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Steven R. Putansu
Editor-in-Chief

Gender and the Life-Course Theory of Crime: Developing a Model to Explain Women's Desistance from Delinquency

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Abstract

This paper evaluates whether a model that merges the factors identified by life-course and feminist pathways paradigms explains women and girls' offending. The paper attempts to replicate Sampson and Laub's (1993, 2003) life-course model using data from the 1958 Philadelphia Birth Cohort Study, identifying the contribution that life-course theory makes to Wolfgang et al.'s earlier analysis of the same data. The paper then compares the results for males and females. Finally, it adapts the model so that it suits females, integrating factors consistent with the feminist pathways framework.

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Introduction

Life-course theory argues that crime patterns vary across the course of an individual's life in response to different causal factors (Sampson and Laub 1993, 2005a, 2005b; Laub and Sampson 2003). Theorists in this paradigm argue that both persistent offending and desistance can be understood using the same framework and that there are certain life-altering events which are important in this regard (Sampson and Laub 2005b). For juvenile offending, Sampson and Laub (1993) identify the importance of the family structural context, as well as the role of school, peers and siblings. At the adult level, the theory stresses the importance of marriage, employment, the military, work, and residential change as providing 'knifing-off' opportunities that explain delinquent boys' desistance from adult crime. However, few life-course studies have focused on women and girls' criminality.

Feminist pathways analyses, which have focused on women and girls' offending, have identified a link between negative childhood experiences and female criminality. Specifically, these studies highlight coerced sex, a lack of parental guidance, a lack of positive male relationships, poverty, and marginality as factors that uniquely are experienced by women and that combine to produce pathways to criminality.

This paper begins by addressing the lacuna in the literature by replicating Sampson and Laub's (1993) life-course regression model using a sample that includes both male and female respondents, and comparing results for the two groups. Secondly, given that women experience the effect of socioeconomic context, race, and stigmatization (for example as criminal or delinquent) differently than men, and are socialized and controlled differently by institutions such as family and schools, the paper hypothesizes that a model that combines the life-course and feminist pathways models should be especially relevant. The paper therefore adapts the model by integrating factors consistent with the feminist pathways framework and evaluates whether this extended model better explains juvenile offending, especially among girls. The models employed in this paper show support for life-course theory's emphasis on social control processes exercised through the family and emphasize the salience of integrating the feminist pathways perspective. This paper argues that combining these two theoretical paradigms, and using both qualitative and quantitative data collection methods, would remedy the existing deficiencies in data and help fill gaps in our understanding of delinquent and criminal young women.

Gender and 'Male-Stream' Criminology

Women offenders are becoming more prevalent in the criminal justice system (Belknap 2001). Recent Bureau of Justice Statistics publications reveal that while women's incarceration rates remain lower than their male counterparts, the number of women in prison has been steadily increasing—from 6.1% of the total prison population in 1995 to 7% in 2005 (Bureau of Justice Statistics 2005a). The annual rate of growth in the population of female inmates in the same ten-year period has averaged 4.7%, as compared to a 3.0% increase for males (Bureau of Justice Statistics 2006). Similar growth has been experienced in the probation and parole populations.³ At the end of 2004, women accounted for one out of every eight adults on parole and one out of every four adults on probation (Bureau of Justice Statistics 2005b).

There are significant differences in offending patterns between women and men. Women are more likely to be incarcerated for drug crime, less likely to use a weapon, and more likely to victimize a close friend, relative, or intimate partner (Bureau of Justice Statistics 1999b, 2006). Women report engaging in criminal activity to meet the financial needs of their families, while men do so to maintain their status (Reisig et al. 2006). Women offenders also more often report physical and sexual abuse during and after childhood, more instances of substance abuse, and disproportionately higher rates of poverty than male offenders (Bureau of Justice Statistics 1999a; Reisig, Holtfreter, and Morash 2006; Daly 1992; McClellan, Farabee, and Crouch 1997). Research consistently has shown that both the onset of and desistance from criminal behavior occurs earlier in women and that women overall commit less violent crime during the course of their criminal career than do men (Steffensmeier and Allan 1996).

Scholars—especially feminist scholars—have differed widely on what causes female criminality. Early theorists argued that women's lower crime rates were caused by the fact that morality is inherently more natural for women as a result of their "purer, finer, more emotional" characters and their role as childcare givers and nurturers. Writers in the 1970s and 1980s attributed the increase in female criminality of the time to women's liberation, their consequent expanded access to criminal careers and markets, and the increased acceptability of women who challenged gender norms (Simon 1975; Adler 1975). Wilson (1993) argues instead that differences in moral

³ It should be noted that this increase also may have been influenced by the fact that females formed a smaller group to begin with, and so have shown larger increases.

behavior between the genders may be rooted in something more fundamental: while both males and females learn moral behavior in the family, their investment in the outcomes of their interactions is inherently different. Gilligan (1982) concurs, arguing that the moral 'compass' that men and women have are essentially different: men are likely to make moral decisions based on an ethic of rights and justice, while women base their decisions in an ethic of care. Deborah Tannen (1991) argues that men and women grow up with different cultural backgrounds, providing them with different 'tools' (among them communication) with which to navigate the world. Pollitt (1992) on the other hand criticizes these "difference feminists" for advancing a position that is demeaning to women.

While the differences between male and female criminality seem clear, feminist criminologists have labeled the discipline of criminology as "malestream"—arguing that the "mainstream [is] really about males" and that feminist criminology had remained largely at the margins (Belknap 2001; Renzetti 1993, 219). Despite the fact that gender is the strongest factor predicting the likelihood that someone will break the law, women and girls still are largely left out of criminological studies on offending (Adler 1975; Belknap 2001). Where women and girls have been included in samples, researchers typically have focused on how these groups fit into the male models of crime and criminality or have provided biological (and especially sexually-based) explanations for female deviance (Belknap 2001).

The fact that women make up such a small proportion of the prison population (in terms of absolute numbers) may seem to provide justification for their relative invisibility in criminological research. However, feminist scholars have questioned whether policy and theory that develops from empirical studies based only on men and is then applied to women can have adequate explanatory value for their criminality beyond those based on factors and experiences that are common to both groups⁴ (Reisig et al. 2006). Risk assessments that are derived from male-centered theories of crime and delinquency do not take into account the range of factors that are relevant to female criminality, such as the gendered nature of economic disadvantage, women's over-representation among drug-related offenses, and the effect of their prior victimizations on their future criminal behavior (Reisig et al. 2006).

⁴ For example socioeconomic status and prior arrest records. Feminist criminologists would argue, however, that women's experiences of these are fundamentally different, shaped by their gender.

The 1990s saw developmental and life-course criminology become influential in the field of criminology. In practice, though, this research has contributed very little to the literature on women and girls and has focused instead overwhelmingly on men and boys.⁵ Few works deal with women and girls, either centrally or peripherally, despite the presence of females in their samples.⁶ Overall, feminist criminologists have criticized life-course theorists for failing to describe how the findings of these studies can be made applicable to women and for failing to cite the absence of women and girls in the samples as a limitation to the research (Belknap 2001; Belknap and Holsinger 2006; Reisig et al. 2006).

This paper attempts to remedy this gap in the literature both by testing the applicability of the life-course model to women and by attempting to integrate variables suggested by feminist pathways research using data gathered as part of the 1958 Philadelphia Birth Cohort Study. This study argues that analyzing women's criminality through the lens of life-course criminology is a virtually untapped resource in uncovering the causes of both female and male criminal behavior.

This paper finds support for the importance of applying the life-course model to women and girls and for the salience of a model that integrates factors identified by feminist pathways studies. The paper emphasizes, though, that while this study provides a valuable first step, the deficiencies in longitudinal datasets that focus on female offending remain problematic. The challenge for researchers therefore remains to develop a model that better explains *girls'* offending and for identifying how this differs from the life-course models developed for boys. The paper argues that parsimoniously developing a model based on the life-course and feminist pathways paradigms, as well as methodologically triangulating by using both qualitative and quantitative data collection methods, may provide the key for remedying the existing deficiencies in data and gaps in our understanding of delinquent and criminal young women.

⁵ See for example Sampson and Laub (1993), Sampson and Laub (2005a, 2005b), Farrington (2003), Laub and Lauritsen (1993), Nagin, Farrington, and Moffitt (1995), and Piquero and Mazerolle (2001).

⁶ See for example Farrington (1992), who barely discusses the women in his sample, except to describe their age at onset of criminality.

Life-Course Theory

The life-course field encompasses three paradigms, each emphasizing a slightly different approach: the risk factor paradigm,⁷ which focuses on the risk factors for offending and relevant preventative methods; the development approach,⁸ which focuses on the development of offending and its risk factors; and life-course criminology,⁹ which focuses especially on the life events and transitions that lead to offending and desistance from crime. Taken as a body of work, this perspective has identified a number of important characteristics about criminal offending: offending levels peak in late teenage years; most juvenile offending occurs during ages 8-14. Life-course models identified that there is continuity in criminal behavior. An early age of onset is a good predictor of persistence in criminal behavior into adulthood, and a small sector of the population commits the bulk of crime in adulthood. This paradigm also has shown that criminal offenses form part of larger patterns of antisocial behavior for offenders, which includes heavy drinking, reckless driving, and sexual promiscuity, and that the types of offenses committed vary with age. Most offenses committed during the teenage years are committed in groups, while offenses in adulthood more often are committed alone (Farrington 2003).

Using a large-scale and extremely detailed dataset collected in the early 1940s by Harvard Law School researchers Eleanor and Sheldon Glueck, Sampson and Laub (1993) attempted to address gaps in existing criminological literature that had traditionally neglected the early childhood phase of development as relevant to (later) criminal careers. They argued that by concentrating on adolescence, which is the period when delinquency levels peak for most individuals, criminology had not only failed to understand the continuity of criminality for some, but also had failed to properly explain the desistance from crime among delinquents by merely treating these causes as "simply the opposite of criminogenic factors" (7). Sampson and Laub further held that social transitions, social structural context, and mediating processes of social control were vital in understanding both criminality and desistance.

⁷ See for example Farrington (1992, 2000, 2005).

⁸ See for example chapters by Rolf Loeber, Marc LeBlanc, and David Farrington in Loeber and Farrington (1998).

⁹ See the works of Robert Sampson, John Laub, and Terrie Moffitt in, for example, Laub (1993), Laub and Sampson (2003), Sampson and Laub (1993, 2005a, 2005b), and Moffitt (2001).

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Sampson and Laub (1993) reconstructed and re-analyzed the Gluecks' longitudinal dataset of delinquent and non-delinquent males to age 40 and developed a three-fold thesis: 1) that delinquency in childhood and early adolescence is explained by structural context and informal social control, such as school and family; 2) that there is continuity in delinquent and antisocial behavior that persists through adulthood; and 3) that the social bonds created by family and employment explain changes in adult offending, regardless of childhood experiences with offending. Sampson and Laub argued in an informal social control model that the probability of crime and deviance increases when an individual's bonds to society are eroded or destroyed. They also emphasized the importance of structural context in influencing the level of informal social control that is exercised by an individual's family, which in turn explains levels of delinquency.

Sampson and Laub's model of juvenile delinquency combines the central ideas of social control and coercion theories, which emphasize the role of parental controls, with Braithwaite's (1989) notion of 'reintegrative shaming,' which proposes a positive model of consistent parental punishment bounded in a context of love, respect, and acceptance of the child. The authors argue that the combination of these three paradigms provides a model of social control that includes discipline, supervision, and parental attachment. They hold that the key to successful socialization is the development of a link between the child and family (and ultimately to society) through the emotional bonds of attachment, and direct integrative forms of control, monitoring, and punishment.

The authors argue that family processes mediate or account for the effects of structural background factors. In particular, they argue that parental deviance influences a child's delinquency through the disruption of social control: parental criminality, excessive drinking, and inconsistent or haphazard discipline in effect amount to a rejection of parental duties, which creates a tenuous or non-existent parental relationship and reduced opportunities for positive socialization. The study found support for the proximate role of the family on delinquency, concluding that "low levels of parental supervision, erratic, threatening, and harsh discipline, and weak parental attachment were strongly and directly related to delinquency" (247).

Extending the focus on the family as a site of social control, Sampson and Laub further argue that peers and siblings provide structural sources of delinquent associations. Here too, the authors highlight the role of deviant parents, postulating that they significantly increase the possibility that the

at-risk child may be attached to a delinquent peer or sibling.¹⁰ Interestingly, though, while the model identified that as the number of children in a family increases so does delinquency, it fails to find a statistically significant relationship between delinquent siblings and a child's delinquency. On the other hand, having delinquent peers was positively (and significantly) tied to delinquency in their cohort.

In sum, then, Sampson and Laub identify that the strongest and most consistent effects on delinquency stem from the social processes of family, school, and peers—supporting their theory that where the bonds linking a youth to his family and society are weak or non-existent, this lack of informal social control increases delinquency.

Life-course research has focused almost exclusively on men and boys. While the Gluecks published a study of 500 delinquent women in Massachusetts in 1934, this study was not longitudinal, and, much like other early criminologists and social reformers, considered the women offenders “a sorry lot” who were unable to control their wanton sexual impulses resulting in “brain disease, illegitimacy, and unhappy matrimony” (Glueck and Glueck 1934, 96). Other studies using birth cohort data to examine changes and patterns in offending and desistance from crime collected data only on boys, such as Wolfgang et al.'s (1972) study of 10,000 boys born in 1945, or like Tracy, Wolfgang, and Figlio's (1990) study of a 1958 birth cohort in Philadelphia, which collected data on both boys and girls but only used the former in the analysis.

Only one life-course study focusing on women and girls' delinquency appears to exist. Sommers and Baskin's (1994) research collected “life event histories” from 85 women arrested and incarcerated for violent crime in New York. The study examined these self-reports, describing the age at which these women began engaging in criminal behavior, and other social and neighborhood factors that impact the onset of their criminality. Salient factors described in this study included violence in the home, neighborhood conditions (such as the degree of poverty), sexual abuse, and the use of alcohol and drugs (Sommers and Baskin 1994). While this study clearly used methods that fall into the life-course paradigm, the article does not explicitly use this as its theoretical framework.

¹⁰ Mednick (1983) and others have found these effects to be stronger for biological parents, especially fathers, than for non-biological parents.

Two other studies examined both male and female delinquents and gave substantial attention to both the male and female respondents. Moffitt, Caspi, Rutter, and Silva (2001) examined the sex differences in antisocial behavior among 1000 males and females between the ages of 3 and 21 in Dunedin, New Zealand. The study used developmental psychology, psychiatry, and criminological approaches (particularly developmental life-course theories) and concluded that there are sex differences in the development of antisocial behaviors in young people as a result of neuron-developmental disorders (such as autism, hyperactivity and dyslexia), which are concentrated especially among males. The study argues that female antisocial behavior is best understood as shaped by social relationships and that this behavior both begins and peaks in adolescence.

Finally, Belknap and Holsinger (2006) examined male and female delinquents in Ohio, combining life-course, feminist pathways, and strain theories. This study used self-reports of delinquency and life events, combined with the youths' assessments of their families, schools and mental health. Results showed that gender-related risks and events (such as sexual victimization) are important in explaining later criminal behavior and that these need to be understood within a framework that recognizes the intersections of race, sexual identity, and age (Belknap and Holsinger 2006).

Feminist Pathways Research

Feminist pathways researchers have attempted to remedy some of the criticisms leveled at male-centered criminological theory in general and life-course theory specifically. The body of research that falls under this broad umbrella shares commonalities of theory and method with life-course, cycle of violence, and intergenerational transmission of violence theory, but does not rely on longitudinal data. Instead, feminist pathways research most often collects data (most often on the causes of women's offending) retrospectively by interviewing respondents at one point in time and asking them to reflect back on their lives and important sequence events.

Feminist pathways research has been successful in illuminating a number of factors that are unique to women offenders or that had not been highlighted by studies focusing on men. Theorists working in this paradigm hold that some of the variables that lead to criminal behavior are gender-specific and that these have an important impact on developmental processes, the resulting delinquent or problem behaviors, and the social responses to these behaviors (Belknap and Holsinger 2006). These theorists hold that while factors such as socioeconomic status, race, and social context are important

in understanding criminality regardless of gender, they uniquely are experienced by women.¹¹ When combined with gender inequality and the disproportionate burdens of poverty and childcare, they produce multiple pathways to criminality that are different from those of men. Feminist pathways analyses attempt to represent these differences and account for the full range of influences that have bearing on criminal or delinquent behavior.

Particularly, and unlike life-course theories, feminist pathways research has identified the link between negative childhood experiences and women's criminality: women who have experienced incestuous or coerced sex, intercourse at a young age, a lack of parental guidance, a lack of good (positive) relationships with men, high rates of poverty, physically injurious punishments by parents and caregivers, abandonment, racism, spiraling marginality, substance abuse, and the burden of care for children are more likely to engage in criminal behaviors (Daly 1992; Chesney-Lind and Rodriguez 1983; James and Meyerding 1977; McClellan et al. 1997; Belknap 2001). Riviera and Widom (1990) identify a category of women for whom the risks of criminal offending are markedly increased—the so-called category of “sexual abuse plus” women who experience both sexual abuse and a variety of other factors mentioned above.

Feminist pathways researchers such as Ritchie (1996) have emphasized that understanding female criminality and delinquency is more nuanced than simply identifying the presence of factors outlined above. Instead, what may separate women from men with similar experiences is a condition of gender entrapment in which women's intimate relationships and their culturally constructed identity interact and result in eventual criminality. That is, the survival skills learned by women to avoid victimization in the home, such as running away or truancy, eventually may lead to social and structural dislocation.

Of course, many of the factors highlighted by feminist pathways analysis are not unique to women, and indeed the paradigm shares commonalities with life-course research. Both bodies of literature underline the importance of childhood guidance and good parental relationships in staving off delinquent behavior, and they point to the deleterious effect that physically injurious punishment by one or both parents has on at-risk youth. Other factors which have been highlighted by feminist pathways research are observed among both females and males, such as early childhood sexual abuse and substance

¹¹ And indeed, are experienced by individual women differently.

dependency. While feminist scholars' claims that these experiences are particularly important for young women may well be true, it is plausible that these factors are salient in explaining deviance and criminality for girls and boys alike. While these experiences would seem to be life-altering causal factors, and therefore would seem to fall within the rubric of life-course theory, they have not been included in previous life-course analyses. The life-course framework is attractive, too, because it overcomes the survivor-only bias endemic to the retrospective approach used in feminist pathways research. In essence then, we are able to examine the factors that lead to both the delinquency 'successes' and 'failures' by focusing both on those who have desisted from delinquent and/or criminal behavior and those who have not.

This paper argues that integrating these aspects into a life-course framework would not only provide for interesting analysis and more representative samples, but also may provide additional considerations for explaining both female and male criminality and revealing differences between the sexes in the nature and sources of criminal behavior. The implications that may follow for policy and programmatic interventions to prevent delinquency and criminality (for example in schools, welfare, and criminal justice programs) are great.

Data

This study uses data collected by the 1958 Philadelphia Birth Cohort Study (Figlio, Tracy, and Wolfgang 1994), which focused on the subjects' delinquent and criminal activities. The birth cohort set comprises 13,160 male and 14,000 female subjects of all race groups born in 1958 in Philadelphia who resided in the city at least between the ages of 10 and 18. Data were collected from school records (both public and parochial/private schools) and Philadelphia Board of Education files, and represents an official record of the students' histories while at school. In addition, a two-stage search of juvenile police records was undertaken through the Juvenile Aid Division and Philadelphia Police Department to obtain all offense records and police investigation reports (totaling roughly 21,000 records) for each individual in the study. The data were collected in two phases, covering first the juvenile delinquent period (up to age 18) and then the period into adulthood.

The original study was followed up in 1988 with a retrospective survey conducted using face-to-face interviews and self-report surveys which examined the differences in attitude and behavior for individuals with a

variety of involvement with the juvenile justice system. This follow-up study drew a stratified random sample of the original birth cohort, selecting cases on the basis of gender, race, socioeconomic status, juvenile offense history, and juvenile status offenses.¹² Of the 1,992 individuals selected for the follow-up phase, a total of 577 men and 201 women were interviewed—most of whom were still residing in the greater Philadelphia area.

The three datasets were combined using the unique cohort identification (cohort ID) numbers assigned to each respondent. Taken together, the three phases of the dataset (juvenile records, adult records, and follow-up phase) covers the period until the respondents were 40 years of age and is therefore well-suited to examining delinquent and criminal behaviors given that the vast majority of non-persistent offenders (and especially among females) have desisted from crime by age 40. The dataset contains information on 545 delinquent and 123 non-delinquent boys, as well as 55 delinquent and 88 non-delinquent girls.

To date, only three gender-focused analyses have been conducted using this dataset. Both Facella's (1983) study of female delinquency and Otten's (1985) comparison of male and female delinquency in the birth cohort were written before the 1988 follow-up study was conducted (which provided the majority of structural and contextual data) and before the ascendance of the life-course and feminist pathways paradigms. D'Unger, Land, and McCall (2002) used the data to examine sex differences in age patterns of delinquent careers, finding that while results were similar for males and females, women became delinquent at a later age, terminated such behavior earlier than males, and were less likely to become chronic offenders. However, this study urges further research, since "male models of offending have not been found to be directly applicable to samples of females, although there are some similarities." They argue that the task of providing theoretical models that explain the different levels and patterns of offending for women (and men) remain an "essential task" (373).

Methods

This paper tests Sampson and Laub's (1996) life-course model using the 1958 Philadelphia birth cohort data. The paper compares the results of this analysis for males and females—examining the effect of social structural

¹² Status offenses are offenses that only apply to minors and that are not punishable by either incarceration or placement in a training school. Examples of status offenses are running away from home, truancy, some underage drinking, curfew violations, and tobacco offenses.

context, early childhood family environment, and the mediating processes of social control on delinquency using ordinary least squares (OLS) regression. The paper undertakes this analysis in two phases. First, the paper tests whether Sampson and Laub's results can be replicated using the Philadelphia birth cohort, and whether the causal inferences observed in the male life-course studies hold true for women. Second, the study extends the model to include salient factors identified by feminist pathways analyses and evaluates whether these improve the explanatory power of the model for both genders.

Dependent Variable

Juvenile Delinquency Index. As noted previously, the measures of delinquency contained in the Philadelphia birth cohort data are based on official police contacts reported to the Juvenile Aid Division of the Philadelphia Police Department (Tracy et al. 1990). Two variables contained in the data were combined to create a delinquency index—the actual number of offenses or police contacts per juvenile and the mean seriousness of these offenses. The original researchers created the mean seriousness variable based on the Sellin-Wolfgang measure of delinquency, which rates the seriousness of the crime/behavior using the criterion of "discernible consequences" and includes all events that caused some degree of social harm to the community, including those that may not have been classified as criminal acts according to the Uniform Crime Report. In addition, the scale takes into account additional aggravating factors, such as verbal or physical intimidation, the commission of sexual assault or the use of a weapon, the number of victims affected, and the dollar amount of the theft and/or damage (where applicable).

Independent Variables

Basic Family Process Model

Sampson and Laub identified a set of structural background factors that they considered "relevant to an empirical assessment of both family functioning and delinquency" (1993): household crowding, family disruption, family size, socioeconomic status, nativity (foreign-born status), residential mobility, and mother's employment outside the home. In an effort to replicate the Sampson and Laub model, these variables were replicated as closely as the data would allow and included in the basic model. Data on parental nativity were not collected by the Philadelphia study and was

therefore not included. Table 2 presents the distribution of each variable by race and gender.

Household Crowding. Sampson and Laub use a three-level categorical variable to measure household crowding: comfortable (parents one room, children own room), average (two persons per bedroom), and overcrowded (more than two persons per bedroom, excluding infants). Data on the structural conditions (i.e., the number of bedrooms) were not available in the Philadelphia dataset and therefore did not allow for an identical measure. Instead, a count variable was included that answered the following question: "how many people, including yourself, lived in your house for a period of six months or more during the time that you were growing up?"

Family Disruption. Similar to the earlier study, family disruption was coded as 'one' where one or both of the child's parents were absent due to reasons such as death, divorce, separation, and/or desertion. Roughly 20% of the sample of both female and male respondents reported experiencing family disruption.

Family Size. Family size indicates the number of consanguineous and other children (including the respondent) in the family and ranges from one to six.

Socioeconomic Status. Given the archival nature of the data collected for the Philadelphia Birth Cohort Study, individual-level data such as household income or parents' employment status were not available, and the original researchers therefore created a continuous composite measure of socioeconomic status based on the factor scores of 10 separate aggregate-level indicators. These 10 indicators were inspected using univariate distributions and transformed using logarithmic functions to correct for skewness and uneven distribution. The resulting composite index ranged from -1.96 to 2.12, with a mean of -0.017 and a standard deviation of 0.89.

Residential Mobility. Sampson and Laub measure family residential mobility as an interval measure of the number of times the child's family moved during childhood. The Philadelphia study does not include similarly detailed data, but does ask whether the respondent lived in more than one household during childhood (coded 1 for yes and 0 for no).

Mother's Employment. In keeping with the earlier study, this measure was created as a dichotomous variable in answer to the following question: "did your mother ever work outside the home?" Sampson and Laub's measure did not distinguish between full-time and part-time employment. Responses

were coded by the original Philadelphia researchers as full-time, part-time, no, and don't know. These data were recoded to reflect 0 as no (n = 260) and 1 as yes (n = 445). All other responses were coded as missing (n = 15).

Parents' Criminality. Sampson and Laub's remaining two structural background variables combined the criminality and drinking habits of mothers and fathers to form a general indicator of deviance. The Philadelphia data do not contain information on parents' drinking habits, but they do ask whether parents were absent from the family for any reason. Respondents were given a list of options, among them arrest, and asked to identify all that applied. These data were used to create two dichotomous variables for whether the child's mother and father's respectively were arrested, coded 0 for no and 1 for yes.

Gender. Given that the current study includes both female and male respondents, a dichotomous gender variable is included, coded 1 for female and 0 for male.

Race. Sampson and Laub's earlier model had the benefit of being able to use a matched-pair design comparing delinquent and non-delinquent boys matched case by case on age, race/ethnicity, neighborhood, and measured intelligence. The Philadelphia study is not similarly fortunate, and the study therefore controls for race. The dataset contains 362 whites, 351 blacks, 5 Hispanics, 1 American Indian, and 1 Asian American respondent. Given the small number of cases in the latter three categories, the data were recoded into a dummy variable with 0 indicating a white respondent and 1 indicating a non-white respondent.

Extended Model

As mentioned above, Sampson and Laub (1993) extended their model to include variables related to school processes and performance, age of criminal onset, and the delinquency of peers and siblings. The Philadelphia dataset contains only information on the delinquent records of peers, and this variable is therefore included in the extended model. In addition, this study hypothesizes that including factors identified by feminist pathways analyses, such as substance abuse and childhood sexual assault, should increase the explanatory power of the model. As such the following variables are included in the extended model:

Delinquent Peers. The Philadelphia follow-up study asks whether any of the respondent's three closest peers were ever arrested during childhood. The

data were recoded into a dummy variable, indicating whether the child had delinquent peers or not, coded as 1 for yes and 0 for no.

Age of Onset. Sampson and Laub identify that the early onset of delinquent behavior impacts the severity and longevity of subsequent criminal acts. The extended model therefore includes a variable which indicates the age of first contact with the police. Although this variable does not include other unreported (and possibly preceding behavior), relying on self-reported data, which would more reliably include this earlier behavior, is similarly problematic and possibly unreliable. As such, this measure of first official contact is included.

Alcohol and Drug Use. The data contain questions on whether the child used alcohol and marijuana before a range of different events or behaviors (both deviant and not). These data were combined into two dichotomous variables representing whether the child used either substance or not during childhood, coded 1 for yes and 0 for no.

Sexual Abuse. The data contain questions on whether the child experienced sexual abuse during childhood. A dichotomous variable was created, coded as 1 for yes and 0 for no.

Results

Table 1 presents the distribution of the delinquency index and its constituent measures by gender. The composite delinquency index ranged from 0 to 181.7, with a mean of 13.02 and a standard deviation of 24.76. Both the mean seriousness and number of offenses data were more dispersed for male respondents, although the composite index for both males and females was skewed by the presence of outliers. The mean number of offenses for boys was double that of girls, although in both groups the bulk of the juveniles had committed relatively low numbers of offenses (inter-quartile ranges of 1-3 for boys and 0-2 for girls). Regarding delinquency, 38% of girls (n = 55) had no delinquent record, compared to 21% of boys (n = 123).

Table 1. Descriptive Statistics on Delinquency Measures

	Number of Offenses		Mean Seriousness		Composite	
	Males	Females	Males	Females	Males	Females
Range	0-29	0-10	0-65.1	0-13	0-181.7	0-74.4
Mean	2.8	1.4	3.56	2.05	14.96	5.21
Standard Deviation	3.77	1.73	5.22	3.04	26.83	10.38
Interquartile Range	1-3	0-2	0-3	0.3-5.7	0.3-16	0-6.6
90 th Percentile	8	3	8.8	7.1	45.6	16.6

Table 2 presents the frequencies for each of the items that comprise the basic and extended models. The patterns of distribution across the races and genders are relatively stable for a number of the variables. Family size is relatively similar for all 4 groups (with means of around 6.5 and 6.7 people respectively for girls and boys), with most respondents reporting 4 siblings. Non-white boys experience the highest levels of parental absence and family disruption (29.1%), with non-white girls being similarly higher than their white male and female counterparts (25.3%). Only 23 respondents reported experiencing residential mobility—with only two of those being female and none of those white.

Almost no white boys reported that their mother had been arrested (99.1%). Both genders reported higher incidents of arrest of their fathers, with non-white boys and girls being more affected in this regard. Boys (both white and non-white) were more likely to have had delinquent peers during childhood (50.9% of white boys and 59.8% of non-white boys) and were more likely than girls of either race to have used alcohol. Interestingly, white girls and non-white boys were more likely to have used drugs than not, with non-white girls least likely of the remaining groups to have done so. Levels of reported sexual abuse were relatively low, with only 43 respondents having been sexually abused as a child. Perhaps most surprisingly, the largest proportion of these individuals were male (6.76% of the sample as compared with 2.8% of females), with white boys reporting higher incidence of abuse (8.2%). Of course, these estimates should be viewed with caution given the sensitivity of the topic and the well-documented underreporting of sexual abuse, particularly in interviewer-administered survey settings.

A correlation matrix was run using the variables specified in Sampson and Laub's basic model. One problematic result was observed: the variables measuring the number of individuals in the child's household and the number of children in the family were somewhat highly positively correlated ($r = 0.45$). Sampson and Laub included both variables in their model, although their measures do represent subtly different conditions—one measuring the physical structural condition of overcrowding, and the other measuring the number of children in the family (although these are related). However, in the interests of testing the replicability of their findings, it was decided to leave both variables (number of individuals in the household and number of children in the household) in this study's model given that these represent the best available measures of similar concepts contained in the data at hand. Various other relatively weak correlations were observed between variables based on socioeconomic conditions (such as between mother's employment, socioeconomic status, family disruption, and the number of individuals in the household), but these were not considered problematic to the model.

Table 2. Family Structural Background Factors by Race and Gender

Basic Model	Females		Males	
	Whites	Non-Whites	Whites	Non-Whites
Household Crowding Mean # of Individuals in Household	6.86	6.87	6.51	6.79
Family Disruption*				
Yes	9 (17.3%)	23 (25.3%)	34 (11.0%)	23 (29.1%)
No	43 (82.7%)	68 (74.7%)	275 (89.0%)	68 (70.9%)
Family Size Modal # of children in household	3	4	4	4
Socioeconomic Status Mean SES Index Ratio	0.47	-0.53	0.22	-0.21
Residential mobility				
Yes	0 (0%)	2 (2.2%)	6 (1.9%)	15 (5.6%)
No	52 (100%)	89 (97.8%)	304 (98.1%)	252 (94.4%)
Mother's Employment*				
Yes	33 (64.7%)	60 (67.4%)	176 (58.9%)	176 (67.2%)
No	18 (35.3%)	29 (32.6%)	127 (41.9%)	86 (32.8%)
Mother Arrested*				
Yes	2 (3.8%)	2 (2.2%)	3 (0.9%)	10 (3.8%)
No	50 (96.2%)	88 (97.8%)	306 (99.1%)	255 (96.2%)
Father Arrested*				
Yes	3 (5.8%)	14 (15.4%)	31 (10.1%)	38 (14.4%)
No	49 (94.2%)	77 (85.6%)	277 (89.9%)	226 (84.6%)
Extended Model				
Delinquent Peers				
Yes	11 (21.2%)	11 (12.1%)	185 (59.8%)	136 (50.9%)
No	41 (78.8%)	80 (87.9%)	124 (40.2%)	131 (49.1%)
Age of Onset* Modal Age of Onset	15 (21.7%)	16 (23.1%)	15 (19.0%)	14 (52%)
Alcohol Use				
Yes	9 (17.3%)	10 (10%)	130 (41.9%)	85 (31.9%)
No	41 (82.7%)	80 (90%)	180 (58.1%)	131 (68.2%)
Drug Use				
Yes	24 (48.2%)	35 (38.5%)	165 (53.3%)	128 (48.3%)
No	28 (53.8%)	56 (62.5%)	145 (46.7%)	139 (51.7%)
Sexual Abuse				
Yes	2 (3.9%)	2 (2.2%)	18 (5.8%)	21 (8.2%)
No	50 (96.1%)	89 (97.8%)	292 (94.2%)	246 (91.8%)

* Data contain missing values.

Table 3 presents the results of the OLS regression using Sampson and Laub's basic model of structural family background factors on juvenile delinquency in the Philadelphia cohort. Four variables were statistically significant, and the magnitude and direction of the relationships support the Sampson and Laub's social control model. Family size was shown to be positively related to juvenile delinquency, indicating that for each additional child in the household, a child's delinquency index is expected to rise by 2.31 units holding all else constant (significant at the .01 level). This would support the proposition that as the number of children in a family grows, the opportunity for focused attention and consistent discipline attenuates, weakening the bond between parent and child and negatively impacting norm socialization.

Mother's employment outside the home also proved highly statistically significant ($p < .001$), although at first glance it seemed that the direction of the association was opposite than would be predicted by the life-course model. The partial coefficient of -7.12 indicates that if a mother is employed outside the home, the child's delinquency levels drop by roughly 7 units. Two explanations are plausible for the change in direction from the earlier models. First, this variable may, to some extent, be measuring socioeconomic status. Given that this dataset only contains an aggregate socioeconomic status measure, the change in direction may be evidence of omitted variable bias. Second, Sampson and Laub are themselves somewhat skeptical of the evidence produced by their earlier data, remarking that despite their findings, "it remains to be seen whether employment outside the home by mothers has any direct effect on delinquency" (1993, 80). While it would seem that life-course theory's emphasis on social control would suggest that having a stay-at-home mother (who has the opportunity to discipline and nurture the child more consistently by virtue of increased contact) should lower the delinquency, this assumes that stay-at-home mothers are by nature positive socializing forces. In reality, stay-at-home mothers may well be less than optimal in this regard. When combined with socioeconomic and other structural constraints that may be concentrated in conditions of increased deprivation (such as joblessness) the care that these mothers provide may well exhibit some of the characteristics which Sampson and Laub identify as increasing delinquent behavior: erratic and harsh discipline, increased substance abuse, and parental rejection.

Table 3. Modeling Factors Influencing Juvenile Delinquency in the 1958 Philadelphia Birth Cohort

Independent Variable	Basic Model			Extended Model		
	b	Std. Error	beta	b	Std. Error	beta
<i>Residential Mobility</i>	-4.8	5.29	0.367	-2.43	7.15	0.733
<i>Family Size (Siblings)</i>	2.31	0.95	0.015 **	1.42	1.24	0.252
<i>Family Crowding</i>	-0.31	0.44	0.482	-0.65	0.58	0.258
<i>Family Disruption</i>	-0.42	2.4	0.864	-2.66	2.89	0.358
<i>Mother Employed</i>	-7.12	-3.81	< 0.001 ***	-8.48	2.29	< 0.001 ***
<i>Father Arrested</i>	-1.09	2.84	0.700	-2.81	3.47	0.418
<i>Mother Arrested</i>	5.9	6.67	0.374	7.77	8.20	0.344
<i>Gender</i>	-10.47	2.23	< 0.001 ***	-10.26	3.20	0.001 ***
<i>SES Status</i>	-1.99	1.09	0.06 †	-2.92	1.38	0.035 *
<i>Race</i>	5.5	1.90	0.004 **	7.78	2.35	0.001 ***
<i>Use Alcohol</i>				5.63	2.60	0.031 *
<i>Use Drugs</i>				-0.71	2.45	0.772
<i>Sexual Abuse</i>				-3.77	4.67	0.420
<i>Delinquent Peers</i>				4.74	2.41	0.050 *
<i>Early Onset</i>				-2.66	0.46	< 0.001 ***
<i>Intercept</i>	13.64	3.49	< 0.001 ***	53.24	8.58	< 0.001 ***
<i>Adjusted R-squared</i>		0.06			0.13	
<i>n of cases</i>		695			521	

* $p < .05$, ** $p < .01$, *** $p < .001$, † almost reaches statistical significance

Gender also is highly statistically significant in the basic model ($p < .001$), indicating that girls' delinquency index is predicted to be 10.47 units lower than for boys, holding all else constant. This finding is unsurprising, given that offending rates for boys have long been shown to be significantly higher than for girls. Race is also statistically significant at the .01 level, showing that all else being equal, non-white children are likely to score 5.5 units higher on the delinquency index than are white children. This finding is unsurprising also, given that the non-white children in the dataset experienced lower socioeconomic index scores than white children (with the mean for non-whites being -0.29 and for whites being 0.26). Criminological literature has long shown the link between structural and economic deprivation and increased criminality, and this finding similarly supports life-course's emphasis on social control, as children in lower socioeconomic classes are more likely to have association with delinquent peers and family members and less likely to be invested in community social ties. The socioeconomic status index variable almost reached statistical significance at the .05 level ($p = .06$). Given that the socioeconomic status variable is constructed from aggregate-level data that is imputed to the individual respondents based on residential location, the relationship may well be much stronger than indicated by this analysis. The relationship between socioeconomic status and juvenile delinquency warrants further attention in subsequent studies of this nature.

Looking at the model as a whole, the replication of Sampson and Laub's basic model is not particularly successful at explaining juvenile delinquency in the Philadelphia birth cohort. The adjusted R-squared of 0.06 indicates that the combination of factors identified by the model only explains 6% of the variance in delinquency scores.

In order to evaluate how well the model explains female and male delinquency respectively, the data were separated by gender and the model was run on each subset. The results of this analysis are presented in table 4. The model fared relatively similarly in regard to boys, with the variables measuring number of siblings, mother's employment, and race being statistically significant at least at the .01 level. The direction and strength of the relationships were also comparable to the model covering the whole dataset.¹³ Interestingly, socioeconomic status once again somewhat

¹³ The coefficient for number of siblings was 3.00 for the boys' sample as compared with 2.31 for the dataset as a whole (both statistically significant at the .01 level). The coefficient for mother's employment indicated that where a mother was employed delinquency dropped by 7.5 units (as compared with 7.12 units for the entire sample)—both significant at the .001 level, holding all else constant. Being

narrowly failed to achieve statistical significance, although similar caveats about measurement should be considered as discussed above. Overall, the model was slightly weaker in explaining juvenile delinquency in the sample, presenting an adjusted R-squared of 0.04.

Table 4. Basic Model Influencing Juvenile Delinquency in the 1958 Philadelphia Birth Cohort by Gender

Independent Variable	Females			Males		
	b	Std. Error	P-value	b	Std. Error	P-value
Residential Mobility	-3.77	7.68	.624	-4.34	6.12	.479
Family Size (Siblings)	-0.679	1.16	.474	3.0	1.16	.01 **
Family Crowding	-0.10	0.42	.799	-0.38	0.55	.482
Family Disruption	0.86	2.32	.711	-0.8	2.99	.788
Mother Employed	-4.17	1.85	.02 *	-7.5	-3.46	.001 ***
Father Arrested	-3.14	2.84	.280	-0.64	2.84	.851
Mother Arrested	6.67	5.45	.224	7.16	6.67	.415
Socioeconomic Status	-2.23	1.34	.07 †	-2.23	1.34	.09
Race	2.54	2.08	.226	6.16	1.90	.008 **
Intercept	8.38	3.43	.016 *	12.59	4.33	.004 **
Adjusted R-squared	0.06			0.04		
n of cases	139			556		

* $p < .05$, ** $p < .01$, *** $p < .001$, † almost reaches statistical significance

non-white increased juvenile delinquency scores by 5.5 units for the entire sample and by 6.16 units for boys (both significant at the .001 level), holding all else equal.

Looking at the girls, only the variable measuring mother's employment reached statistical significance, indicating that where mothers were employed outside the home, girls' delinquency is predicted to drop by 4.17 units, holding all else constant. The model has a similarly low R-squared of 0.06, and therefore only explains 6% of the variance in delinquency. It should be noted that the number of girls in the sample is low, and the data contain a number of variables and observations with missing values, which impacts the model. These concerns will be discussed further below.

In order to test whether an extended model fares better in explaining juvenile delinquency in the Philadelphia birth cohort, the model was rerun incorporating variables which address additional salient factors identified by Sampson and Laub (such as the role of delinquent peers and the early onset of delinquency) and by the feminist pathways framework (sexual abuse and drug and alcohol use). The results are presented in table 5.

Similar to the basic model, mother's employment, gender, and race are all statistically significant. The model predicts that where the child's mother is employed outside the home, the child's delinquency level will be 8.48 units lower (compared with 7.12 units in the basic model) holding all else constant ($p < .001$). There is some disagreement in the literature as to whether there is a difference in effect on delinquency between mothers who are employed full-time versus part-time, once again centered around the opportunities for interaction and socialization that are discussed above. The model also was run with separate variables for whether the mother was employed full-time or part-time. Both variables achieved statistical significance (full-time $p < .001$; part-time $p = .073$) and were similarly negatively related to delinquency. Mothers who were employed full-time had a larger effect on delinquency, causing a drop in offending index of 9.12 units, compared with a drop of 6.20 units for part-time employed mothers, holding all else constant.

Being female once again lowers the delinquency score by just more than 10 units ($b = -10.26$; $p = .001$)—an effect which is comparable to that found in the basic model. Race is once again significant, with non-white delinquency scores predicted to be 7.78 units higher ($p = .001$) than non-whites holding all else constant, which is somewhat stronger than the 5.5 units predicted by the basic model. In addition, socioeconomic status reaches statistical significance ($p = .035$), indicating that as the index score rises, delinquency rates decrease by 2.92 units, all else being equal. The use of alcohol is similarly significant at the .05 level, raising the delinquency score by 5.63 units where the child uses alcohol, all else being held constant. Delinquent

peers raise a child's offense score by 4.74 ($p = 0.50$) and delinquent behavior is lowered by 2.66 units for every additional year that a child staves off such behavior ($p < .001$) with all else equal.

The extended model fares substantially better at explaining the variance in juvenile delinquency among this birth cohort, more than doubling the adjusted R-squared from 0.06 to 0.13 (although this remains low). Separating the data by gender again and rerunning the model shifts the results little in terms of boys. However, the use of alcohol fails to reach statistical significance, and the direction and magnitude of the other significant associations change little. The adjusted R-squared for the boys' model is comparable to that of the entire dataset at 0.12 ($n = 437$). Turning to the girls' model, mother's employment is once again statistically significant ($p = .031$) and results in a 4.01-unit drop in delinquency holding all else constant. The use of alcohol among girls is additionally significant at the 0.05 level, indicating that where a girl uses alcohol during childhood, her delinquency index will be increased by 5.85 units, all else being equal. While the adjusted R-squared for the girls' model fares better at 0.08 than for boys, the small number of cases ($n = 125$) and large number of variables cast doubt on the robustness of the findings.

Table 5. Extended Model Influencing Juvenile Delinquency in the 1958 Philadelphia Birth Cohort by Gender

Independent Variables	Females			Males		
	b	Std. Error	P-value	b	Std. Error	P-value
<i>Residential Mobility</i>	-3.09	8.28	.638	-1.47	7.95	.853
<i>Family Size (Siblings)</i>	-0.48	0.96	.618	1.6	.69	.272
<i>Family Crowding</i>	-0.11	0.42	.793	-0.74	0.58	.285
<i>Family disruption</i>	0.41	2.33	.861	-3.61	3.48	.31
<i>Mother Employed</i>	-4.01	1.84	.031 *	-9.17	2.70	<.001 ***
<i>Father Arrested</i>	-2.28	2.92	.437	-3.39	4.02	.399
<i>Mother Arrested</i>	5.15	5.44	.346	10.12	10.49	.336
<i>Socioeconomic Status</i>	-2.38	1.15	.041	-3.20	1.60	.046 *
<i>Race Use</i>	2.74	2.07	.190	8.64	2.71	.002 ***
<i>Alcohol Use</i>	5.85	2.80	.039 *	5.11	2.94	.083
<i>Drugs</i>	-0.48	1.92	.803	-0.56	2.88	.845
<i>Sexual Abuse</i>	1.36	5.59	.807	-4.05	5.27	.442
<i>Delinquent Peers</i>	2.99	2.50	.235	5.77	2.78	.038 *
<i>Early Onset</i>				-2.91	0.53	<.001 ***
<i>Intercept</i>	15.52	11.78	.192	56.43	10.08	<.001 ***
<i>Adjusted R-Squared</i>	0.08			0.12		
<i>n of cases</i>	125			437		

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

Discussion

Comparing the results of these analyses to the earlier study conducted using the Gluecks' dataset of delinquent boys, it is clear that neither the basic nor extended models reach the same explanatory level, with adjusted R-squared figures of at most 0.13 as compared to Sampson and Laub's 0.49. However, a word of caution is warranted in making such comparisons, given the small number of women in the dataset and the fact that the two datasets are not completely comparable, as they contain a number of different (and sometimes deficient) measures.

In some cases key variables which are included in the earlier model simply are not available in the Philadelphia data, for example measures of harsh and erratic parental discipline, parental abandonment, and rejection. Similarly, while Sampson and Laub extend their model to include school factors that account for a substantial increase in the explanatory power of their model, these measures are absent from the Philadelphia dataset. This introduces the possibility of lurking or omitted variables, for which there are few remedies given the nature of the data.

In addition, the Gluecks' data include measures of both official and unofficial delinquent acts and so may identify relationships and trends that are not visible when including only official data. Using such data creates an institutional bias in that school and criminal justice personnel are aware of a child's status as delinquent and therefore may be more likely to report antisocial behavior than for other children's similar acts. The converse is also true. For non-delinquent children officials may be prone to the 'halo-effect,' giving the same behavior more leeway than would be afforded their non-delinquent peers.

The dataset itself is also problematic in other ways. The follow-up study (which contains most of the variables of interest to this study) was focused heavily on collecting data from male respondents, despite the fact that the initial sample included more women than men. Even among the women that were sampled as part of the follow-up, it is questionable whether sufficient attention was paid to ensuring an accurate representation of both delinquent and non-delinquent girls. The quality of the data for the women respondents also appears to be of less quality. There are disproportionately more missing values among the women respondents and the majority of observations that were dropped because of a lack of cohort ID with which to link the three datasets were women.

It should also be noted that there may be cohort effects, which impact the findings of this study. It is conceivable that given the 20-year difference in birth years, as well as the geographical differences, between the Philadelphia and Glueck birth cohorts, the modes of family socialization and social control may have shifted, resulting in different findings. In addition, the time period in which the data were collected (with the final wave being completed in 1988) may well have influenced the salience of factors described in the extended model, as topics such as sexual and substance abuse have arguably only become more socially acceptable and openly discussed during the 1990s. As such, this may have influenced reporting levels, both among boys and girls.

In sum, then, this study presents a number of important results—both in terms of evaluating the applicability of life-course models to girls' criminality and testing a synthesis of the life-course and feminist pathways paradigms. The model shows support for life-course theory's emphasis on social control processes exercised through the family and suggests that better or more complete data may increase these commonalities. In order to more reliably test the replicability of a life-course model among girls, as well as the salience of a model that integrates factors identified by feminist pathways studies, the collection and mining of other longitudinal datasets must be encouraged.

The fact that integration of the feminist pathways perspective shows promising results in an (admittedly) limited dataset speaks volumes in support of the need for additional studies which synthesize life-course and feminist pathways analyses—for understanding both boys' and girls' delinquency and criminality. Looking forward, the challenge remains for researchers to develop a model that better explains *girls'* offending and for identifying how this differs from the life-course models developed for boys. This paper has begun this process by identifying the relevance of the boys' life-course models for girls and by integrating the feminist pathways paradigm. The methodological task is to eschew the over reliance on explaining offending based on high R-squared statistics and focus instead on developing parsimonious models that allow us to better understand the differences for women. Studies that mesh the life-course and feminist pathways paradigms and that integrate both qualitative and quantitative data collection methods undoubtedly would yield better and more interesting results. In addition, they would perhaps go a long way toward remedying the existing deficiencies in data and the gaps in our understanding of delinquent and criminal young women.

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