

Different Pathways to Juvenile Delinquency: Characteristics of Early and Late Starters in a Sample of Previously Incarcerated Youth

**Kevin W. Alltucker, Ph.D.,^{1,5} Michael Bullis, Ph.D.,² Daniel Close, Ph.D.,³
and Paul Yovanoff, Ph.D.⁴**

Published online: 1 July 2006

We examined the differences between early and late start juvenile delinquents in a sample of 531 previously incarcerated youth in Oregon's juvenile justice system. Data were analyzed with logistic regression to predict early start delinquency based on four explanatory variables: foster care experience, family criminality, special education disability, and socioeconomic status. Youth with foster care experience were four times more likely to be early start delinquents than youth with no foster care experience. Youth with a family member convicted of a felony were two times more likely to be early start delinquents than youth with no family felony. Implications for future research are discussed, as well as implications for practice and policy. We suggest that future studies examine differences between male and female delinquents, the effects of foster care on children, and interfamilial processes that facilitate criminal behavior. Efforts to support children and families at risk of abuse and neglect should be reexamined in light of the results of our study, which adds to the emerging knowledge base regarding the relationships between violence experienced in early childhood, and future criminal behavior.

KEY WORDS: delinquency; early start; risk; foster care; child welfare.

¹Postdoctoral Scientist, Counseling Psychology and Human Service Program, University of Oregon, Eugene, OR.

²Professor, Secondary Special Education and Transitions Research, University of Oregon, Eugene, OR.

³Program Director, Family and Human Services, University of Oregon, Eugene, OR.

⁴Research Associate, Educational Leadership, University of Oregon, Eugene, OR.

⁵Correspondence should be directed to Kevin W. Alltucker, 5251 University of Oregon, Eugene, OR, 97403; e-mail: kalltuck@uoregon.edu. Telephone: 541-346-0024.

Juvenile delinquency and the resulting negative effects on youth, families, and society, is a significant problem in the United States (Holmes, Slaughter, & Kashani, 2001). In 2001, juveniles accounted for 17% of all arrests and 15% of all violent crime arrests, representing approximately 2.3 million young people under the age of 18 years (Snyder, 2003). Juvenile crime impacts the individual, as well as their family, neighborhood, and community at large – all at substantial monetary cost. Cohen (1998) estimated the costs (e.g., law enforcement, juvenile justice, incarceration, treatment, other societal costs) of one high risk juvenile offender engaging in four years of crime as a juvenile, then 10 years of subsequent adult criminality, ranged from \$1.7 million to \$2.3 million (in 1997 dollars).

Identifying and intervening with youth who are likely to become chronic adult criminals is therefore an important goal for our society (Hawkins et al., 2000). Given that youth arrested before age 14 are two to three times more likely to become chronic adult offenders, compared with youth arrested after age 14 (Loeber & Farrington, 2000), it is important to understand the differences between these two groups so that effective interventions can be designed and implemented.

One of the more clearly delineated predictors for ongoing criminal behavior is the age of first arrest (Eddy, Reid & Curry, 2002). Although different labels are given to juvenile delinquents depending on their age at first arrest, researchers have generally agreed on two groups: early starters and late starters (Moffitt, Caspi, Dickson, Silva, & Stanton 1996; Patterson & Yoerger, 2002). The literature identifies early starters as arrested before, and including age 14, and late starters arrested after age 14 (Patterson & Yoerger, 2002).

There is evidence that early starters often have a criminal development process that takes place over several years, and that contextual variables (individual, family and community) influence the process (Cicchetti, 1993). Most research supports a developmental course that describes a youth's entry into juvenile delinquency as a series of incremental criminal acts that begin with relatively minor property crimes and, in some cases, progress to more serious violent crimes (e.g. Loeber & Farrington, 2001). Therefore, increased knowledge regarding the effects of contextual variables on the developmental trajectory leading up to a youth's first arrest is important. Accurately identifying the different pathways experienced by early and late start juvenile delinquents will help inform both practice and policy pertaining to these youth (Stouthammer-Loeber, Loeber, Farrington, Wickstrom, & Wei, 2002)

A potent contextual variable associated with negative developmental outcomes is child abuse and neglect (Egeland, Yates, Appleyard, & van Dulman, 2002). Child maltreatment, including child physical abuse, emotional abuse, sexual abuse, and child neglect, is associated with future violent behavior (Widom, 1989). In 2001, there were 903,000 victims of child abuse and neglect in the United States (U.S Department of Health and Human Services (a), 2003). Approximately 275,000 children were placed in foster care in 2001 as a result of child abuse or neglect. Most of these children were under seven years of age (U.S Department of

Health and Human Services (b), 2003). In total there were an estimated 542,000 children in foster care in 2001 (U.S Department of Health and Human Services (b), 2003). Not only is the original maltreatment damaging to children, but foster care may have additional negative effects. Instability of foster care resulting in multiple placements can also negatively affect children (Redding, Fried, & Britner, 2000). Compared to other children, foster youth are more likely to experience negative life outcomes including diminished academic achievement, behavior problems, decreased mental health, and increased risk of delinquency (Harden, 2004). Given the high numbers of children in foster care due to child maltreatment, it is noteworthy that little research effort has been made to study the correlations between child maltreatment, foster care, and juvenile delinquency (Jonson-Reid, 2002).

Family criminality also is a predictor for juvenile offending. For example, as part of the Pittsburgh Youth Study, Farrington and his colleagues (Farrington, Jolliffe, Loeber, Stouthammer-Loeber & Kalb, 2001) examined three generations of families and found that juvenile offenders were highly concentrated in families—8% of the families included in the study accounted for 43% of all arrests. In another study, Preski and Shelton (2001) found that parent and sibling criminality was significantly related to juvenile offending. Although the precise process by which family criminality is mediated is not well understood, several researchers have commented that decreased parental quality and decreased family functioning might help explain the effects (Brendgen, Vitaro, Tremblay, & Wanner, 2002). Family criminality is then an important characteristic to consider when identifying needs for youth intervention and support.

Juvenile offenders are more likely to have a special education disability as compared with the general population. Roughly 30% to 50% of juvenile offenders have a documented disability, compared with about 13% of the general population (Frieden, 2003). Of juvenile offenders with disabilities, 40% have learning disabilities, and 46% have emotional/behavioral disabilities (Zabel & Nigro, 2001). Despite these elevated numbers, little is known about the developmental relationships between special education disabilities and juvenile offending (Archwamety & Katsiyannis, 2000). In light of the meager knowledge base on juvenile delinquents and special education, it is meaningful to further understand this relationship.

Finally, there is evidence that socioeconomic status (SES) is related to juvenile offending. The literature is replete with the theorized importance of class and social standing in the context of juvenile delinquency (e.g. Hagan, 1997), and for many social scientists, the relationship between low SES and family functioning, child development, and subsequent juvenile offending, is axiomatic (Bornstein & Bradley, 2003). Nonetheless, the literature contains disparate views regarding the empirical measurement of SES (Farnsworth, Thornberry, Krohn & Lizotte, 1994). Although many studies have identified low SES as being correlated with juvenile offending (Stouthamer et al., 2002), others have found no predictive validity for low SES and juvenile offending (Tittle & Meier, 1991), or that *higher* SES, as

opposed to lower SES, is correlated with juvenile offending (Marsh, Clement, Stoughton, & Marckioni, 1986).

Recognizing the importance of identifying and intervening with youth who are more likely to become chronic offenders, this article examines the differences between early and late starters in a sample of previously incarcerated youth, across four explanatory contextual variables: (a) foster care experience; (b) family criminality; (c) special education disability, and; (d) socioeconomic status. Specifically, we addressed the following research question: Do early start juvenile delinquents and late start juvenile delinquents differ on foster care experience, family criminality, special education, and socioeconomic status?

METHOD

This study was completed as part of the TRACS (*Transition Research on Adjudicated Youth in Community Settings*) study, a project conducted through a Field Initiated Research grant for the U. S. Department of Education, Office of Special Education and Rehabilitative Services, from October 1993 through December 1999, in the Institute on Violence and Destructive Behavior at the University of Oregon (Bullis, Yovanoff, Havel, & Mueller, 2002). The TRACS study was a five-year follow along, longitudinal investigation of outcomes of 531 incarcerated juvenile offenders as they transitioned from Oregon Youth Authority (OYA) correctional facilities, to their families and communities. Of this sample, 277 (52%) of the population were adjudicated prior to age 14, and were classified for this study as early start juvenile delinquents. Participants were identified and recruited prior to leaving the youth correctional facilities. Prior history and demographic data were gathered while youth were in close custody.

Selection and Recruitment of Participants

Participant recruitment began in the spring of 1994, and continued through the first months of 1998. Data collection began in April 1994, and continued through December 1998. Current OYA staff, as well as retired staff, were hired and trained by project personnel to (a) recruit participants, (b) secure informed consent, and (c) complete data collection instruments from file review and interviews with the adjudicated youth, their families, and OYA parole officers. The sample was obtained from two secure-setting facilities and three work camp facilities.

One secure facility housed both male and female offenders in nine secure living units, and had a total capacity of 181 youth. Individuals were grouped in the living units (or "cottages") according to sex, age, and type of antisocial behavior. The living units were sampled monthly, with one or two youth who were expected to be released in that month, included in that particular sample.

The second secure facility was an all-male complex, consisting of 19 secure living units, and had a total capacity of 318 youth. As with the other secure facility, the cottages were segregated by sex, age and type of antisocial behavior. The cottages were sampled on a bimonthly basis, with two or three youth who were expected to be released within two months, included in that particular sample.

The sampling procedure for the work camps differed from the procedure used for secure facilities. There were fewer youth residing in the camps, and therefore, samples were obtained on an ongoing basis as youth prepared to exit the camps.

Initially 620 youth were recruited and started in the TRACS project. Some youth chose not to continue in the study after the initial data collection, and others were disqualified due to their long-term incarceration schedule. Of the 620 youth originally included in the sample, 531 youth exited OYA and returned to the community. Thus, 531 youth constituted the TRACS project sample, and therefore, the sample for this study.

Sample to Population Comparison

The TRACS sample was compared with the general OYA population, and the OYA special education population, across essential variables included in the TRACS study. The OYA general population data, and the special education population data, were obtained between 1993 and 1998, roughly corresponding to the time frame of the TRACS study. The OYA general population information was obtained from OYA. The OYA special education population information was secured from the Oregon Department of Education.

Table I summarizes the comparisons between the TRACS sample and the OYA general population. Table II summarizes the comparisons between the TRACS sample and the OYA special education population. Compared to the general OYA population, the TRACS sample had a larger proportion of females (17% compared to 12%), was slightly younger (15.7 years compared to 16.1 years), had fewer property crime offenses (54% compared to 66%), and more person-related offenses (57% compared to 51%). Compared to the OYA special education population, the TRACS sample had more females (14% compared to 7%), and was slightly older at commitment (16.6 years compared to 16.2 years). The TRACS participants compared similarly on mental retardation, hearing, and speech and language disabilities. There were differences on emotional disabilities, specific learning disabilities, and the number of special education classifications. Youth in the TRACS study had fewer emotional disabilities than the OYA special education population (52% compared to 58%), more specific learning disabilities (48% compared to 36%), and fewer multiple special education classifications (10% compared to 34%).

Table III presents bivariate comparisons between demographic characteristics and early/late start delinquency. Most of the early starters were male (78%),

Table I. Comparison of all TRACS Participants Compared to General OYA Population 1993 through 1998

Demographic Characteristics	TRACS Sample		OYA Sample		χ^2 or t^*	df	p
	n	%	N	%			
Sex							
Male	433	83%	2634	88%	19.45	1	.01
Female	88	17%	360	12%			
Valid n/N	521	100%	2994	100%			
Minority Status							
Non Minority	417	80%	2333	78%	.98	1	ns
Minority	103	20%	648	22%			
Valid n/N	520	100%	2981	100%			
Age at Commitment							
Mean		15.7		16.1	4.44*	3513	.00
Valid n/N	521		2994				
Type of Crime							
Property-related	285	54%	2010	66%	28.63	1	.01
Non property-related	246	46%	1047	34%			
Valid n/N	531	100%	3057	100%			
Type of Crime							
Person-related	305	57%	1546	51%	8.54	1	.01
Non person related	226	43%	1511	49%			
Valid n/N	531	100%	3057	100%			

Source: Adapted from TRACS final report (Bullis et al, 2001, Table I.5).

* denotes t .

ns denotes non significant.

Table II. Comparison of TRACS Special Education Participants with OYA Special Education Population 1993 through 1998

Demographic Characteristics	TRACS Sample		OYA Sample		χ^2 , t^* , or z^{**}	df	p
	n	%	n	%			
Sex							
Male	261	86%	1367	93%	18.72	1	.01
Female	44	14%	102	7%			
Valid n/N	305	100%	1469	100%			
Age at Commitment							
Mean		16.6		16.2	3.78*	465.57	.00
Valid n/N	294		1469				
Primary Disabilities							
Mental Retardation	5	2%	15	1%	.77**	304	.22
Hearing	4	1%	15	1%	.24**	304	.41
Speech/Language	5	2%	37	3%	1.27**	304	.10
Emotional Disability	159	52%	847	58%	2.07**	304	.05
Specific Learning Disability	119	48%	531	36%	4.31**	304	.01
Multiple Special Education Classifications							
No	274	90%	976	66%	66.42	1	.01
Yes	31	10%	493	34%			

Source: Adapted from TRACS final report (Bullis et al, 2001, Table 1.3).

* denotes t .

** denotes z .

Table III. Summary of Demographic Characteristics

Demographic Characteristic	Early Starters	Late Starters	χ^2 or t	df	p	Odds Ratio e^{β} (95% C.I.)
Sex						
Male	78%	91%	7.99	1	.01	1.98 (1.23, 3.19)
Female	22%	9%				
Age at Exit Interview	16.0 years	17.3 years	-9.9	475	.00	
Ethnic Minority						
Yes	15%	23%	4.71	1	.03	.59 (.37, .95)
No	85%	77%				
Special Education Disability						
Yes	64%	56%	1.97	1	.16	1.31 (.90, 1.90)
No	36%	44%				
Learning Disability	24%	31%	5.21	1	.02	.59 (.38, .93)
Emotional Disability	41%	30%	7.45	1	.01	1.74 (1.17, 2.60)
Previously Placed in a Supervised Community Living Arrangement (Foster care)	78%	45%	43.89	1	.00	4.31 (2.75, 6.75)
Family Felony	42%	30%	17.2	1	.00	2.20 (1.51, 3.20)
Average Hollingshead SES score	40.4	35.4	-.48	250	.63	

16 years old when they were released from custody, not members of a minority population (85%), had a diagnosed special education disability (64%), and had previous foster care placements (78%). Almost half (42%) of the early starters had a family member convicted of a felony.

Data Collection Instruments and Procedures

The data collection instruments used in the TRACS study included previously developed instruments from other research projects, and instruments developed specifically for the TRACS investigation. During the first six months of the project, instruments were developed, reviewed, refined and piloted to ensure their validity and reliability. All of the instruments used in the TRACS study were accordant with the conceptual model that incorporated an ecodevelopmental framework (Bronfenbrenner, 1979) from which to examine variables from several domains, including individual, family, peer, school, and community.

Institutional Data Collection Instruments

After informed consent was obtained, initial data collection forms were administered to the youth by trained project staff. There were five separate data collection forms: (a) demographic, (b) level of service, (c) Social Skill Rating Form, (d) SES, and (e) interviews. The demographic, level of service, and the

Social Skill Rating Form were completed by staff based on review of institutional records. These data collection events usually took place on site before the youth exited the correctional facility. Due to scheduling conflicts, some of the interviews and data collection took place via telephone. In an effort to increase validity and reliability of the collected data, the project staff was required to complete a comprehensive 15-hour training session, and also demonstrate a reliability agreement index of 0.95 with a pre-developed interview form, before they were allowed to administer the interviews and data collection with the youth participating in the project. The SES form was derived from the Hollingshead Socio-Status Index (Hollingshead, 1975), which collected information on (a) parent education, (b) occupation, (c) sex, and (d) marital status. Variables collected were synthesized mathematically to produce a score, which was used to classify five categories of family SES, ranging from lower income/status to higher income/status: (a) unskilled laborers, (b) semiskilled workers, (c) skilled workers, (d) medium business/minor professional, and (e) major business/professional.

Variables

We included four explanatory, or predictor variables in this study: (a) foster care experience; (b) familial felony; (c) special education, and; (d) SES. These explanatory factors were selected from the TRACS database because they were conceptually aligned with the ecodevelopmental model that emerged from the literature review (Capaldi, DeGarmo, Patterson, & Forgatch, 2003; Eddy et al., 2002; Kelley, Loeber, Keenan, & DeLamtre, 1997; Patterson, Capaldi, & Bank, 1991). We chose the variable *familial felony*, as opposed to the more widely studied *familial criminality*, because it more closely matched the data. We believed that a felony conviction was a strong indicator of familial criminality because a felony conviction was a court-recorded event and represented a more serious subset of criminality. All of the predictor variables were coded dichotomously. For example, foster care experience, family felony, special education, and early start juvenile delinquency were recorded as *yes* or *no*. The variable SES was recorded *high* or *low* based upon the five factor Hollingshead scale used to collect the data. The two highest SES classifications were collapsed into one category that was coded *high*, and the three lowest SES classifications were collapsed into one category that was coded *low*.

Because of our interest in developmental trajectories of juvenile delinquency, we chose early start juvenile delinquency as the outcome variable. Early start juvenile delinquency was demonstrated as an important outcome variable in many of the studies we reviewed (e.g. Offord, Lipman, & Duku, 2001; Patterson et al., 1998). Instead of age at first arrest, we used the age at first adjudication as the grouping characteristic for early start juvenile delinquents because the TRACS study collected data for adjudication. We used age 14 as the difference between

early and late starters because it conceptually matched the literature we reviewed (Piquero & Chung, 2001), and because the median age of first adjudication for a felony in the sample was 14.0 years.

Data Analyses

We used logistic regression to predict the likelihood of early start juvenile delinquency, based on the dichotomous nature of the explanatory variables. We tested the null hypothesis at the .05 alpha level, calculated odds ratios, and 95% confidence intervals (Hosmer & Lemeshow, 2000).

RESULTS

RQ1: Do early start juvenile delinquents and late start juvenile delinquents differ on foster care experience, family criminality, special education, and socioeconomic status?

Table IV summarizes the final logistic regression model for early start juvenile delinquency. The model identified two contextual variables as statistically significant predictors of early start juvenile delinquency for our sample. Youth with previous foster care experience were four times more likely to be early start juvenile delinquents ($OR = 4.05, p < .01$), compared with youth in the sample with no previous foster care experience. Similarly, youth with a mother, father, or sibling convicted of a felony, were two times more likely to be early start juvenile delinquents ($OR = 1.9, p < .01$) compared to youth with no mother, father, or sibling felony convictions. The model did not identify special education disability or low SES as significant predictors for the outcome variable, early start juvenile delinquency.

DISCUSSION

Before discussing the results of this study, we should highlight three limitations when interpreting the results. First, the TRACS study was a prospective

Table IV. Logistic Regression Predictive Model for Early Start Juvenile Delinquency

Explanatory Variable	β	S.E	Odds Ratio (e^{β}) 95% CI
Previously Placed in a Supervised Community Living Arrangement (Foster Care)	1.40*	.24	4.05 (2.51, 6.52)
Family Felony	.64*	.23	1.90 (1.22, 2.95)
Special Education Disability	.19	.23	1.21 (.78, 1.88)
SES	-.06	.22	.95 (.61, 1.47)
Constant	-1.70*	.22	.18

* $p \leq .01$.

survey research project (Bullis et al., 2001), and therefore, was non-experimental. Accordingly, causal relationships between explanatory variables and youth outcomes cannot be determined. Second, participation in the study was voluntary, and was limited to the population of adjudicated youth contained within the Oregon Youth Authority (OYA) during the duration of the study. As such, the TRACS sample constituted a nonprobability convenience sample. Although this type of sample is not uncommon in social science research (Shadish et al., 2001), precautions should be taken when interpreting the results.

Third, there are generalizability issues pertaining to the TRACS study, and therefore the present study. The TRACS study was performed on a relatively small, mostly white male population of adjudicated juvenile delinquents in Oregon, and therefore, may not be representative of youth incarcerated in other states, adolescent females, or youth of color.

Despite these limitations, the results of this study add to the existing knowledge base regarding the differences between early start and late start juvenile delinquents. We first discuss the results of the study's research questions and then discuss the implications for further research, and implications for practice and policy.

Adjudicated youth in this study who had a previous foster care experience were *more than four times more likely* to be early start juvenile delinquents compared with youth with no foster care experience ($OR = 4.05$). This finding is relevant because of the close association that foster care has with child maltreatment (DePanfilis & Zuravin, 2002), and the known relationship between maltreatment and future criminal behavior (Kingree, Phan, & Thompson, 2003).

Additionally, *youth with a family member convicted of a felony were nearly two times more likely to be early start juvenile delinquents* compared to youth with no family felony ($OR = 1.90$). This finding supported the existing literature that has documented robust relationships between familial criminality and intergenerational criminogenic behaviors (i.e., Preski & Shelton, 2001). Although the exact processes by which family felony mediates family disruption and decreased family management was not illuminated in this study, the results indicated that parental and sibling criminal behavior were important variables in the developmental trajectory of these juvenile offenders.

Special education disability and low SES did not exhibit statistical significance with regard to early start juvenile delinquency. The lack of significance regarding special education disability is somewhat puzzling, given what is known about the relationships between disabilities and delinquency. In any case, this result points to the importance of deepening the understanding into the role that special education disabilities might have on the onset of juvenile delinquency. The SES result is less surprising because of the relatively coarse measure used in this study. It is possible that the dichotomized Hollingshead index did not fully capture the entire spectrum of nuanced effects that influenced the development of juvenile delinquency for youth in our sample.

We offer three implications for future research. The first implication is that further examination is needed of sex differences between early start juvenile delinquents and late start juvenile delinquents. There were intriguing variances revealed in the demographic analyses. For example, in this study, there were more female early start juvenile delinquents than female late start delinquents. These data suggest differences from the existing literature, which has identified females as being more likely to be late start juvenile offenders than early start juvenile offenders. Further exploration of female trends in this study could reveal information that could be used to supplement the emerging body of research on female antisocial behavior and female juvenile delinquency.

The second implication for future research involves foster care. We would be presumptuous to blame foster care for all of the ills that beset youth in this study. Very likely, youth who entered foster care in this study had multiple hardships before they entered foster care that might have contributed to their decreased well-being. Therefore, future research should consider more closely examining the development of children and youth in foster care, beginning with a baseline of biological and psychosocial measurements. Additional research is needed to more clearly define the reasons why children are placed in foster care, and the various effects that foster care might have on children's development. For example, differences associated with length of foster care placement, age of child at entry to foster care, and the number of foster care placements, would help to increase the understanding about the growing population of children and youth in foster care. Increased efforts toward prevention research should be conducted to explore possible ways in which to decrease the number of children and youth entering foster care each year. Also, continued research regarding different types of foster care, such as Multidimensional Treatment Foster Care (Chamberlain, Fisher, & Moore, 2002) should be explored for the purpose of improving the existing foster care system.

The third implication is that additional research efforts should be directed toward exploring the microsocial interfamilial processes that facilitate the intergenerational transmission of criminal behavior. Information gained from studies of this nature can be used to improve our understanding on how to effectively break the cycle of family criminal behaviors, and thereby possibly decreasing overall crime rates.

This study provides salient information that can augment practice and policy. In broad terms, this study suggests that family experiences for early start juvenile delinquents involved in Oregon's juvenile justice system play an important role in the quality of life enjoyed by these youth. Specifically, the statistically significant predictor variables for early start juvenile delinquency (foster care experience and family felony), in the context of incarcerated youth, could be used to illuminate areas within the juvenile justice system that could be modified to improve the lives of youth and families involved. Using the occurrence of foster care and family felony as indicators of increased needs for youth may be a

catalyst for designing more effective supports for youth before they become engulfed in the juvenile justice system. At the very least, violent and dangerous households might be the training grounds for future criminals, and the millions of children who are being abused and neglected today, might be the inmates of tomorrow. Policy makers interested in decreasing crime in this country should reexamine their efforts to support children and families at high risk of abuse and neglect.

REFERENCES

- Archwamety, T., & Katsiyannis, A. (2000). Academic remediation, parole violations, and recidivism rates among delinquent youths. *Remedial and Special Education, 21*, 161–170.
- Brendgen, M., Vitaro, F., Tremblay, R. E., & Wanner, B. (2002). Parent and peer effects on delinquency-related violence and dating violence: A test of two mediational models. *Social Development, 11*, 225–244.
- Bornstein, M. H., & Bradley, R. H. (2003). *Socioeconomic status, parenting, and child development*. Malway, NJ: Lawrence Earlbaum Associates.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bullis, M., Yovanoff, P., Mueller, G., & Havel, E. (2002). Life on the “Outs” - Examination of the facility-to-community transition of incarcerated youth. *Exceptional Children, 69*, 7–23.
- Chamberlain, P., Fisher, P. A., & Moore, K. (2002). Multidimensional Treatment Foster Care: Applications of the OSLC intervention model to high-risk youth and their families. J. B. Reid, G. R. Patterson, & J. Snyder (Eds.), *Antisocial behavior in children and adolescents: A developmental model for intervention* (pp. 203–218). Washington, D.C.: American Psychological Association.
- Cicchetti, D. (1993). Developmental psychopathology: Reactions, reflections, projections. *Developmental Review, 13*, 471–502.
- Cohen, M. A., (1998). The monetary value of saving a high-risk youth. *Journal of Quantitative Criminology, 14*, 5–33.
- DePanfilis, D., & Zuravin, S. J. (2002). The effect of services on the recurrence of child maltreatment. *Child Abuse and Neglect, 26*, 187–205.
- Eddy, J. M., Reid, J. B., & Curry, V. (2002). The etiology of youth antisocial behavior, delinquency, and violence and a public health approach to prevention. In M. R. Shinn, H. Walker, & G. Stoner (Eds.), *Interventions for academic and behavior problems II: Preventive and remedial approaches* (pp.27–51). Bethesda, MD: National Association of School Psychologists.
- Egeland, B., Yates, T., Appleyard, K., & van Dulmen, M. (2002). The long-term consequences of maltreatment in the early years: A developmental pathway model to antisocial behavior. *Children's Services: Social Policy, Research, and Practice, 5*, 249–260.
- Farrington, D. P., Jolliffe, D., Loeber, R., Stouthamer-Loeber, M., & Kalb, L. M. (2001). The concentration of offenders in families, and family criminality in the prediction of boys' delinquency. *Journal of Adolescence, 24*, 579–596.
- Farnsworth, M., Thornberry, T. P., Krohn, M. D., & Lizotte, A. J. (1994). Measurement in the study of class and delinquency: Integrating theory and research. *Journal of Research in Crime and Delinquency, 31*, 32–61.
- Frieden, L. (2003). *Addressing the needs of youth with disabilities in the juvenile justice system: The current status of evidence-based research*. Washington, DC: National Council on Disability.
- Hagan, J. (1997). Crime and capitalization: Toward a developmental theory of street crime in America. In T. Thornberry (Ed.), *Developmental theories of crime and delinquency* (pp. 287–308). New Brunswick, NJ: Transaction Publishers.
- Harden, B. J. (2004). Safety and stability for foster children: A developmental perspective. *The Future of Children, 14*, 31–47.

- Hawkins, et al. (2000). *Predictors of youth violence*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
- Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University, New Haven, CT.
- Holmes, S. E., Slaughter, J. R., & Kashani, J. (2001). Risk factors in childhood that lead to the development of conduct disorder and antisocial personality disorder. *Child Psychiatry and Human Development*, 31, 183–193.
- Hosmer, D., & Lemeshow, S. (2000). *Applied logistic regression*. New York: John Wiley.
- Johnson-Reid, M. (2002). Exploring the relationship between child welfare interventions and juvenile corrections involvement. *American Journal of Orthopsychiatry*, 72, 559–576.
- Kelley, B. T., Loeber, R., Keenan, K., & Delamatre, M. (1997). *Developmental pathways in boys' disruptive and delinquent behavior*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
- Kingree, J. B., Phan, D., & Thompson, M. (2003). Child maltreatment and recidivism among adolescent detainees. *Criminal Justice & Behavior*, 30, 623–643.
- Loeber, R., & Farrington, D. P. (2001). *Child delinquents: Development, intervention, and service needs*. Thousand Oaks, CA: Sage.
- Loeber, R., & Farrington, D. P. (2000). Young children who commit crime: Epidemiology, developmental origins, risk factors, early interventions, and policy implications. *Development and Psychopathology*, 12, 737–762.
- Marsh, D. T., Clement, J., Stoughton, N. L., & Markioni, F. (1986). Patterns of juvenile criminal activity as a function of demographic, family, and individual variables. *Journal of Clinical Psychology*, 42, 658–663.
- Moffitt, T. E., Caspi, A., Dickson, N., Silva, P., & Stanton, W. (1996). Childhood-onset versus adolescent-onset antisocial conduct problems in males: Natural history from ages 3 to 18 years. *Development and Psychopathology*, 8, 399–424.
- Offord, D. R., Lipman, E. L., & Duku, E. K. (2003). Epidemiology of problem behavior up to age 12 years. In R. Loeber, & D. P. Farrington (Eds.), *Child delinquents: development, intervention, and service needs* (pp. 95–116). Thousand Oaks, CA: Sage.
- Patterson, G. R., Forgatch, M. S., Yoerger, K. L., & Stoolmiller, M. (1998). Variables that initiate and maintain an early-onset trajectory for juvenile offending. *Development and Psychopathology*, 10, 531–547.
- Patterson, G. R., Crosby, L., & Vuchinich, S. (1992). Predicting risk for early police arrest. *Journal of Quantitative Criminology*, 8, 335–355.
- Patterson, G. R., & Yoerger, K. (2002). A developmental model for early- and late-onset delinquency. In J. B. Reid, G. R. Patterson, & J. Synder (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. xx–xx). Washington, DC: American Psychological Association.
- Piquero, A. R., & Chung, H. L. (2001). On the relationship between gender, early onset, and the seriousness of offending. *Journal of Criminal Justice*, 29, 189–206.
- Preski, S., & Shelton, D. (2001). The role of contextual, child, and parent factors in predicting criminal outcomes in adolescence. *Issues in Mental Health Nursing*, 22, 197–205.
- Redding, R., Fried, C., & Britner, P. (2000). Predictors of placement outcomes in treatment foster care: Implications for foster parent selection and service delivery. *Journal of Child & Family Studies*, 9, 425–447.
- Runyan, D. K., & Gould, C. L. (1985). Foster care for child maltreatment: Impact on delinquent behavior. *Pediatrics*, 75, 562–568.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2001). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin Company.
- Smith, C. A., Farrington, D. P. (2004). Continuities in antisocial behavior and parenting across three generations. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 45, 230–247.
- Snyder, H. N. (2003). *Juvenile arrests 2001*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
- Stouthamer-Loeber, M., Loeber, R., Wei, E., Farrington, D. P., & Wikström, P. H. (2002). Risk and promotive effects in the explanation of persistent serious delinquency in boys. *Journal of Consulting and Clinical Psychology*, 70, 111–123.

- Taussig, H. N. (2002). Risk behaviors in maltreated youth placed in foster care: A longitudinal study of protective and vulnerability factors. *Child Abuse & Neglect*, 26, 1179–1199.
- Tittle, C. R., & Meier, R. F. (1991). Specifying the SES/delinquency relationship by social characteristics of contexts. *Journal of Research in Crime and Delinquency*, 28, 430–455.
- U. S. Department of Health & Human Services (a), Administration for Children and Families, Children's Bureau. (2003). *Child abuse and neglect national statistics*. Retrieved January 6, 2004 from <http://nccanch.acf.hhs.gov>
- U. S. Department of Health & Human Services (b), Administration for Children and Families, Children's Bureau. (2003). *Foster care national statistics*. Retrieved January 6, 2004 from <http://www.acf.hhs.gov/programs/cb/dis/afcars/publications/afcars.htm>
- Widom, C. S. (1989). The cycle of violence. *Science*, 244, 160–166.
- Zabel, R. H., & Nigro, F. A. (2001). The influence of special education experience and gender of juvenile offenders on academic achievement scores in reading, language, and mathematics. *Behavioral Disorders*, 26, 164–172.