayner & Ash, 1940; Sykes, 1958). This area of research was sociological and structural in its orientation and tended to deemphasize individual-level traits that existed among the prisoner population as an explanation for inmate behavior. This changed in 1962 when John Irwin and Donald Cressey introduced the importation model of inmate behavior. According to Irwin and Cressey (1962), “the idea that the prison produces its own varieties of behavior represents a break with the more traditional notion that men bring patterns of behavior with them when they enter prison, and use them in prison” (p. 144). The importation model suggests that deviant subcultural values, beliefs, and behaviors that typify the criminal population—which they characterized as the “thief subculture”—are brought inside confinement facilities when offenders are sentenced to prison. Moreover, a similarly deviant subculture—which Irwin and Cressey described as the “convict subculture”—already exists within prisons and offenders navigate these deviant subcultures while serving time. Overall, the logic of the importation model is that inmate behavior and particularly misconduct are more an expression of the antisociality of offenders than the oppressive, painful, and criminogenic physical and environmental features of the prison.

Literature Review

The Prison Black Box

Although it was introduced nearly 50 years ago, the importation model has not been substantively extended theoretically. One explanation for this is that criminologists have likely faced limitations in terms of access to correctional data that has precluded linking institutional misconduct with broader literatures on delinquency and crime occurring before confinement and recidivism outcomes occurring after release. Because of this inaccessibility, prisons were viewed as a black box where offending careers were placed on hold until offenders were released (DeLisi, 2003). Consequently, literatures on offending, misconduct, and recidivism developed as relatively distinct areas of scholarship, and continuities between these areas of offending have been understudied. For instance, Blumstein and Cohen (1979) advised that “when computing individual arrest rates from the arrest histories, *only those periods when an offender is criminally active* should be considered. This requires consideration of the start and end of a criminal career and *concern for any time spent in confinement during that career*” (p. 565, italics added). In addition, Barnett, Blumstein, and Farrington (1987) noted that life course or criminal careers research often omits prison from consideration as an environment where antisocial behavior can be examined, for instance, “periods when youths were not at risk of offending were excluded, notably periods spent in penal

institutions and periods after death or emigration” (p. 87). In this way, periods of confinement—and the misconduct that occurred during periods of confinement—were shut off from the preprison behaviors that a priori contributed to it.

Indeed, it is commonplace for investigators who use life course or criminal career models to similarly treat institutional misconduct as a somewhat separate entity from broader patterns of delinquency (e.g., Blumstein, Cohen, Das, & Moitra, 1988; DeLisi, 2005; Elliott, Huizinga, & Morse, 1987; Farrington, 1992; Rhodes, 1989; Smith & Smith, 1984; Van Dine, Conrad, & Dinitz, 1979; Wolfgang, Figlio, & Sellin, 1972; cf. DeLisi, 2003; Dhimi, Ayton, & Loewenstein, 2007; Glueck & Glueck, 1930); and current authors speculate that this has prevented research that would give the importation model greater salience today. This has important empirical and theoretical implications. For instance, Robins (2005) recently suggested that the absence of prison records in Sampson and Laub’s studies of the Gluecks’ data (Laub & Sampson, 2003; Sampson & Laub, 1993, 2005) exaggerated their estimate of criminal desistance because offenders were given credit for leading crime-free lives when in fact they were confined and their misconduct (and compliance) were unknown.

The Interplay Between Institutional Misconduct and Life Course Offending

The traditional importation model of inmate behavior has been tested relatively often and the balance of research generally supports its main contention. In early studies using a sample of 276 adult male inmates serving time in a maximum-security prison, Thomas and Foster (1972) and Thomas (1973) found that preprison characteristics, such as social class of an inmate’s family of origin, an inmate’s attained social class, criminal history, connections to others in conventional society during confinement, and perceived likelihood of postrelease success were associated with institutional maladjustment. In contrast, Akers and colleagues (Akers, 1977; Akers, Hayner, & Gruninger, 1974) examined the effects of importation and deprivation factors at predicting two forms of misconduct—sexual and drug—and inmate leadership. Although the criminality of inmates was acknowledged, Akers and colleagues found that prison type and aggregate demographic characteristics of the inmate population were stronger predictors of institutional misconduct particularly in more custodial or punitive facilities.

Similarly mixed findings emerged in studies of misconduct among juveniles in confinement. Zingraff (1980) surveyed 267 boys and 137 girls committed to juvenile facilities and produced evidence for both importation and deprivation models of inmate behavior. The most powerful importation variable was a youth’s postrelease expectations. Those with expectations of reforming their behavior after release were more compliant while confined. Conversely, those with more negative expectations of their rehabilitation were prone to assimilate to an antisocial inmate subculture. Poole and Regoli (1983) found that institutional context mediated the effect of preconfinement variables on violent misconduct. Consistent with prior research (e.g., Akers, 1977; Akers et al., 1974; Feld, 1981), Poole and Regoli also found greater maladjustment in

more custodial facilities. However, the strongest predictor of whether an inmate was violent while confined was preinstitutional use of violence. Moreover, Poole and Regoli (1983) suggested, "Violence in prison is the logical and predictable result of the commitment of a collection of individuals whose life histories have been characterized by disregard for law, order, and social convention, in addition to a concurrent propensity for aggression . . . *regardless of the institutional setting*" (p. 215).

Roughly two decades after Irwin and Cressey's (1962) seminal work, penologists began to focus less on specific models of inmate behavior and more on specific variables—or risk factors—which were believed to be related to adjustment to prison and misconduct. This shift operated on the assumption that variables that were associated with offending in the community, such as young age, male gender, minority status, substance abuse history, and delinquency history, would also likely correlate with misconduct (Byrne & Hummer, 2007). Indeed, a bevy of studies using diverse methodologies, samples, and data sources found that preprison risk factors for delinquency—including police contacts or arrests, adjudications or convictions, violence and weapons history, gang activity, child and adolescent abuse victimization, psychosocial risk factors, and family criminality—were associated with institutional misconduct for adults (DeLisi, Berg, & Hochstetler, 2004; DeLisi & Muñoz, 2003; Flanagan, 1983; Griffin & Hepburn, 2006; Harer & Steffensmeier, 1996; Homant & Witkowski, 2003; Sorensen, Wrinkle, & Gutierrez, 1998) and juveniles (Gover, MacKenzie, & Armstrong, 2000; Kuanliang, Sorensen, & Cunningham, 2008; MacDonald, 1999; Trulson, 2007).

Population Heterogeneity and State Dependence

Conceptually, the predictive validity of family background, delinquency history, and other criminal risk factors on institutional misconduct is congruent with life course perspectives (Elder, 1985) that focus on antisocial behavior over the life span as it develops during childhood, adolescence, and adulthood (Piquero, Farrington, & Blumstein, 2003). Two general perspectives exist in the life course literature to explain offending over time: population heterogeneity and state dependence (Nagin & Paternoster, 2000). Population heterogeneity asserts that variation in some individual-level construct (e.g., antisocial propensity, antisocial personality, low self-control) explains offending careers over time. From this perspective (see, e.g., Gottfredson & Hirschi, 1990; Moffitt, 1993; Wilson & Herrnstein, 1985), the most antisocial people are those with the greatest criminal propensity, and the least antisocial people are those with the lowest criminal propensity. Within the life course literature, scholars disagree about the origins of such antisocial traits. Some attribute antisociality/low self-control to bad parenting and family dysfunction (Gottfredson & Hirschi, 1990; Farrington & Welsh, 2007), neuropsychological deficits (Beaver, Wright, & DeLisi, 2007; Moffitt, 1993), or genetic risk factors (Beaver et al., 2007; Wright, Beaver, DeLisi, & Vaughn, 2008), whereas others advance integrated biosocial explanations for the development of antisocial traits (Beaver, DeLisi, Vaughn, & Wright, 2010; Caspi, Hariri, Holmes, Uher, & Moffitt, 2010; Moffitt, 2005). Affirmative evidence of the importation model is

consistent with the population heterogeneity idea because it is suggestive of a protean antisociality that manifests in both community and correctional contexts.

State dependence is the idea that prior criminal behavior sets into motion a series of processes that promote further antisocial behavior, but the ultimate causal power is attributed to contextual, situational, or structural factors and not individual propensity. This perspective innervates Sampson and Laub's age-graded theory of informal social control, where age-differentiated experiences unfold and "impinge on decision processes and the course of events that give shape to life stages, transitions, and turning points" (Sampson & Laub, 1993, p. 8). From this view, earlier criminal behavior negatively affects social bonds, reduces opportunities to participate in conventional activities, and serves to locate offenders into a delinquent peer network that will further enhance their antisocial conduct (see Agnew, 1985; Akers, 2009; Massey & Krohn, 1986; Sutherland, 1947). The relevance of life course criminology to institutional misconduct is clear. Criminogenic processes and traits—such as abuse and victimization, family criminality, antisocial parenting, poverty, and a host of psychosocial traits—that propel adolescents into delinquency in the first place remain when youths are committed to confinement facilities.

Current Focus

To summarize, empirical examinations of the importation model of inmate behavior have evolved from explicit tests of the theory to the use of preprison social risk and behavioral history measures that generally encompass the logic of importation theory. The current study extends this research in two ways. First, the effects of family background risk factors on delinquent career outcomes are examined to explore how various forms of abuse and victimization, poverty, and deviant family characteristics relate to serious delinquency occurring in adolescence as shown by previous research (Dunford & Elliott, 1984; Elliott, 1994; Farrington & Welsh, 2007; Gibson & Tibbetts, 2000; Laub, Nagin, & Sampson, 1998). Second, family background and delinquent career covariates are used to predict six types of institutional misconduct among a large cohort of confined delinquents. Theoretically, this permits an empirical assessment of the distal effects of early life family processes and characteristics and the more proximal effects of delinquent careers on misconduct which adds a contemporary, life course vitality to the venerable importation model. This new approach is called the life course importation model of inmate behavior.

Method

Participants and Procedures

Data are derived from a large sample ($n = 2,520$) of adjudicated male delinquents committed to confinement facilities in a large southern state. Information on each juvenile offender was compiled by the juvenile correctional system at a statewide intake unit

on the youths' commitment and during their institutionalization. All state-committed youth were housed at the intake facility for approximately 2 months and then were transferred to specific facilities around the state to complete their commitment period. Additional offender data were collected during the youth's confinement from numerous sources, including state- and county-level official records, on-site diagnostic procedures at intake, observations from professional and correctional staff, self-report information from youth, or a combination of these sources, which bolsters its concurrent validity (Brame, Fagan, Piquero, Schubert, & Steinberg, 2004; Hewitt, Poole, & Regoli, 1984; Kuanliang & Sorensen, 2008; Van Voorhis, 1994) given the advantages of multiple-rater measures. Data on the official institutional misconduct of state-committed delinquents were collected with standardized instruments at each juvenile facility in the state and maintained at a centralized location.

Measures

Family background characteristics. Several family background factors, such as poverty, history of abuse, and family criminality are associated with delinquency and life course offending. Seven dichotomous (0 = *no*, 1 = *yes*) family background measures were used. These were (a) having family members that were in gangs; (b) whether the youth was violent toward his family as indicated by prior police contacts for assaultive crimes where a parent, sibling, or other family member was the victim; (c) family poverty; (d) living in a chaotic home environment that was characterized as crowded living conditions, with more than one family residing in the residence and frequent moving by family members to and from the home; (e) evidence that the youth was physically abused; (f) evidence that the youth was sexually abused; and (g) evidence that the youth was emotionally abused. All abuse measures were composites of evidence based on self-reports from youth, official records, and information garnered by professional staff at intake.

Delinquent career characteristics. Dichotomous measures (0 = *no*, 1 = *yes*) of whether the youth had a substance abuse history (44.2% drug/alcohol involved) and whether the youth was a known gang member (35.9% gang involved) were included based on their relationship to institutional misconduct. In addition, three continuously coded delinquent career measures were used: age at first state commitment, number of previous out-of-home placements, and felony adjudications prior to state commitment. Prior research indicated that a subset of chronic offenders commit the preponderance of institutional misconduct (DeLisi & Berg, 2006; DeLisi et al., 2010; Graeve, DeLisi, & Hochstetler, 2007; Trulson, DeLisi, Caudill, Belshaw, & Marquart, 2010).

Race and ethnicity. Dichotomous terms (0 = *no*, 1 = *yes*) were created for African Americans (35.3%), Hispanics (38.3%), and Whites (24.8%). The omitted group was persons with Other race (1.5%).

Time served. To control for exposure/time served in confinement, the length of confinement in days was logged to help normalize the time served distribution. Missing data

for time served reduced the analytical sample for negative binomial regression models of misconduct to $n = 1,779$. In the current models, all models were run with and without the time served measure and the results did not substantively change with the exception of a significant effect for African American predicting assault without time served in the model. In addition, all models were run using an imputed average of time served in place of the missing data. Because neither analytical variation above resulted in substantive differences in model outcomes, the current authors chose to maintain the model absent missing cases.

Institutional misconduct. Six forms of institutional misconduct were included in the present analyses, including any misconduct (1.21% of the sample had zero), any assault against staff or fellow resident (91.4% of the sample had zero), escape (94.05% of the sample had zero), gang activity (82.87% of the sample had zero), possession/use of controlled substance (78.57% of the sample had zero), and possession of a weapon (89.95% of the sample had zero). The summary misconduct measure was mutually exclusive to the other offense-specific measures of misconduct. These data were consistent with prior research which suggested that a range of institutional misconduct measures was advantageous to summary measures that encompassed criminal and noncompliance offenses (Drury & DeLisi, 2011; Kuanliang & Sorensen, 2008; Sorensen & Cunningham, 2010; Steiner & Wooldredge, 2008). Descriptive statistics for all study variables appear in Table 1.

Analytical Strategy

Two stages of analyses were used. First, three multiple regression techniques—ordinary least squares, negative binomial, and logistic—were used to explore the effects of family background variables on delinquent career statuses. Second, negative binomial regression models were used to examine the effects of family background, delinquent career, demographic, and time served on the six forms of institutional misconduct. All of these dependent variables are cross-sectional count data that are bound by zero, positively skewed, and have a high degree of heteroskedasticity (Keith, 2006; Long, 1997; Schroeder, Sjoquist, & Stephan, 1986). As a result, all regression models were estimated with negative binomial regression—where the conditional variance exceeds the conditional mean—which has become a standard estimation strategy in penological research (Walters, 2007b).

In Stata 9.2, a diagnostic dispersion parameter that exceeds zero confirmed that negative binomial was a more appropriate modeling strategy than other approaches to count data (e.g., Poisson regression) which are compromised by overdispersion. The likelihood ratio chi-square ($LR\chi^2$) coefficients for each model were as follows: $LR\chi^2 = 1308.19$, $p = .0000$, for any misconduct; $LR\chi^2 = 466.39$, $p = .0000$, for any assault; $LR\chi^2 = 200.99$, $p = .0000$, for escape; $LR\chi^2 = 237.31$, $p = .0000$, for drug possession; $LR\chi^2 = 66.54$, $p = .0000$, for weapons possession; and $LR\chi^2 = 698.89$, $p = .0000$, for gang activity.

Table 1. Descriptive Statistics ($n = 2,520$)

Variable	<i>M</i>	<i>SD</i>	Range
Substance abuser	0.44	0.50	0-1
Out-of-home placements	0.45	1.12	0-10
Prior felony adjudications	1.60	0.95	0-10
Onset age of confinement	15.3	1.14	10-18
African American	0.35	0.48	0-1
Hispanic	0.38	0.49	0-1
White	0.25	0.43	0-1
Gang member	0.36	0.48	0-1
Physical abuse	0.13	0.34	0-1
Sexual abuse	0.11	0.32	0-1
Emotional abuse	0.23	0.42	0-1
Poverty	0.57	0.50	0-1
Chaotic home	0.69	0.46	0-1
Gang family	0.09	0.29	0-1
Violent to family	0.25	0.43	0-1
Time served (log)	7.11	0.37	2.99-8.01
Any misconduct	88.8	144.15	0-1,886
Assault	0.46	2.41	0-57
Escape	0.09	0.47	0-8
Drug possession	0.34	0.81	0-10
Weapons possession	0.13	0.45	0-6
Gang activity	0.57	1.96	0-28

Results

The first set of multivariate models examined the relationship between family background variables, such as physical, sexual, and emotional abuses, living in poverty, living in a chaotic home, having family members involved in gangs, and the youth using violence against his family, and characteristics of the delinquent career. As shown in Table 2, only one family background risk factor was associated with onset of juvenile confinement. Youths who had greater sexual abuse victimization had an earlier age of first confinement. None of the other family background variables were significantly related.

Negative binomial regression models that assessed the effects of family background on career felony adjudications and out-of-home placements revealed mostly divergent findings (Table 3). To illustrate, physical abuse was not associated with career adjudications, but strongly predicted out-of-home placements. Sexual and emotional abuses were negatively albeit nonsignificantly associated with career felony adjudications but significantly related to out-of-home placements. Youths with greater history of sexual

Table 2. Ordinary Least Squares Regression Model for Onset of Juvenile Confinement ($n = 2,520$)

Variable	<i>b</i>	SE	<i>t</i>
Physical abuse	-0.02	0.08	-0.30
Sexual abuse	-0.31	0.08	-4.17***
Emotional abuse	-0.10	0.06	-1.58
Poverty	-0.09	0.05	-1.79
Chaotic home	-0.02	0.06	-0.41
Gang family	0.03	0.08	0.35
Violent to family	-0.08	0.06	-1.38

*** $p < .0001$.**Table 3.** Negative Binomial Regression Models for Career Felony Adjudications and Out-of-Home Placements ($n = 2,520$)

Variable	Career felony adjudications			Out-of-home placements		
	<i>b</i>	SE	<i>z</i>	<i>b</i>	SE	<i>z</i>
Physical abuse	0.02	0.05	0.32	0.52	0.12	4.23***
Sexual abuse	-0.04	0.05	-0.80	0.64	0.12	5.37***
Emotional abuse	-0.03	0.04	-0.67	0.44	0.10	4.29***
Poverty	0.07	0.04	1.92*	-0.16	0.10	-1.65
Chaotic home	0.16	0.04	3.93***	0.57	0.12	4.88***
Gang family	0.11	0.05	2.00*	-0.60	0.17	-3.43***
Violent to family	0.02	0.04	0.51	0.24	0.10	2.28*
Model χ^2	40.15***			213.34***		
Pseudo R^2	.01			.05		

*** $p < .0001$. * $p < .05$.

abuse and those with more emotional abuse had more out-of-home placements. Living in poverty increased career felony adjudications, but was not significantly associated with out-of-home placements. Living in a chaotic home increased both career felony adjudications and out-of-home placements. Youths with family members involved in gangs totaled more delinquent felony adjudications, but totaled fewer out-of-home placements. Violence toward family members was not related to career felony adjudications but did predict out-of-home placements.

Next, logistic regression was used to empirically explore the association between family background factors and two statuses associated with delinquent careers—substance abuser and gang membership (Table 4). With the exception of physical abuse, family background factors were consistently predictive of youths becoming a substance abuser. Using the formula $\% \Delta = (e^b - 1)(100)$, sexual abuse increased the likelihood of becoming

Table 4. Logistic Regression Models for Substance Abuser and Gang Member Statuses (n = 2,520)

Variable	Substance abuser			Gang member		
	b	SE	z	b	SE	z
Physical abuse	0.17	0.15	1.09	-0.19	0.15	-1.26
Sexual abuse	0.28	0.15	1.90*	-0.75	0.16	-4.62***
Emotional abuse	0.52	0.12	4.41***	-0.00	0.12	-0.04
Poverty	0.29	0.10	2.93**	0.28	0.10	2.85**
Chaotic home	0.87	0.11	7.71***	0.09	0.11	0.82
Gang family	1.11	0.16	6.86***	1.86	0.16	11.34***
Violent to family	1.21	0.11	10.58***	0.18	0.11	1.58
Model χ^2	502.72***			211.46***		
Pseudo R ²	.15			.06		

***p < .0001. **p < .01. *p < .05.

a juvenile substance abuser by 32%. Emotional abuse resulted in a 68% increased likelihood of substance abuse, whereas living in poverty increased the risk by 34%. Even larger effects were found for chaotic home, gang family, and violent toward family members, which increased the likelihood of becoming a juvenile substance abuser by 138%, 203%, and 235%, respectively. For gang members, only three significant effects emerged. Sexual abuse was negatively related to gang membership as youths who were sexually abused were 53% less likely to become involved in gangs. Living in poverty was positively associated with gang membership and increased the likelihood by 32%. Having family members involved in gangs was dramatically associated with gang membership with an increased likelihood of 542%.

The final set of results stems from negative binomial regression models which including all family background and delinquent career variables, three racial or ethnic status groups, and time served in confinement to predict six types of institutional misconduct. Full model coefficients for any misconduct, assault, and escape appear in Table 5 and model coefficients for drug possession, weapons possession, and gang activity appear in Table 6. For the summary misconduct outcome, the delinquent career characteristics including onset of confinement, prior adjudications, out-of-home placements, and substance abuser status were significant. For the family background variables, only sexual abuse was positively related to misconduct whereas having family members in gangs was negatively related to misconduct. African Americans, Hispanics, and Whites and lengthier time served were significantly predictive of any misconduct.

Delinquent career and family background factors were variously associated with the five specific forms of misconduct. For instance, multiple out-of-home placements, living in poverty, violence toward family members, and more time served were associated with assault. Youths with more out-of-home placements, earlier onset of confinement, and greater emotional abuse history were more likely to escape whereas sexual abuse

Table 5. Negative Binomial Regression Models for Any Misconduct, Assaultive Misconduct, and Escape ($n = 1,779$)

Variable	Any misconduct			Assault			Escape		
	<i>b</i>	<i>SE</i>	<i>z</i>	<i>b</i>	<i>SE</i>	<i>z</i>	<i>b</i>	<i>SE</i>	<i>z</i>
Substance abuser	0.15	0.06	2.45**	-0.16	0.35	-0.46	0.33	0.23	1.43
Out-of-home placements	0.15	0.03	5.01***	0.28	0.15	1.83*	0.29	0.09	3.00***
Prior felony adjudications	0.15	0.03	4.71***	0.04	0.18	0.23	0.01	0.11	0.08
Onset of confinement	-0.11	0.02	-4.56***	-0.20	0.14	-1.44	-0.30	0.09	-3.10***
African American	0.81	0.20	4.11***	0.95	1.44	0.66	0.44	0.88	0.50
Hispanic	0.44	0.20	2.24*	0.47	1.43	0.33	0.16	0.88	0.19
White	0.63	0.20	3.13**	0.51	1.46	0.35	0.16	0.90	0.18
Gang member	0.04	0.06	0.58	0.46	0.36	1.29	-0.16	0.25	-0.63
Physical abuse	-0.07	0.09	-0.77	-0.57	0.53	-1.06	0.30	0.34	0.90
Sexual abuse	0.20	0.09	2.29*	0.29	0.47	0.62	-0.89	0.38	-2.37**
Emotional abuse	-0.11	0.07	-1.45	-0.54	0.42	-1.27	0.76	0.25	3.04***
Poverty	0.06	0.06	0.97	0.74	0.37	2.01*	0.27	0.25	1.08
Chaotic home	0.12	0.07	1.74	-0.39	0.41	-0.95	-0.28	0.28	-0.99
Gang family	-0.35	0.10	-3.48***	-0.21	0.55	-0.39	-0.39	0.41	-0.97
Violent to family	0.10	0.07	1.37	0.88	0.42	2.09*	-0.11	0.28	-0.38
Time served (log)	1.22	0.07	17.42***	1.86	0.49	3.80***	-0.26	0.30	-0.87
Model χ^2	527.90***			39.28***			47.94***		
Pseudo R^2	.029			.045			.040		

*** $p < .0001$. ** $p < .01$. * $p < .05$.

history was negatively predictive of escape. Being a substance abuser was predictive of drug possession during confinement. In addition, prior adjudications, gang membership, physical abuse history, and more time served predicted drug possession. None of the family background variables were associated with weapons possession; however, substance abusers, youths with more prior adjudications, those with an early onset of confinement, and delinquents with more time served were predictive of weapons possession. Youths with more extensive histories of delinquent adjudications and those involved in gangs totaled significantly more infractions for gang activity. Sexual abuse and time served were positively related to gang activity and having family members in gangs was negatively associated with gang activity during confinement.

Table 6. Negative Binomial Regression Models for Drug Possession, Weapons Possession, and Gang Activity (*n* = 1,779)

Variable	Drug possession			Weapons possession			Gang activity		
	<i>b</i>	<i>SE</i>	<i>z</i>	<i>b</i>	<i>SE</i>	<i>z</i>	<i>b</i>	<i>SE</i>	<i>z</i>
Substance abuser	0.27	0.13	2.12*	0.39	0.20	1.92*	0.23	0.18	1.25
Out-of-home placements	0.07	0.05	1.36	0.10	0.07	1.40	0.10	0.07	1.37
Prior felony adjudications	0.17	0.06	2.80**	0.28	0.10	2.85**	0.34	0.09	3.62***
Onset of confinement	-0.09	0.05	-1.74	-0.25	0.08	-3.07**	-0.07	0.07	-0.97
African American	0.26	0.47	0.55	0.26	1.11	0.24	0.49	0.64	0.76
Hispanic	0.39	0.47	0.82	0.94	1.10	0.86	0.24	0.64	0.37
White	0.20	0.48	0.41	0.95	1.11	0.86	-0.06	0.65	-0.09
Gang member	0.32	0.13	2.50**	0.02	0.21	0.07	0.37	0.18	2.05*
Physical abuse	0.41	0.18	2.21*	-0.46	0.29	-1.57	0.20	0.28	0.72
Sexual abuse	-0.08	0.19	-0.42	-0.34	0.29	-1.18	0.54	0.24	2.18*
Emotional abuse	-0.05	0.15	-0.33	0.26	0.23	1.16	-0.31	0.23	-1.34
Poverty	-0.13	0.13	-1.05	0.18	0.21	0.86	-0.20	0.18	-1.09
Chaotic home	0.01	0.14	0.09	0.02	.24	0.07	0.20	0.21	0.93
Gang family	-0.33	0.21	-1.54	-0.49	0.36	-1.34	-0.67	0.31	-1.97*
Violent to family	-0.15	0.15	-1.00	0.14	0.22	0.62	-0.01	0.22	-0.05
Time served (log)	0.71	0.18	3.93***	1.68	0.32	5.28***	1.16	0.25	4.62***
Model χ^2	60.76***			95.84***			75.45***		
Pseudo <i>R</i> ²	.024			.081			.037		

****p* < .0001. ***p* < .01. **p* < .05.

Discussion

The summary of findings for predictors of institutional misconduct shown in Table 7 revealed three essential findings. First, delinquent career variables were variously predictive of institutional misconduct, with significant relationships in 16 of 30 regression outcomes. Youths with lengthier histories of delinquent adjudications netted more total misconduct in addition to drug possession, weapons possession, and gang activity. Onset age of confinement was inversely predictive of four types of misconduct: total, escape, weapons, and gang activity. Youths with greater out-of-home placements prior to confinement accumulated more total, assault, and escape violations while confined. Those with substance abuse status were significantly likely to total any, drug, and weapons misconduct. Gang members were significantly involved in drug and gang activity. Taken together, the association between delinquent career variables and

Table 7. Summary of Findings for Institutional Misconduct

Variable	Any	Assault	Escape	Drugs	Weapons	Gang activity
Substance abuser	+	<i>ns</i>	<i>ns</i>	+	+	<i>ns</i>
Gang member	<i>ns</i>	<i>ns</i>	<i>ns</i>	+	<i>ns</i>	+
Out-of-home placements	+	+	+	<i>ns</i>	<i>ns</i>	<i>ns</i>
Prior felony adjudications	+	<i>ns</i>	<i>ns</i>	+	+	+
Onset of confinement	–	<i>ns</i>	–	<i>ns</i>	–	–
Physical abuse	<i>ns</i>	<i>ns</i>	<i>ns</i>	+	<i>ns</i>	<i>ns</i>
Sexual abuse	+	<i>ns</i>	–	<i>ns</i>	<i>ns</i>	+
Emotional abuse	<i>ns</i>	<i>ns</i>	+	<i>ns</i>	<i>ns</i>	<i>ns</i>
Poverty	<i>ns</i>	+	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Chaotic home	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Gang family	–	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	–
Violent to family	<i>ns</i>	+	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
African American	+	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Hispanic	+	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
White	+	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Time served	+	+	<i>ns</i>	+	+	+

Note: + = equals significant positive effect; – = equals significant inverse effect.

subsequent institutional misconduct was consistent with the importation model of inmate behavior (Irwin & Cressey, 1962) and supportive of voluminous prior research among both adult and juvenile offenders (Craddock, 1996; Cunningham & Sorensen, 2007; DeLisi, 2003; Flanagan, 1983; Gaes, Wallace, Gilman, Klein-Saffran, & Suppa, 2002; Gendreau, Goggin, & Law, 1997; Gover et al., 2000; Graeve et al., 2007; Griffin & Hepburn, 2006; Homant & Witkowski, 2003; Kuanliang et al., 2008; Kuanliang & Sorensen, 2008; Sorensen & Cunningham, 2010; Steiner & Wooldredge, 2008; Trulson, 2007).

Second, although family background variables were importantly related to propelling youths into delinquent careers in the first place, their effects were far less pronounced for institutional misconduct. In only 9 of 42 regression outcomes did significant effects emerge between family background variables and misconduct, and three of these were negative and thus in the unexpected direction. Unfortunately, the current data were cross-sectional, which precluded modeling the temporal relationships between family factors, such as physical, sexual, and emotional abuse; poverty; living in a chaotic home environment; violence toward family members; and having family members involved in gangs, delinquent careers, and subsequent misconduct. Other researchers have similarly found a declining effect of early life family factors on delinquency relative to more proximal effects. For instance, Kinner, Alati, Najman, and Williams (2007) examined the effects of paternal arrest and imprisonment on child behavior problems among a large ($n = 2,399$) Australian birth cohort. They found that paternal criminal justice

involvement was associated with increased internalizing, externalizing, and drug-offending behaviors among their children. However, these effects were diminished once proximal family factors (e.g., SES, parenting styles, maternal mental health, and others) were considered. Similarly, using data from the Cambridge Study in Delinquent Development, Beaver and Wright (2007) found that background family risk factors had limited effects on delinquency compared to youth's proximal involvement in an antisocial lifestyle.

Nevertheless, some distal family experiences had lasting effects on institutional offending. Youths who had been physically abused were significantly involved in drug misconduct. Those with sexual abuse history were significantly more likely to engage in any misconduct and gang activity, but less likely to escape. Conversely, those who had been emotionally abused were prone to escape from custody. Wards who were raised in poverty as well as those who were violent toward family members were likely to commit assault while confined. These findings were consistent with research linking family background—particularly family abuse—to subsequent antisocial behavior (Benson, 2002; Ethier, Couture, & Lacharité, 2004; Farrington, Barnes, & Lambert, 1996; Farrington, Lambert, & West, 1998; Farrington & Welsh, 2007; Farrington & West, 1993; Gibson & Tibbetts, 2000; Juby & Farrington, 2001; Payne & Gainey, 2005).

Third, although other research has shown race to be a powerful social concern (Berg & DeLisi, 2006), public policy matter (Trulson, Marquart, Hemmens, & Carroll, 2008), and risk factor for violence (Harer & Steffensmeier, 1996; Sorensen & Cunningham, 2007) vis-à-vis institutional misconduct, this was not the case here. All three racial or ethnic groups, African Americans, Hispanics, and Whites, were likely to engage in any misconduct; however, nonsignificant effects were found for the remaining five types of offending. The remaining covariate, time served, predicted all forms of misconduct except escape.

The current findings have important implications for life course criminology, particularly the concepts of population heterogeneity and state dependence. It is clear that early home environments characterized by abuse, poverty, family criminality, and other deprivations contribute to serious delinquency patterns that invariably result in adjudication, out-of-home placements, and commitments to state confinement facilities. These early life experiences are doubly crippling for serious delinquents because they greatly restrict opportunities for prosocial development (e.g., adolescents attending school in confinement is a very different scenario than attending community schools) while facilitating their antisocial development via detention and exposure to other serious delinquents. Thus, the importation processes that typify severe delinquents are much more pernicious than Irwin and Cressey (1962) originally theorized. Institutional misconduct has less to do with the facile importing of subcultural attitudes and beliefs, and likely more to do with the litany of victimization, impoverishment, and antisociality that characterizes the confined youth population (DeLisi et al., 2008; Sickmund, 2004; Trulson, DeLisi, & Marquart, 2011; Vaughn, Howard, & DeLisi, 2008). In the current models, prior felony adjudications and age at first confinement—both population heterogeneity indicators—were among the most consistent predictors of misconduct, and

these constructs contribute to antisocial conduct whether in the community or confinement.

A life course importation model provides a useful conceptual framework to study offending careers in the community and in the justice system. Given the intermittency in criminal careers, periods of incarceration should not be confused with periods of desistance from offending (Piquero, 2004; Piquero, Brame, & Lynam, 2004). In this way, intermittency is a specific concept from life course or criminal career research that can shed light on the fluidity between offending across environments. Moreover, Walters (2007a) examined the effects of the Proactive and Reactive composite scales of the Psychological Inventory of Criminal Thinking Styles (PICTS) on misconduct among a sample of federal prisoners and found robust evidence that the Reactive scale—characterized by impulse-driven, emotional reactions to provocation by others—predicted misconduct. In this way, constructs that are powerfully related to life course offending can also be important in understanding violence and misconduct in correctional facilities.

There are important limitations of the current study that should be acknowledged to hopefully inform future research. Although the deprivation and importation models of inmate behavior developed as competing explanations, a wealth of studies produced support for both approaches (Cao, Zhao, & Van Dine, 1997; Dhami et al., 2007; Gillespie, 2005; Hochstetler & DeLisi, 2005; Jiang & Fisher-Giorlando, 2002; Thomas, 1977; Zingraff, 1980) and generally acknowledged the utility of integrated explanations of inmate behavior that encompass elements of both theories. The current study unfortunately lacked facility-level data that would have permitted an empirical investigation of the deprivation model and contained only male offenders, which limits its generalizability.

In addition, there are important clinical constructs unfortunately absent from the current data that have been linked to institutional maladjustment. For instance, Taylor and her colleagues (Taylor, Kemper, & Kistner, 2007; Taylor, Kemper, Loney, & Kistner, 2006) used scales from the Millon Adolescent Clinical Inventory (Millon, 1993) to create subgroups of adolescent offenders including an anxious/inhibited group, an impulsive/reactive group, an oppositional/borderline personality disorder group, and a psychopathic group. These clinical groupings were variously related to maladjustment and misconduct, particularly the psychopathic and impulsive/reactive youths. Perhaps because the current data lacked these variables, the regression models predicted modest to low levels of explained variation, suggesting that although the current models contained theoretically and empirically important variables, other important variables were missing.

These are unfortunate limitations posed by secondary data. Although the data file contained a host of theoretically and empirically important variables, it was not necessarily conducted for the purpose of criminological research, let alone to advance a life course importation model of inmate behavior. The current investigators were unable to conduct an audit to verify the validity and reliability of the data, which is a limitation. Moreover, the lack of longitudinal data prevents a more definitive test of the life course

importation model of inmate behavior as it is unknown to what degree the current offenders desist from offending. However, the current data were collected from numerous sources (e.g., state- and county-level official records, on-site diagnostic procedures at intake, observations from professional and correctional staff, and self-reported data from youth), which increases confidence in the data.

Conclusion

What happens to serious and chronic delinquents after they are committed to confinement facilities for their delinquency? The current models showed that youths with multiple out-of-home placements, an early onset of being placed in state custody, multiple prior adjudications, substance abuse problems, and gang involvement were at risk for continued oppositional behavior while in state custody. Moreover, a constellation of variables including poverty, victimization and abuse, and family disruption were importantly predictive of delinquency, and in some cases, enduringly predictive of misconduct. For nearly a half century, the importation model has served as an important theoretical device to understand inmate adjustment and compliance with prior regulations. But the importation model has withered. The current empirical results were relatively modest; however, the theoretical interest is important. Because life course or criminal career models are a pillar of contemporary criminology, they serve as an opportunity to resuscitate explanatory models of antisocial conduct, particularly those with criminal justice implications. Finally, the current authors hope that the life course importation model of inmate behavior serves to build an empirical bridge between life course research that investigates antisocial behavior occurring in the community and penological research that investigates antisocial behavior occurring behind bars.

Declaration of Conflicting Interests

The author(s) declared no conflicts of interests with respect to the authorship and/or publication of this article.

Funding

The author(s) received no financial support for the research and/or authorship of this article.

References

- Agnew, R. (1985). A revised strain theory of delinquency. *Social Forces*, *64*, 151-167.
- Akers, R. L. (1977). Type of leadership in prison: A structural approach to testing the functional and importation models. *Sociological Quarterly*, *18*, 378-383.
- Akers, R. L. (2009). *Social learning and social structure: A general theory of crime and deviance*. New Brunswick, NJ: Transaction.
- Akers, R. L., Hayner, N. S., & Gruninger, W. (1974). Homosexual and drug behavior in prison: A test of the functional and importation models of the inmate system. *Social Problems*, *21*, 410-422.

- Barnett, A., Blumstein, A., & Farrington, D. P. (1987). Probabilistic models of youthful criminal careers. *Criminology*, 25, 83-107.
- Beaver, K. M., DeLisi, M., Vaughn, M. G., & Wright, J. P. (2010). The intersection of genes and neuropsychological deficits in the prediction of adolescent delinquency and low self-control. *International Journal of Offender Therapy and Comparative Criminology*, 54, 22-42.
- Beaver, K. M., & Wright, J. P. (2007). A child effects explanation for the association between family risk and involvement in antisocial lifestyle. *Journal of Adolescent Research*, 22, 640-664.
- Beaver, K. M., Wright, J. P., & DeLisi, M. (2007). Self-control as an executive function: Reformulating Gottfredson and Hirschi's parental socialization thesis. *Criminal Justice and Behavior*, 34, 1345-1361.
- Beaver, K. M., Wright, J. P., DeLisi, M., Walsh, A., Vaughn, M. G., Boisvert, D., & Vaske, J. (2007). A gene \times gene interaction between DRD2 and DRD4 is associated with conduct disorder and antisocial behavior in males. *Behavioral and Brain Functions*, 3, 30.
- Benson, M. L. (2002). *Crime and the life course: An introduction*. Los Angeles, CA: Roxbury.
- Berg, M. T., & DeLisi, M. (2006). The correctional melting pot: Race, ethnicity, citizenship, and prison violence. *Journal of Criminal Justice*, 34, 631-642.
- Blumstein, A., & Cohen, J. (1979). Estimation of individual crime rates from arrest records. *Journal of Criminal Law and Criminology*, 70, 561-585.
- Blumstein, A., Cohen, J., Das, S., & Moitra, S. D. (1988). Specialization and seriousness during adult criminal careers. *Journal of Quantitative Criminology*, 4, 303-343.
- Brame, R., Fagan, J., Piquero, A. R., Schubert, C. A., & Steinberg, L. (2004). Criminal careers of serious delinquents in two cities. *Youth Violence and Juvenile Justice*, 2, 256-272.
- Byrne, J. M., & Hummer, D. (2007). Myths and realities of prison violence: A review of evidence. *Victims & Offenders*, 2, 77-90.
- Cao, L., Zhao, J., & Van Dine, S. (1997). Prison disciplinary tickets: A test of the deprivation and importation models. *Journal of Criminal Justice*, 25, 103-111.
- Caspi, A., Hariri, A. R., Holmes, A., Uher, R., & Moffitt, T. E. (2010). Genetic sensitivity to the environment: The case of the serotonin transporter gene and its implications for studying complex diseases and traits. *American Journal of Psychiatry*, 167, 509-527.
- Clemmer, D. (1940). *The prison community*. Boston, MA: Christopher Publishing.
- Cloward, R. A., Cressey, D. R., Grosser, G. H., McCleery, R., Ohlin, L. E., Sykes, G. M., & Messinger, S. L. (1960). *Theoretical studies in social organization of the prison*. New York, NY: Social Science Research Council.
- Craddock, A. (1996). A comparative study of male and female prison misconduct careers. *The Prison Journal*, 76, 60-80.
- Cunningham, M. D., & Sorensen, J. R. (2007). Predictive factors for violent misconduct in close custody. *The Prison Journal*, 87, 241-253.
- DeLisi, M. (2003). Criminal careers behind bars. *Behavioral Sciences and the Law*, 21, 653-669.
- DeLisi, M. (2005). *Career criminals in society*. Thousand Oaks, CA: SAGE.
- DeLisi, M., & Berg, M. T. (2006). Exploring theoretical linkages between self-control theory and criminal justice system processing. *Journal of Criminal Justice*, 34, 153-163.

- DeLisi, M., Berg, M. T., & Hochstetler, A. (2004). Gang members, career criminals, and prison violence: Further specification of the importation model of inmate behavior. *Criminal Justice Studies, 17*, 369-383.
- DeLisi, M., Drury, A. J., Kosloski, A. E., Caudill, J. W., Conis, P. J., Anderson, C. A., Vaughn, M. G., & Beaver, K. M. (2010). The cycle of violence behind bars: Traumatization and institutional misconduct among juvenile delinquents in confinement. *Youth Violence and Juvenile Justice, 8*, 107-121.
- DeLisi, M., & Muñoz, E. A. (2003). Future dangerousness revisited. *Criminal Justice Policy Review, 14*, 287-305.
- DeLisi, M., Vaughn, M. G., Beaver, K. M., Wright, J. P., Hochstetler, A., Kosloski, A. E., & Drury, A. J. (2008). Juvenile sex offenders and institutional misconduct: The role of thought psychopathology. *Criminal Behaviour and Mental Health, 18*, 292-305.
- Dhami, M. K., Ayton, P., & Loewenstein, G. (2007). Adaptation to imprisonment: Indigenous or imported? *Criminal Justice and Behavior, 34*, 1085-1100.
- Drury, A. J., & DeLisi, M. (2011). Gangkill: An exploratory empirical assessment of gang membership, homicide offending, and prison misconduct. *Crime & Delinquency, 57*, 130-146.
- Dunford, F. W., & Elliott, D. S. (1984). Identifying career offenders using self-reported data. *Journal of Research in Crime and Delinquency, 21*, 57-86.
- Elder, G. H. (Ed.). (1985). *Life course dynamics: Trajectories and transitions, 1960-1980*. Ithaca, NY: Cornell University Press.
- Elliott, D. S. (1994). Serious violent offenders: Onset, developmental course, and termination—The American Society of Criminology 1993 presidential address. *Criminology, 32*, 1-21.
- Elliott, D. S., Huizinga, D., & Morse, B. (1987). Self-reported violent offending: A descriptive analysis of juvenile violent offenders and their offending careers. *Journal of Interpersonal Violence, 1*, 472-514.
- Ethier, L. S., Couture, G., & Lacharité, C. (2004). Risk factors associated with the chronicity of child abuse and neglect. *Journal of Family Violence, 19*, 13-24.
- Farrington, D. P. (1992). Criminal career research in the United Kingdom. *British Journal of Criminology, 32*, 521-536.
- Farrington, D. P., Barnes, G., & Lambert, S. (1996). The concentration of offending in families. *Legal and Criminological Psychology, 1*, 47-63.
- Farrington, D. P., Lambert, S., & West, D. J. (1998). Criminal careers of two generations of family members in the Cambridge Study in Delinquent Development. *Studies on Crime and Crime Prevention, 7*, 85-106.
- Farrington, D. P., & Welsh, B. C. (2007). *Saving children from a life of crime*. New York, NY: Oxford University Press.
- Farrington, D. P., & West, D. J. (1993). Criminal, penal and life histories of chronic offenders: Risk and protective factors and early identification. *Criminal Behaviour and Mental Health, 3*, 492-523.
- Feld, B. C. (1981). A comparative analysis of organizational structure and inmate subcultures in institutions for juvenile offenders. *Crime & Delinquency, 27*, 336-363.
- Flanagan, T. J. (1983). Correlates of institutional misconduct among state prisoners. *Criminology, 21*, 29-39.

- Gaes, G. G., Wallace, S., Gilman, E., Klein-Saffran, J., & Suppa, S. (2002). The influence of prison gang affiliation on violence and other prison misconduct. *The Prison Journal, 82*, 359-385.
- Gendreau, P., Goggin, C. E., & Law, M. A. (1997). Predicting prisons misconducts. *Criminal Justice and Behavior, 24*, 414-431.
- Gibson, C. L., & Tibbetts, S. G. (2000). A biosocial interaction in predicting early onset of offending. *Psychological Reports, 86*, 509-518.
- Gillespie, W. (2005). A multilevel model of drug abuse inside prison. *The Prison Journal, 85*, 233-246.
- Glueck, S., & Glueck, E. T. (1930). *500 criminal careers*. New York, NY: Knopf.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Gover, A. R., MacKenzie, D. L., & Armstrong, G. S. (2000). Importation and deprivation explanations of juveniles' adjustment to correctional facilities. *International Journal of Offender Therapy and Comparative Criminology, 44*, 450-467.
- Graeve, C. M., DeLisi, M., & Hochstetler, A. (2007). Prison rioters: Exploring infraction characteristics, risk factors, social correlates, and criminal careers. *Psychological Reports, 100*, 407-419.
- Griffin, M. L., & Hepburn, J. R. (2006). The effect of gang affiliation on violence misconduct among inmates during the early years of confinement. *Criminal Justice and Behavior, 33*, 419-448.
- Harer, M. D., & Steffensmeier, D. J. (1996). Race and prison violence. *Criminology, 34*, 323-351.
- Hayner, N. S., & Ash, E. (1940). The prison as a community. *American Sociological Review, 5*, 577-583.
- Hewitt, J. D., Poole, E. D., & Regoli, R. M. (1984). Self-reported and observed rule-breaking in prison: A look at disciplinary response. *Justice Quarterly, 1*, 437-448.
- Hochstetler, A., & DeLisi, M. (2005). Importation, deprivation, and varieties of serving time: An integrated-lifestyle-exposure model of prison offending. *Journal of Criminal Justice, 33*, 257-266.
- Homant, R. J., & Witkowski, M. J. (2003). Prison deviance as a predictor of general deviance: Some correlational evidence from Project GANGMILL. *Journal of Gang Research, 10*, 65-75.
- Irwin, J., & Cressey, D. R. (1962). Thieves, convicts and the inmate culture. *Social Problems, 10*, 142-155.
- Jiang, S., & Fisher-Giorlando, M. (2002). Inmate misconduct: A test of the deprivation, importation, and situational models. *The Prison Journal, 82*, 335-358.
- Juby, H., & Farrington, D. P. (2001). Disentangling the link between disrupted families and delinquency. *British Journal of Criminology, 41*, 22-40.
- Keith, T. Z. (2006). *Multiple regression and beyond*. Boston, MA: Pearson.
- Kinner, S. A., Alati, R., Najman, J. K., & Williams, G. M. (2007). Do paternal arrest and imprisonment lead to child behavior problems and substance use? A longitudinal analysis. *Journal of Child Psychology and Psychiatry, 48*, 1148-1156.
- Kuanliang, A., & Sorensen, J. (2008). Predictors of self-reported prison misconduct. *Criminal Justice Studies, 21*, 27-35.

- Kuanliang, A., Sorensen, J., & Cunningham, M. (2008). Juvenile inmates in an adult prison system: Rates of disciplinary misconduct and violence. *Criminal Justice and Behavior, 35*, 1186-1201.
- Laub, J. H., Nagin, D. S., & Sampson, R. J. (1998). Trajectories of change in criminal offending: Good marriages and the desistance process. *American Sociological Review, 63*, 225-238.
- Laub, J. H., & Sampson, R. J. (2003). *Shared beginnings, divergent lives: Delinquent boys to age 70*. Cambridge, MA: Harvard University Press.
- Long, J. S. (1997). *Regression models for categorical and limited dependent variables: Advanced quantitative techniques in the social sciences (Number 7)*. Thousand Oaks, CA: SAGE.
- MacDonald, J. (1999). Violence and drug use in juvenile institutions. *Journal of Criminal Justice, 27*, 33-44.
- Massey, J. L., & Krohn, M. D. (1986). A longitudinal examination of an integrated social process model of deviant behavior. *Social Forces, 65*, 106-134.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*, 674-701.
- Moffitt, T. E. (2005). The new look of behavioral genetics in developmental psychopathology: Gene-environment interplay in antisocial behaviors. *Psychological Bulletin, 131*, 533-554.
- Millon, T. (1993). *MACI manual*. Minneapolis, MN: National Computer Systems.
- Nagin, D. S., & Paternoster, R. (2000). Population heterogeneity and state dependence: State of evidence and directions for future research. *Journal of Quantitative Criminology, 16*, 117-144.
- Payne, B. K., & Gainey, R. R. (2005). *Family violence and criminal justice: A life-course perspective* (2nd ed.). Cincinnati, OH: Anderson.
- Piquero, A. R. (2004). Somewhere between persistence and desistance: The intermittency of criminal careers. In S. Maruna & R. Immarigeon (Eds.), *After crime and punishment: Pathways to offender reintegration* (pp. 102-125). Portland, OR: Willan.
- Piquero, A. R., Brame, R., & Lynam, D. (2004). Studying criminal career length through early adulthood among serious offenders. *Crime & Delinquency, 50*, 412-435.
- Piquero, A. R., Farrington, D. P., & Blumstein, A. (2003). The criminal career paradigm. In M. Tonry (Ed.), *Crime and justice: A review of research* (Vol. 30, pp. 359-506). Chicago, IL: University of Chicago Press.
- Poole, E. D., & Regoli, R. M. (1983). Violence in juvenile institutions: A comparative study. *Criminology, 21*, 213-232.
- Rhodes, W. (1989). The criminal career: Estimates of the duration and frequency of crime commission. *Journal of Quantitative Criminology, 5*, 3-32.
- Robins, L. N. (2005). Explaining when arrests end for serious juvenile offenders: Comments on the Sampson and Laub study. *Annals of the American Academy of Political and Social Science, 602*, 57-72.
- Sampson, R. J., & Laub, J. H. (1993). *Crime in the making: Pathways and turning points through life*. Cambridge, MA: Harvard University Press.
- Sampson, R. J., & Laub, J. H. (2005). When prediction fails: From crime-prone boys to heterogeneity in adulthood. *Annals of the American Academy of Political and Social Science, 602*, 73-79.
- Schroeder, L. D., Sjoquist, D. L., & Stephan, P. E. (1986). *Understanding regression analysis: An introductory guide*. Newbury Park, CA: SAGE.

- Sickmund, M. (2004). *Juveniles in corrections*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Partnerships for Safer Communities.
- Smith, D. R., & Smith, W. R. (1984). Patterns of delinquent careers: An assessment of three perspectives. *Social Science Research*, 13, 129-158.
- Sorensen, J. R., & Cunningham, M. D. (2007). Operationalizing risk: The influence of measurement choice on the prevalence and correlates of prison violence among incarcerated murderers. *Journal of Criminal Justice*, 35, 546-555.
- Sorensen, J., & Cunningham, M. D. (2010). Conviction offense and prison violence: A comparative study of murderers and other offenders. *Crime & Delinquency*, 56, 103-125.
- Sorensen, J., Wrinkle, R., & Gutierrez, A. (1998). Patterns of rule-violating behaviors and adjustment to incarceration among murderers. *The Prison Journal*, 78, 222-231.
- Steiner, B., & Wooldredge, J. (2008). Inmate versus environmental effects of prison rule violations. *Criminal Justice and Behavior*, 35, 438-456.
- Sutherland, E. (1947). *Principles of criminology* (4th ed.). Philadelphia, PA: J. B. Lippincott.
- Sykes, G. M. (1958). *The society of captives: A study of maximum security prison*. Princeton, NJ: Princeton University Press.
- Taylor, J., Kemper, T. S., & Kistner, J. A. (2007). Predicting institutional maladjustment in severe male juvenile delinquents from criminal history and personality/clinical subtype. *Criminal Justice and Behavior*, 34, 769-780.
- Taylor, J., Kemper, T. S., Loney, B. R., & Kistner, J. A. (2006). Classification of severe male juvenile offenders using the MACI clinical and personality scales. *Journal of Clinical Child and Adolescent Psychiatry*, 35, 90-102.
- Thomas, C. W. (1973). Prisonization or resocialization: A study of external factors associated with the impact of imprisonment. *Journal of Research in Crime and Delinquency*, 10, 13-21.
- Thomas, C. W. (1977). Theoretical perspectives on prisonization: A comparison of the importation and deprivation models. *Journal of Criminal Law and Criminology*, 68, 135-145.
- Thomas, C. W., & Foster, S. C. (1972). Prisonization in the inmate counterculture. *Social Problems*, 20, 229-239.
- Trulson, C. R. (2007). Determinants of disruption: Institutional misconduct among state-committed delinquents. *Youth Violence and Juvenile Justice*, 5, 1-28.
- Trulson, C. R., DeLisi, M., Caudill, J. W., Belshaw, S., & Marquart, J. W. (2010). Delinquent careers behind bars. *Criminal Justice Review*, 35, 200-219.
- Trulson, C. R., DeLisi, M., & Marquart, J. W. (2011). Institutional misconduct, delinquent background, and rearrest frequency among serious and violent delinquent offenders. *Crime & Delinquency*, 57, 709-731.
- Trulson, C. R., Marquart, J. W., Hemmens, C., & Carroll, L. (2008). Racial desegregation in prisons. *The Prison Journal*, 88, 270-299.
- Van Dine, S., Conrad, J. P., & Dinitz, S. (1979). The incapacitation of the chronic thug. *Journal of Criminal Law & Criminology*, 70, 125-135.
- Van Voorhis, P. (1994). Measuring prison disciplinary problems: A multiple indicators approach to understanding prison adjustment. *Justice Quarterly*, 11, 679-710.
- Vaughn, M. G., Howard, M. O., & DeLisi, M. (2008). Psychopathic personality traits and delinquent careers: An empirical examination. *International Journal of Law and Psychiatry*, 31, 407-416.

- Walters, G. D. (2007a). Predicting institutional adjustment with the Psychological Inventory of Criminal Thinking Styles Composite Scales: Replication and extension. *Legal and Criminological Psychology, 12*, 69-81.
- Walters, G. D. (2007b). Using Poisson class regression to analyze count data in correctional and forensic psychology. *Criminal Justice and Behavior, 34*, 1659-1674.
- Wilson, J. Q., & Herrnstein, R. J. (1985). *Crime and human nature: The definitive study of the causes of crime*. New York, NY: Free Press.
- Wolfgang, M. E., Figlio, R. M., & Sellin, T. (1972). *Delinquency in a birth cohort*. Chicago, IL: University of Chicago Press.
- Wright, J. P., Beaver, K. M., DeLisi, M., & Vaughn, M. G. (2008). Evidence of negligible parenting influences on self-control, delinquent peers, and delinquency in a sample of twins. *Justice Quarterly, 25*, 544-569.
- Zingraff, M. T. (1980). Inmate assimilation: A comparison of male and female delinquents. *Criminal Justice and Behavior, 7*, 275-292.