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PATTERNS OF CRIME IN EARLY PARENTHOOD

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Abstract

In recent years, life-course criminology has grown and explored a range of social role transitions of early adulthood, but parenthood remains an overlooked area of research. While some qualitative work has emphasized the potentially transformative nature of the transition to parenthood, quantitative estimates of parenthood’s effects on criminal involvement have varied considerably. I use data from multiple waves of the National Longitudinal Study of Adolescent Health (Add Health) to assess parenthood effects with multivariate, multi-level models.

This dissertation analyzes the influence of parenthood on crime over time (as youngest child’s age) and across context (as neighborhood disadvantage). First, I address a set of hypotheses derived from major criminological theories. I analyze the full sample to arrive at estimates of the effect of being a parent at the time of the transition to parenthood, as well as estimates of how that effect might change over time. The empirical pattern of crime as a child is born and raised has the potential to support or disconfirm theoretical mechanisms that might explain parenthood. Second, I address an empirical hypothesis recently raised by Kreager and colleagues (2010) as a reconciliation of disparate findings in the life-course literature. In keeping with some urban ethnography, they hypothesize that the crime-inhibiting parenthood effect may only exist for women in poor urban areas. They did not, however, test this inference directly. Using Add Health, I am able to start with a full sample and test for differences in parenthood effects among subpopulations.

With regard to the theoretical hypotheses, my findings show that parenthood has a short-term negative influence on crime in the full sample. This pattern is consistent with a routine activities explanation, as argued by Yule and Griffiths (2009) in research on family roles and victimization. Changes in identity and self-concept, as discussed in the theory of cognitive transformation (Giordano, Cernkovich, and Rudolph 2002) and the age-graded theory of informal social control (Laub and Sampson 2003), may also be plausible explanations. The finding of a fading effect of parenthood is difficult to reconcile with the hypothesized mechanism of internal control. Accordingly, the social bonding theory developed by Hirschi (1969) is especially threatened by these results.
The empirical hypothesis states that the parenthood effect may in fact be a motherhood effect limited to poor urban areas. I test for differences between contexts: the full sample, an urban sample, a disadvantaged urban sample, and gender within the disadvantaged urban areas. My results partially replicate and confirm the findings of Kreager and colleagues (2010). I do find significant reductions in crime among mothers in high-risk urban areas. Their hypothesis that a parenthood effect is found exclusively among this population, however, is not supported by my findings. I do not find significant variation between motherhood and fatherhood in their associations with crime in any analyses. The fading effect of parenthood from the main results, upon further inspection, appears to be concentrated in non-urban areas. Within urban areas, the drop in crime associated with parenthood may be more permanent for residents of disadvantaged neighborhoods.
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CHAPTER 1: INTRODUCTION

Research on crime and adult social roles in the life course is a burgeoning area, and few questions have been settled (for an extensive review, see Siennick and Osgood 2008). We have good reason to think that marriages can discourage criminal activity (Sampson and Laub 2003; Sampson, Laub, and Wimer 2006), although the meaning of this relationship still debated (Warr 1998; Bjerk 2009). Non-marital cohabitation with a romantic partner has not been shown to have a consistent effect (Horney, Osgood, and Marshall 1995; A. R. Piquero, MacDonald, and Parker 2002); nor has work (Uggen 1999, 2000; Savolainen 2009). The effects of parenthood also have yet to be clearly identified. Becoming a parent is often central in the transition to adulthood, and parenthood is undoubtedly perceived by many as a central role in their lives, yet criminological research has only begun to touch on this area of the life course.

Research Plans and Contributions

This dissertation advances research on parenthood in life-course criminology in several ways. First, I analyze existing criminological theories to derive hypotheses about parenting based on key theoretical mechanisms. Researchers have generally either interpreted their findings in light of one existing theory, or they have used their work to develop new theories about crime in the life-course. This is the first extended effort to draw out hypotheses from the mechanisms of several major general theories of crime, including social bonding, social learning, routine activities, and general strain theory. I also examine developments out of life-course work, including the age-graded theory of informal social control and the theory of cognitive transformation.

Second, I analyze the associations between parenthood and crime over time using data from Add Health, a national sample from a recent cohort of students. Findings on parenthood and crime have been mixed. This may be due to several issues, including limited samples and simple operationalization of parenthood. I employ measures of parenthood that incorporate the age of the youngest child, so that parenting influences over time on criminal involvement may be observed.
Third, I use the contextual measures available in Add Health to investigate the claim that parenthood effects may be limited to disadvantaged urban neighborhoods (Kreager et al. 2010). This dissertation offers the key advantages of having a large national dataset as well as contextual information, so that results can be compared between the national sample, an urban subsample, and a disadvantaged urban sample.

Finally, I present a discussion of this dissertation’s results that focuses on the consequences for the validity of several major criminological theories. Some etiological theories of crime can present themselves as theories of the middle range (Merton 1967): they describe the processes and mechanisms surrounding specific phenomena without laying claim to more general theories of human life. I analyze the consequences of the findings presented here for our understanding of several such theories. Other theorists, however, take a grander stance toward the place of their theories. Hirschi (1969) has maintained a totalizing approach to his favored theories. His social bonding theory is not merely a description of how a social bond might operate; it explains all conformity and violations of law. Therefore, findings here that appear to directly contradict Hirschi’s core mechanism, internalized controls, present a serious challenge to the empirical validity of social bonding theory.

Organization of the Dissertation

In Chapter 2, I review the available evidence on parenthood and crime. Qualitative research includes findings that the experience of becoming a parent can produce profound behavioral change, including desistance from involvement with drugs, alcohol, and crime (Edin and Kefalas 2005; Giordano et al. 2002; Laub and Sampson 2003). Quantitative work in criminology has only begun to look at parenthood recently, but these results have been much more mixed. Some studies have found declines in crime associated with parenthood (Blokland and Nieuwbeerta 2005; Kreager et al. 2010; Warr 1998), some no effect (Giordano et al. 2002; Stouthamer-Loeber et al. 2004; Warr 1998), and some have even found significant increases in crime or drug use (Stouthamer-Loeber and E. H. Wei 1998; Thompson and Petrovic 2009). As a relatively young area of research, existing quantitative work shares a number of limitations. Many studies are confined to single cities,
and several are restricted to men or women only. Almost all studies use a single measure of parenthood or residence with a child.

In Chapter 3, I discuss several criminological theories and their relevance for the transition to parenthood. Several of the most prominent general theories of criminology are represented: social bonding (Hirschi 1969, 2004), social learning (Burgess and Akers 1966; Akers 2009), routine activities (L. E. Cohen and M. Felson 1979a; M. Felson 1998), and general strain theory (Agnew 1992, 2001). I then review the tenets of two criminological theories that are closely connected to life-course research: the age-graded theory of informal social control (Sampson and Laub 1993; Laub and Sampson 2003) and the theory of cognitive transformation (Giordano et al. 2002; Giordano, Schroeder, and Cernkovich 2007). Finally, I address the vocabulary that has been developed in the sociology and criminology of the life course, including the guiding themes of Elder’s work (1994, 1998) and several common metaphors of transitions and change.

Chapter 4 presents the two guiding research questions for this dissertation. First, what is the relationship between parenthood and crime? To help address this first question, I assemble a set of hypotheses based on the mechanisms proposed by the criminological theories reviewed earlier. Second, is the parenthood effect stronger in disadvantaged neighborhoods? I revisit the arguments of Kreager, Matsueda, and Erosheva (2010).

Chapter 5 describes the data and the methodology used in this dissertation. The data used here come from the National Longitudinal Study of Adolescent Health (Add Health), a longitudinal study begun in the 1994–1995 school year with a national sample of middle and high school students. Using data from the first wave and from follow-ups in 2001 and 2008–2009, I employ multilevel models to separate between-individual from within-individual variation. This methodological approach allows us to separately ask “do parents commit more or less crime than nonparents?” and “do people commit more or less crime during times when they are parents compared to times when they are not?”

Chapter 6 presents the results of the main analyses in this study. Parenthood effects on crime are estimated with two terms: parenthood, and the age of the youngest child. This technique allows us to observe both how crime changes at and how that influence may change over time. Separate
models for men and women are used to compare parenthood findings by gender. Findings indicate a decline in crime at the transition to parenthood that fades over time to nonsignificance. The hypotheses of theoretical mechanisms from Chapter 4 are judged by this pattern of results. Chapter 7 investigates the ideas of Kreager and colleagues (2010) that socioeconomic status and neighborhood disadvantage may help explain divergent findings. I use subsamples of the Add Health data to work down to analyzing parenthood by gender in poor, urban areas.

Finally, Chapter 8 presents the conclusions of this dissertation. Based on how the theoretical hypotheses fared, I also discuss the implications of these results for the criminological theories presented in Chapter 3. Each theory is discussed, but Hirschi’s social bonding theory is most strongly contradicted by the findings of this study. Following an assessment of the limitations of this study, I offer notes on several promising avenues for future research on parenthood and crime.
CHAPTER 2: EMPIRICAL FINDINGS ON PARENTHOOD AND CRIME

As criminologists have sought to explain stability and change in crime associated with life events, marriage has been the focal topic of research. Researchers have employed a range of data sources and methodological approaches to explore the question of how marriage influences criminal activity (Bersani, Laub, and Nieuwbeerta 2009; King, Massoglia, and Macmillan 2007; Laub and Sampson 2003; Sampson et al. 2006). Results have generally supported the thesis that marriage has a protective effect against crime: married people are committing less crime than the unmarried, and becoming married may be a potential turning point in the lives of offenders. Work focused on the influence of romantic relationships has produced foundational empirical and theoretical work in life-course criminology (Horney et al. 1995; Laub and Sampson 2003; Sampson and Laub 1993; Warr 1998).

Meanwhile, parenthood has only recently begun to receive attention in its own right (Giordano et al. 2011; Kreager et al. 2010; Savolainen 2009). Are parents less criminal than non-parents? And does the transition to parenthood lead to desistance from crime? Criminologists are starting to recognize the importance of parenthood as a main topic of research, but the overall findings have been mixed (review in Siennick and Osgood 2008).

Existing Research on Parenthood and Crime

Research focused on both parenthood and crime was sparse until recent years, but several themes and findings of qualitative work in urban sociology are germane.

Urban Ethnographies

Ethnographic work in high-risk neighborhoods has shown how young men and women are challenged by the threats and temptations of crime, violence, and drugs. Anderson’s (1992, 2000) research described inner-city black communities in terms of “street” and “decent” orientations, terms used by the residents themselves. Although previous generations were able to rely on the wisdom of “old heads,” today’s young inner-city parents have fewer positive role models, and this makes the role of “decent daddy” ever more
difficult. In the context of parenthood, the decent daddy is committed to the mother of his child, keeps out of trouble, and provides for his family legally. The street-oriented father – sometimes described by women as “the nothin’” – is only out for himself, and he is uncommitted to his life as a father (E. Anderson 2000:167). Street-oriented men can face pressure from their romantic partners to mend their ways, an effort that is rarely entirely successful. At the other extreme, the young man who shows significant commitment to his family runs the risk of being derided as “a pussy” by his male peers and by other women. While some men manage to keep on the path of the decent daddy, Anderson depicts the unemployment, segregation, discrimination, alienation, and violence of these neighborhoods as relentlessly demoralizing (2000:325).

In his ethnographies of fatherhood, Roy (2004a, 2004b) has described the explored strategies adopted by some men to face the challenges of family life in dangerous neighborhoods. Fathers may work out safe times and safe spaces in order to manage risks to themselves and their children. One father could precisely identify the risks at hand: “On the block itself it was decent, but three blocks around you would see some gangs. You can always live in a block, and go a block off and it’s a whole new world” (Roy 2004a:537). “Staying out of trouble” is a major goal for these men, and that trouble encompasses victimization from gangs and the attention (justified or unjustified) of the police. But increased pressure to provide for their family and tough economic situations can lead some fathers to risk trouble by entering the drug trade (Roy 2004b).

Edin and Kefalas (2005) analyzed motherhood in highly disadvantaged urban neighborhoods. Some of their work is complementary to Roy’s ethnography, as similar relationship dynamics are portrayed from the women’s perspective. The interviewed women, many of whom became mothers as teenagers, discuss at length the intransigence of the fathers of their children. Unable to hold down steady jobs and unwilling to leave their friends, the fathers’ apparent lack of commitment to their families is a clear frustration to the mothers. Worse, some mothers even reported an increase in the father’s drug or alcohol use as a result of the birth of their child: “He was more into his drug than he was into his family. It would get even worse once the baby was born because he would…tell me he would feel the pressure of taking
care of his family” (Edin and Kefalas 2005:89). When reporting on their own lives, on the other hand, the mothers reported dramatic changes as a result of having children. They no longer spend time “running around” on the streets, and they minimize their drug and alcohol use. They were transformed by motherhood, and they have gained maturity, responsibility, and self-respect. In a stark contrast to an earlier life “spinning out of control,” they find that a child “brings order out of chaos” (180). These themes are found across other qualitative on young mothers in high-risk areas, including the experiences of girls leaving gangs (Hunt, Joe-Laidler, and MacKenzie 2005; Lesser, Koniak-Griffin, and N. L. R. Anderson 1999).

In short, many mothers and fathers view their transition to parenthood as a source of substantial change. However optimistic these accounts may be, however, a note of caution may be in order. Interviews that focus on parenthood may unintentionally overstate the importance of parenthood for desistance from crime or drugs. When interviews are framed around pregnancy and the transition to parenthood, participants are primed to reflect on their children and their role as parents (e.g., Hunt et al. 2005). More open-ended research suggests that participants will not always frame parenthood as a central role, and this may be especially true among high-crime populations. So, for example, the property offenders interviewed by Shover (1985) spoke of ties to romantic partners, ties to employment, and even ties to education – but parenthood is rarely mentioned. In their follow-ups with incarcerated samples, Giordano, Cernkovich, and Rudolph (2002: 1039) found that children were at the front of 26% of women’s narratives and only 7% of men’s narratives. Additionally, if a discussion of parenthood is limited to parents who currently have full custody (e.g., Edin and Kefalas 2005), the study design excludes parents who likely experienced the transition as less transformative (e.g. step-parents, non-resident parents, and parents who have lost custody). Quantitative analyses abstract from the particulars, details, and meanings of individuals’ lives, but they may also give a broader view of how the transition to parenthood is related to stability and change in crime.
Other Early Work

One of the first quantitative examinations of parenthood as a potential cause of desistance from crime is found in Graham and Bowling’s research conducted for the UK Home Office (1995). They found that transitions into adult social roles, including economic independence, cohabitation, marriage, and parenthood, all appeared to encourage women to desist from crime. Men, however, appeared to be less reliably influenced by these role changes. Graham and Bowling suggested that fatherhood could have a bifurcated effect. Some young fathers might develop responsibility, choose to spend less time with their friends, and thereby lessen their criminal activity. Others, however, might react in the opposite way, “fleeing from their relationship with their partner and withdrawing further into their peer-groups and its [sic] associated activities” (1995: 98).

Research on substance use has offered one view of how the initial transition to parenthood might change criminal involvement, as its influence on mothers may begin with pregnancy. Gilchrist and colleagues (1996) found that mothers reduced their use of tobacco, alcohol, and illegal drugs during pregnancy. Following pregnancy, their tobacco and alcohol use increased toward their earlier levels while illicit drug use remained significantly lower than before. Further research suggested that mothers held negative beliefs and perceived negative consequences of substance use during pregnancy, but these negative attitudes weakened as months passed after birth (Morrison, Spencer, and Gillmore 1998).

Quantitative Findings

When quantitative analyses have estimated the differences in crime between parents and non-parents, or the differences over time for those who become parents, no clear parenthood effect has emerged. Some studies, paralleling the dominant themes of qualitative research, have found that parents, especially mothers, reduce their criminal activity. Many studies have found a blend of null results and significant negative associations between parenthood and crime, with a parenthood coefficient varying between models of different subpopulations or dependent variables. Table 12 in the Appendix summarizes the existing quantitative criminological research on parenthood. From the findings of studies with mixed results, only one differ-
ence emerges with some consistency: motherhood appears to have a greater influence on crime than fatherhood.

*Increases in crime during parenthood.* Two published studies have recorded significant increases in crime associated with parenthood. Using data from the National Youth Survey, Thompson and Petrovic (2009) used a fixed-effects model to analyze within-individual variation in family roles and illicit drug use (excluding marijuana). They found that during periods when individuals reported being parents, they reported more use of illegal drugs during periods without children. This result held whether the outcome was any reported drug use or frequent drug use. The positive parenthood association remained net of other family roles, employment factors, and the self-rated importance of family and work. An interaction testing whether the parenthood effect varied between mothers and fathers was nonsignificant. The only finding that parenthood could reduce crime involved restricting the sample to the unmarried, non-cohabiting subpopulation. Non-cohabiting mothers (who are likely living with their children) did show a reduction in drug use, whereas non-cohabiting fathers (who are likely not with their children) increased their drug use.

Stouthamer-Loeber and Wei (1998) also found an increase in offending among the fathers of the Pittsburgh Youth Study, a longitudinal study of that followed male students from urban Pittsburgh starting at ages 12–13. Using matched controls, their results indicated that the boys who became teenage fathers reported higher rates of delinquency than matched boys. After childbirth, these differences became even greater. While non-fathers’ self-reported delinquency was on the decline, the young fathers’ reports of delinquency nearly doubled during the transition to fatherhood and in the following year. Later analyses using additional follow-ups of the same data did not address the question of fatherhood as directly, instead only measuring whether the respondents were “caring for children with a current partner” (Stouthamer-Loeber et al. 2004). Reflective of the first study’s finding that delinquency among the boys was associated with having children, persisting and desisting men had similar rates of co-parenting (56% and 58%, respectively) whereas those reporting less delinquency throughout were less likely to be co-parents (41%). Within this more limited scope of parenting, their results
did not suggest either an increase or decrease in crime associated with partner
ered fatherhood.

**Null parenthood effects.** Nonsignificant parenthood estimates such as these are more common in the existing quantitative research than findings of in
crime. Some quantitative work has come up with no effect at all of parenting or parenthood status, but these are older studies, and some have unusual features or methodological issues.

In his examination of the role of peers in the transition to marriage and crime, Warr (1998) included measures of living with children. Like the later work by Thompson and Petrovic (2009), this study used the National Youth Survey, but the outcome for Warr’s analysis was marijuana use rather than their ‘non-marijuana illicit drug use’ measure. Focused on the mediation of marriage effects by peer relations, Warr paid relatively little attention to his parenthood results other than to rule out parenting as a mediator. His results showed that married respondents reported similar rates of desistance from marijuana use whether they were living with children or not, and the same applied to unmarried respondents. The presence or absence of children also had no statistically significant association with the respondent’s involvement with delinquent peers. Although living with children may be a reasonable measure of parenthood, Warr’s rhetorical slide from “desistance from crime” (as in the title) to marijuana use may be significant. Perhaps living with children does not decrease minor drug use, but this is not a direct compar-
son to other studies that look at parenthood and general self-reported delin-
quency or more serious crimes.

As discussed earlier, the interview data from Giordano and colleagues’ (2002) work with a formerly institutional sample suggested that about one in four mothers (and fewer than one in ten fathers) claimed parenthood as central to their desistance. The quantitative data is less clear, with no significant findings from attachment to children, but this null effect could in part be due to the nature of the study. First, the sample used here is small compared to other quantitative studies in life-course criminology (N = 197). The regression models therefore have relatively low statistical power; a smaller effect that could have come up significant in other studies would be missed here. Second, they did not use an objective measure of parenthood. Instead, “at-
tachment to children” is measured from a Likert-type response item: “I’m
closer to my kid(s) than a lot of people my age are to theirs” (Giordano et al. 2002:1007). Rather than a variable that compares parents to non-parents, then, this is an item that measures a sort of subjective relative attachment to children.

One final study that could be interpreted as showing no significant parenthood effect used a measure of whether serious offenders in the National Supported Work Demonstration Project reported having dependents (Uggen 1999). There was no significant effect for having a dependent on later self-reported crime, economic or non-economic. Dependents are not necessarily children, and in fairness, it should be noted that Uggen intended this variable as a control to help indicate the social position of the respondents. The dependents measure is never interpreted in this study as a substantive measure of parenthood.

Comparing mothers and fathers. More often, the same distinction found in some ethnographic work between mothers and fathers is confirmed by a number of quantitative studies. Mothers often appear to be more influenced by parenthood than fathers when it comes to criminal activity.

Uggen and Kruttschnitt (1998) produced some of the first quantitative research that focused on gender differences in processes of desistance over the life course. Although it drew data from the same National Supported Work Demonstration Project as Uggen (1999), this study used a parenthood measure of presence of children in the home (rather than dependents), and models predicted illegal earnings (rather than self-reported criminal behavior). Results showed that mothers were less likely to report illegal earnings than other women, but this effect did not extend to fathers. Neither fathers nor mothers were more likely to be arrested, but these effects were net of illegal earnings and drug use, so the parenthood effect could have been mediated.

Staff and colleagues (2010) also found gendered parenthood effects on drug use with data from the Monitoring the Future study. A particular strength of this research is the longitudinal, multi-wave, nationally-representative sample design. Annual cohorts of high-school seniors from 1977 to 1998 received follow-up surveys every other year, and this study uses follow-ups to age 27–28. Both men and women used less alcohol overall and drank heavily less often during times when they were parents. Mothers,
whether they lived with their children or not, used less marijuana and less cocaine during periods of parenthood compared to when they were not parents. Fathers, on the other hand, only used fewer illicit drugs they resided with their children. The effect size of fathers was also smaller, significantly smaller than the association between marriage and crime. Indeed, the resident fatherhood effects are small enough that most studies – having smaller samples and fewer follow-ups – would not have the statistical power to detect them.¹

A recent study by Giordano and colleagues (2011) investigated the parenthood effect with special attention to the conditions and contexts of parenthood: gender, socioeconomic disadvantage, relationship status, and whether the pregnancy was wanted. They found overall that women were more likely to report lower crimes during parenthood than men, but fatherhood effects did emerge from some conditions of parenthood. In areas with high socioeconomic disadvantage, both men and women reported lower crime during periods of parenthood. This parenthood effect within areas of high disadvantage held for both men and women throughout, as other effects were interacted with parenthood. Only wanted pregnancies influenced the criminal involvement of mothers; overall, fathers were still not significantly less likely to commit crime whether or not the pregnancy was wanted. The range of results suggested that although motherhood effects are more general than fatherhood effects, but the influence of parenthood for either gender can vary across context and conditions.

Not every study has uncovered the same gendered pattern. Yamaguchi and Kandel (1985) analyzed retrospective life history data from adolescence to the mid-twenties from a follow-up of a sample of New York public school students. In order to observe the processes of behavioral and role entry and exit, they modeled initiation, resumption, and cessation of marijuana use separately. Women were likely to stop using marijuana in the year prior to childbirth. Men, on the other hand, were likely to stop in the year following childbirth. Men, on the other hand, were likely to stop after the year following childbirth.

¹ Only unstandardized coefficients are reported. For cocaine, $B = -0.03$ ($t = -2.91$); the mean cocaine use for men is $0.18$ (S.D. = 0.45). For marijuana, $B = -0.02$ ($t = -3.37$); mean marijuana use for men is $0.59$ (S.D. = 0.83). These effects therefore represent changes of less than one tenth of a standard deviation. The sample size is 54,789 occasions within 18,555 men, a dataset of impressive size.
childbirth. Rather than attributing the women’s pre-motherhood cessation of marijuana use to pregnancy, they consider it part of an anticipatory socialization effect (matching the pre-motherhood findings to pre-marriage effects shared by men and women in their study).

Other mixed findings. Research from the Netherlands found few significant parenthood coefficients and no clear pattern in their effects on offending. Blokland and Nieuwbeerta (2005) presented results from two studies, each with a different dataset. The first modeled self-reported offenses in a national crime survey of the Netherlands. The second modeled official convictions using the Criminal Career and Life-Course Study (CCLS), which follows a sample gathered from Dutch convictions in 1977. Within each sample, participants were divided into trajectory groupings: sporadic and low-rate offenders in both samples, as well as moderate-rate and high-rate offenders in the CCLS. Parenthood is measured as three dummy variables: separated parent, single parent, or (non-separated, non-single) co-parent. Within-individual analyses showed that co-parenthood was associated with a significant increase in offending among sporadic offenders in the CCLS, but a decrease associated with single parenthood for low-rate offenders. In the national survey, no within-individual effect of parenthood was significant.

One study of men alone has found a significant fatherhood effect, employing data from a sample of male Finnish felons with multiple prior convictions (Savolainen 2009). The study uses information from five years of data collection, starting with a subsample with “non-existent ties to work, family, and children” at the first round in 1996. Entering into a union with children predicted a decrease in new criminal convictions. An issue with this result is that parenthood is not measured independently of marriage or cohabitation. No coefficient captures the association of parenthood with crime separately from romantic union. Unlike other studies that are often comparing parenthood to non-parenthood, this is a combined effect that is simultaneously comparing co-parenting to all other conditions (single fatherhood, non-residential fatherhood, and non-fatherhood).

Massoglia and Uggen (2007) did not examine differences between men and women, but their study is unique in its comparisons between several measures of desistance: subjective (self-perception of fewer crimes compared to five years ago), reference (self-perception fewer crimes than other people
your age), behavioral (typical self-report delinquency), and official (arrest free for three years). For parents, the influence on desistance was mixed. Parents were significantly less likely to be arrested, but parents also reported on average that they committed more crimes than other people of the same age. There was no difference found between parents and non-parents on subjective or behavioral desistance.

All told, the existing quantitative work on parenthood in criminology does not yield a single clear story. Ethnographic studies indicated that parents, especially mothers, can often be powerfully influenced away from crime, and children are often described by participants as central to their pathway toward desistance. Quantitative research has been more mixed, with several studies finding null results across the board. When significant parenthood effects appear in quantitative research, they are often limited to subpopulations, and they are nearly always smaller in magnitude than the coefficients for marriage.

An Effort at Reconciliation

I have saved one final quantitative study for special attention, because it positioned itself as a reconciliation of the criminological findings thus far. Kreager, Matsueda, and Erosheva (2010) aimed to bridge what they saw as a gap between ethnographic and quantitative findings: the population being studied. If ethnographic studies so far have focused on young mothers in disadvantaged neighborhoods, they argue, than quantitative studies with broader samples could be assessing a different kind of parenthood altogether. They proposed that this apparent contradiction in results is actually a symptom of treatment effect heterogeneity. Parenthood might simply not mean the same thing for every subpopulation, and so quantitative work could instead follow the lead of ethnographies. If inner-city mothers in disadvantaged neighborhoods are experiencing the transition to parenthood as transformative, then quantitative studies that use national samples or general populations are missing the mark.

Kreager and colleagues took advantage of the disadvantaged neighborhoods of urban Denver sampled in the Denver Youth Survey to follow through on their idea. Using a within-person analysis of crime through the early years of motherhood, they found significant results for a range of
outcomes. Self-reported delinquency, marijuana use, and alcohol use all dropped in the years following childbirth. Further restrictions in the sample to look within more severely disadvantaged of neighborhoods, however, showed no difference in the parenthood effect.

**Limitations of Existing Quantitative Research**

With these studies, sociologists and criminologists have taken the first steps in understanding the relationship between parenthood and crime. As valuable as they are, there are several common restrictions of samples and measures in the quantitative studies that make it difficult to ascertain the generalizability and specificity of their estimated parenthood effects. Not all existing research has these limitations, but no one study is free of them.

**Demographics of Samples**

*Gender restrictions.* A few studies are limited to men only or women only, making comparisons between motherhood and fatherhood difficult. The Pittsburgh Youth Study is similarly limited to men (Stouthamer-Loeber and E. H. Wei 1998; Stouthamer-Loeber et al. 2004). Although men are also available in the Denver Youth Survey, Kreager, Matsueda, and Erosheva (2010) chose to analyze only the women. Several other studies that have compared motherhood and fatherhood have used interactions rather than separate models, which could bias effects if they are failing to account for broader gendered processes (Blokland and Nieuwbeerta 2005; Giordano et al. 2002; Massoglia and Uggen 2007; Warr 1998).

*Older cohorts.* The twentieth century saw significant changes in childbearing, including the decoupling of marriage and parenthood. Our data can only be so fresh, of course, but if we rely on older cohorts for analyses, demographic changes might make our conclusions less relevant for today’s social world. Most studies include samples with birth cohorts predominantly in the 1950s (Blokland, Nagin, and Nieuwbeerta 2005; Blokland and Nieuwbeerta 2005; Yamaguchi and Kandel 1985), the 1960s (Giordano et al. 2002; Savolainen 2009; Thompson and Petrovic 2009; Warr 1998), and occasionally the 1970s (Graham and Bowling 1995; Kreager et al. 2010). One notable exception a study drawing data from the Toledo Adolescent Relationships Study, which includes only birth cohorts of the 1980s (Giordano et al. 2011).
**Convicted samples.** Several studies, including some of the most prominent research on family roles and crime, contain a high proportion of convicted offenders. Half of the Glueck sample (S. Glueck and E. T. Glueck 1950), most of the National Supported Work Demonstration Project participants (Uggen 1999; Uggen and Kruttschnitt 1998), and the entire Ohio Longitudinal Study (Giordano et al. 2002) were drawn from correctional populations. Most of the non-American data is also sourced from convicted populations, including Finnish offenders (Savolainen 2009) and Dutch offenders (Blokland et al. 2005). Using an offender sample is not necessarily a problem; for some framing of research questions, such as desistance from serious crime, they may be required. Still, the demographic and social differences convicted or incarcerated samples and the general population can be vast. If one’s interest lies in broader theories of crime, and not just desistance from serious crime, offender populations may skew the conclusions being drawn away from general processes.

**Measures of Parenthood**

Very few studies have examined parenthood in detail. Several studies have restricted themselves to resident parenthood only (Savolainen 2009; Uggen and Kruttschnitt 1998; Warr 1998). Others have used unusual measures, such as the relative “attachment to children” measure (Giordano et al. 2002) or co-parenting (Stouthamer-Loeber et al. 2004). As the theoretical review below will demonstrate, there are good reasons to expect that the effects of parenthood may vary by the conditions of parenting, and especially by the age of the child. Yet few studies even report the range of children’s ages. Only Kreager, Matsueda, and Erosheva (2010) clarified the ages of the children in question, using a separate variable for child’s age to observe parent’s crime as the child ages. If parenting children at different stages of life—infants, toddlers, schoolchildren, adolescents—has varying effects on parental crime, then it becomes extremely difficult to interpret the results of the existing research. Parenting among a general sample in their mid-twenties may be a very different kind of social role from that of offenders in their mid-forties. Existing research is nearly silent on this issue.
Accounting for Selection

Because transitions into social roles like marriage and parenthood are not random, researchers must try to account for the differences between those who enter into these roles and those who do not. I will revisit and discuss the topic of selection at greater length below, but it is sufficient here to note that studies have made varying use of longitudinal data. Most recent research has employed within-person analyses to great effect, employing repeated measurements of individuals who thereby “serve as their own controls” (Giordano et al. 2011; Kreager et al. 2010; Siennick et al. 2011; Staff et al. 2010; Thompson and Petrovic 2009). However, some older studies were purely cross-sectional, including a control variable to adjust for variation in previous crime or delinquency (Giordano et al. 2002; Graham and Bowling 1995; Uggen and Kruttschnitt 1998; Warr 1998). By comparing individuals over time, and by observing how their involvement in crime changes as they approach parenthood and become parents, we can help to avoid conflating different kinds of relationships. If different kinds of people become parents, and if those differences also relate to crime, we need to try to separate out the role effects (differences in actually becoming a parent) from selection effects (differences in who is becoming a parent).

Problems for Research Involving Other Social Roles

Although I have focused on parenthood research in criminology, the exclusion of parenthood poses a potentially serious problem for studies of other social roles and crime. There is a correlation between life events in the transition to adulthood. Married couples are more likely to become parents (or already be parents) than unmarried couples. Parenting can also influence participation in the labor force, though the association is less direct association than that with marriage. If a study presents a finding of an effect of marriage on crime without controlling for parenthood, part of that apparent marriage effect could actually reflect the influence of parenthood. Quantitative analyses that leave out parenthood may therefore produce biased estimates of other social roles.

In summary, the literature on parenthood, parenting, and crime is still fairly limited. Some research outside criminology, particularly ethnographic work with disadvantaged populations, suggests that mothers and fathers
may see substantial declines in criminal behavior due to parenthood. Recent quantitative research has been mixed, however, and few studies have shown unambiguously strong effects of parenthood on crime.
CHAPTER 3: CRIMINOLOGICAL THEORIES AND LIFE-COURSE CONCEPTS

New work in developmental and life-course criminology has confronted the older class of criminological theories, many of which are temporally static (Farrington 2003). The original formulations of social bonding, social learning, routine activities, and general strain theories explained differences between individuals in their rates of crime, or between situations in their likelihood to produce crime. In recent years, criminologists have applied and adapted existing theories to changes in criminal activity over the life course. As Akers has written about this area:

[The life-course] perspective does not represent a new theory of crime with a new set of explanatory variables; rather, it seems to be a systematic way of raising questions about how important variables drawn from extant criminological theories do or do not operate at different life stages. (Akers 2009:349)

It might be debatable how “new” any set of explanatory variables can be, but what Akers has laid out here is essentially the path that the present study takes. I raise questions about the key mechanisms of major criminological theories, asking how they operate during the transition to parenthood.

Below I review six theoretical perspectives, focusing on the theorized mechanisms that would guide hypotheses about the relationship between parenthood and crime. Four are in the class of major criminological theories that have dominated research in recent decades: social bonding, differential association/social learning, routine activities, and general strain theory. These theories have elements that can be emphasized as especially relevant to questions about changes in crime associated with social role transitions. Another two are more recent developments that have been developed from within a life-course perspective: the age-graded theory of informal social control and the theory of cognitive transformation. Much of the existing work on desistance has focused on the testing or development of a single theory, but each of these theories is able to contribute hypotheses regarding parenthood and its relevance to criminal activity.
Social Bonding

The study through which Hirschi introduced his theory of social bonding has become a criminological classic. *Causes of Delinquency* (1969) captures well a particular approach to criminological theory and research that came to take hold in criminology: quantitative, competitive theory testing based on self-report questionnaires. Hirschi claimed a classical foundation for social bonding theory in the ideas of Hobbes and Durkheim. He simultaneously disparaged what he considered “sociological thinking” and theories of crime that he considered too “common-sense.” Prime targets of his critique followed in the traditions of Sutherland (emphasizing how all behavior is learned from others) and Merton (emphasizing the role of structural strain, the conflict between cultural goals and structured legitimate opportunities). His own control theory, he argued, provided the more accurate image of criminal activity.

In Hirschi’s theory, humans are to be seen as naturally selfish and calculating, entirely immoral without the influence of society. Crime and delinquency are not social behaviors that can be learned: they are individualistic urges that society abhors. The question should not be why people commit crime; rather, it should be: why do they not commit crime? To that end, Hirschi proposed four elements of a social bond that connects individuals to society and discourages them from deviation. The stronger the bond, the less likely an individual is to break from society and engage in delinquent or criminal behavior. Although he focused on children and delinquency in his original monograph (working as he was with a sample of schoolchildren) the theory has been widely applied to both delinquency and adult crime. Some portions have tweaked over time, but the essential components of the social bond have remained the same (Hirschi 1969, 2004): attachment, commitment, belief, and involvement.

Attachment is a distinctively emotional component of the social bond. In his original statement, Hirschi casts attachment as the path to the internalization of norms, the root of the conscience or the superego. The greater the

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2 Somewhat more recently, Hirschi (1986) has argued that social bonding theory had already built in a basic rational choice model, long before rational choice approaches gained significant attention in criminology.
“psychological presence” of the parent when the opportunity to commit a crime occurs, the more attached a child is and the less likely that child is to be delinquent (1969:88). Over time, and in part due to expanding the theory beyond the parent-child relationship, the attachment element of social bonding theory\(^3\) has come to mean the emotional component of personal risk management (Hirschi 2004). When I am going to act, how might this affect the people to whom I have an emotional connection? What consequences might there be to my emotional well-being and that of those whom I care and respect? These personal ties (extended even to inanimate objects) are, in Hirschi’s view, always threatened by criminal behavior. Highly attached individuals will therefore act to preserve their emotional ties by avoiding crime.

Commitment is, simply put, the fear of consequences. Time and effort are invested in conventional institutions, and ongoing and future returns from these interests are jeopardized by criminal sanctions. The investment in society, including relationships, education, or careers, thereby produces a commitment to conformity. “To the degree that one’s goals are incompatible with a history of criminal acts or are endangered by reckless behavior, to that degree such acts and behavior will be avoided” (2004:540). In this most recent statement, Hirschi considers commitment to be the whole of the rational portion of personal risk management, effectively dichotomizing the rational and emotional elements into commitment and attachment.

The third element of the bond, belief, is constructed to oppose the reasoning of “cultural deviance theories” (e.g., A. K. Cohen 1955; Miller 1958) as well as techniques of neutralization (Sykes and Matza 1957). Hirschi considers some level of belief in society’s social rules to be a prerequisite for considering the act to be deviance: “we not only assume the deviance has believed the rules, we assume he believes the rules even as he violates them” (23). If a deviant actor does not believe in society’s rules, or if she adheres to some other cultural tradition, then Hirschi does not consider the act to be deviant.

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\(^3\) Although the social bond has always been the fundamental principle of his theory, Hirschi rejected the term “social bonding theory” for years, calling it a “gross and repeated mislabeling.” He accused Akers of intentionally making a “caricature” of social control theory by calling it bonding (1996:250). However, in more recent writing he appears to have embraced the label of “social bonding,” and so I employ it here as well (Hirschi 2004).
It is, instead, an act of conformity with some other set of values, as in a culture conflict (Sellin 1938). The “strength” or “weakness” of those beliefs tells us something of the delinquent’s ability to act against his or her own moral rules (Hirschi 1969:200). In one sense, because attachments and commitments to others are said to generate strong moral beliefs, we might see belief as a secondary kind of mechanism, mediating the effect of the other elements of the bond on crime.

The final element, involvement, has today become somewhat crowded out by the theory of routine activities, a separate criminological theory that takes situational opportunity as its organizing concept. Hirschi’s idea of involvement was that time spent in any number of conventional activities – such as playing sports, time with parents, watching television, or employment – would all contribute to lower levels of delinquency. More time spent in conventional activity would mean less time being delinquent (as these two activities are, he thought, incompatible). His own results showed, however, that only time spent doing homework was significantly predictive of lower levels of delinquency. Involvement was kept in the theory, but Hirschi downplayed its role from the start. Ten years after the publication of Causes, the introduction of routine activities theory (L. E. Cohen and M. Felson 1979a) presented a treatment of the situational inducements and opportunities for crime and delinquency that surpassed the relatively simple conceptualization of involvement. Hirschi found that routine activities, rational choice, and his own social bonding theory were sufficiently consonant that all three “must be considered the same theory” (Hirschi 1986:44). In this light, the best current interpretation would view involvement as a placeholder for more refined theory and research on opportunity. Routine activities theory stands on its own merits, and so here I take the other three elements of the bond as the key explanatory mechanisms of social bonding theory: commitment, attachment, and belief.

Although Hirschi’s control theory was originally formulated for schoolchildren, it has since been brought to the world of adult crime.Turning to adult social roles and relationships, the theoretical predictions that social

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4 It should be noted that Hirschi expects that situations of culture conflict are rare and unimportant to the general study of delinquency.

5 Hirschi devoted a mere 10 pages of Causes of Delinquency to the chapter on involvement.
bonding theory makes about crime are clear. The major emphasis, in both attachment and commitment, is on having “stakes in conformity” (Briar and Piliavin 1965). Children are attached and committed to their schools and parents, reducing their delinquency; entrance into marriage or parenthood should similarly strengthen the social bond. Spouses and children are excellent loci of commitment and attachment, and to the extent that belief flows from attachment, the full social bond is in force.

Social Learning

Social learning theory as it exists today is an adaptation and elaboration of ideas found in Sutherland’s differential association theory (Sutherland and Cressey 1966), and its most prominent theorist and champion is Akers (2009). At the heart of differentiation association rests the principle that crime is learned in the same way as all human behavior. Against the control theory principle that crime is a matter of natural self-interest, learning theories argue that we learn to commit crime just as we might learn to play chess, through processes of interaction and socialization. Based on what one knows and believes about crime from previous experiences, one may have favorable attitudes and perceptions regarding crime. Some situations can then be seen as ‘calling for’ criminal behavior; or, when achieving one’s goals, criminal behavior may appear to be a useful means. Differential association theory has often been oversimplified to a theory of peer influence or “cultural deviance”: peers teach us our values, so it’s about whether our friends teach us that crime is good (Akers 1996). But learning is by no means limited to friends or peers. The ratio of deviant to conforming definitions, and therefore the frequency with which we see crime as valuable, will be influenced by our full range of interactions, including the influences of parents, conventional adults, and even impersonal sources of learning such as mass media (Burgess and Akers 1966).

The additions made to turn differential association into social learning theory are primarily derived from behavioral psychology (Akers 2009). Alongside Sutherland’s emphasis on social associations and the balance of definitions, Akers has added differential reinforcement and imitation. Reinforcement covers the range of positive and negative punishment and rein-
forcement: behavior is encouraged when the consequences we experience are positive or enjoyable, and discouraged when they are negative or harmful. In sum, then, social learning theory expects that criminal behavior is encouraged when we are in contact with others who support crime, when we are exposed to more definitions that favor crime; when we observe models of crime; and when our own deviant behavior is reinforced (50–51). Quantitative research has generally found support for the influence of each of these four concepts (Pratt et al. 2010). Life-course criminology does not thus far seem to have influenced Akers dramatically; he has simply interpreted life-course transitions into marriage and employment in terms of their influence on relationships with deviant or conventional friends and significant others (Akers 2009:349–350; Simons et al. 2002; Warr 1998).

Routine Activities

Routine activities theory seeks to explain the presence, absence, and distribution of opportunities for crime, originally direct-contact predatory crimes (L. E. Cohen and M. Felson 1979a; M. Felson 1998). Crime is predicted to occur when three elements converge: a motivated offender, a suitable target, and lack of capable guardianship. This theory sets aside investigations of individual motivations, arguing that changes in aggregate rates of crime through time and place may more often result from changes in targets and guardianship (L. E. Cohen and M. Felson 1979b). Rather than compare different individuals on their criminogenic motivations, routine activities theory originally sought to compare different circumstances on their criminogenic opportunities. So, for example, the 1960s saw changes in workforce participation that left more homes unoccupied during the day (a decrease in guardianship) and the reduction in size and increase in value of electronic devices (an increase in target suitability), both trends supporting toward an increase in home burglaries (L. E. Cohen and M. Felson 1979b).

Moving beyond the “direct-contact predatory violations” and downplaying of the individual in the original theory, Osgood and colleagues have developed routine activities theory at an individual level with the concept of “unstructured socializing” (Osgood and A. L. Anderson 2004; Osgood et al. 1996). Routine activities are here used to describe how individuals typically
spend their time day-to-day, where they go, and with whom. Research on unstructured socializing has shown that time adolescents spent together “not doing anything in particular” was predictive of delinquency on both the individual and group levels. Those who made a habit of spending time in groups, away from authority figures, and without specific goals were likely to offend.

Looking to life-course transitions, social relationships are alongside employment and vocation as the major influences on how individuals spend their time. The “involvement” element of social bonding theory came to be a placeholder for the work being done with routine activities (Hirschi 2004). Informal social control theory also explicitly includes changes in routine activities as an explanation of how marriage may influence crime. Married men, and men working full-time, are expected to have worse opportunities for crime as a result of spending hours with spouses and employers. Moreover, residential changes associated with a new job or spouse can lead individuals into less criminogenic routines (Laub and Sampson 2003).

Because routine activities theory focuses on the distribution of criminogenic situations, victimization and offending overlap strongly. Offenders and victims must meet for many kinds of crimes to take place, and so the same kinds of routine activities that predict offending should predict victimization. Although no routine activities analysis has focused specifically on how parenthood influences offending, Yule and Griffiths argued that routine activities could explain for the differences they found in risks of victimization by family statuses (2009). The respondents most likely to report being victimized in their study were unmarried or cohabiting parents, whereas the least likely were married nonparents: being a parent increased the risk of victimization. Further analyses indicated that only school age children (ages 5–14) or young adult children (ages 19–24) increased the risk to their parents. Parents of children younger than five had lower rates of victimization, and Yule and Griffiths offered a routine activities explanation for these differences. During pregnancy and early parenthood, parents’ lives are centered in their homes and families. Time spent with newborns reduces time spent in public, time spent with strangers, and time spent out at night. The risk of criminal victimization is thereby is significantly reduced (and the same reasoning could predict a reduction in criminal offending). Once children
reach school age, however, parents spend even more time than non-parents in the public sphere, as their daily activities and social networks are expanded by the children and their activities.

**General Strain**

In his prototypical statement of general strain theory, Agnew (1992) contrasted its foundation with that of control and learning theories. He identified the core of social control theorizing as positive relationships with conventional others and the core of social learning theory as positive relationships with deviant others. General strain theory, in contrast, highlights negative relationships: those that cause strain via the introduction of negative stimuli, the removal of positive stimuli, or the blockage of desired goals. Excessive strain or stress generated in such relationships can be handled in a variety of ways. Criminal behavior arises as one form of behavioral coping, where action is taken as a response to strain (Agnew 1992:66–70). Strain theory elaborates a three-stage process: (1) an objectively negative relationship is (2) perceived subjectively as strain, and (3) reactions to this perception can be criminal. A range of conditions may influence reactions to strain, making criminal behavior (or “criminal coping”) more or less likely (Agnew 2001).

The most detailed theoretical application of strain theory to the life course focuses on the peak of criminal behavior in late adolescence (Agnew 1997). Social changes that accompany adolescence introduce children to a greater array of social relationships. Peer groups become stronger, social interactions become more complex, and children step further into the public sphere. Even as they accumulate more relationships, however, adolescents often lack the social power to avoid or escape adverse relationships. They also lack valuable experience in coping with strain, and so their responses are more likely to be criminal or delinquent than the strategies chosen by adults. Moving beyond adolescence, however, criminology has said little strains during transitions to adult roles.
Informal Social Control

At the forefront of research on marriage and crime has been the Glueck data, a longitudinal study of reform school boys and a matched control group begun in the 1940s (Sampson and Laub 1993; Laub and Sampson 2003; Sampson et al. 2006). From extensive work with these data, Sampson and Laub built their age-graded theory of informal social control. Hirschi’s social bonding theory and Laub and Sampson’s informal social control theory have core similarities, but points of contention between them have received little attention. They are often lumped together simply as “control theories.” A closer look reveals that the differences between these variants of control theory are actually quite pronounced.

Sampson and Laub are not as rhetorically vigorous in their attacks on other theories, and they do not mount defenses of what Hirschi has considered the core, incorruptible assumptions of control theory (such as the claim that society cannot promote criminal behavior or that humans are individualistic by nature). Nevertheless, their research highlights control processes in adulthood, and their longitudinal approach to both theory and methodology has led to major innovations in life-course criminology. In their theory of informal social control, Laub and Sampson describe several mechanisms by which changes in adult social roles may be expected to reduce crime (Laub and Sampson 2003:41–48, 148–149, 283; Sampson and Laub 2005:34).

Their itemized list of mechanisms varies in length, and some fall explicitly within the domain of routine activities. For the same reason that I earlier separated routine activities from social bonding theory, I set aside these aspects of Sampson and Laub’s theory in order to treat routine activities separately. In my reading, therefore, the age-graded theory of informal social control has three core mechanisms: reciprocal social capital, direct social control, and identity/maturation processes. These mechanisms operate by way of attachments to social bonds. Bonds are conceptualized here not as a single Hirschian connection to society, but as the various connections that individuals have to institutions. So marriage is a social bond, and it is a

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6 Laub and Sampson (2003) identify “routine activities” and “residential change” as separate mechanisms, but the effect of the residential change is described exclusively in terms of routine activities and situational opportunities for crime.
strong bond if the partners feel attachment to that marriage. Employment is a social bond, and job stability over time can indicate the strength of that bond (Sampson and Laub 1990). The stronger the bond, the more control mechanisms work to reduce crime.

The first mechanism, reciprocal social capital captures the interdependence fostered by social relationships, ranging from “an enduring attachment that emerges from entering into a marriage” (Laub and Sampson 2003:41) to “mutual ties binding workers and employers” (46). The reciprocity is fundamental to this concept; social capital is given and received along the associations formed by marriage or employment. This interdependency is also conceptualized as a growing process, as both parties to a social tie are involved in investment processes (Laub and Sampson 1993:310–311; Laub, Nagin, and Sampson 1998; Nagin and Paternoster 1994:586–588). Each partner is bound up in reciprocal investment with “interdependent systems of obligation and restraint” (2003:41), in return for which each receives returns in further social capital and support (283). Laub and Sampson therefore expect that good marriages and good jobs should produce strong negative effects on crime. Early parenthood, on the other hand, would not seem to engender reciprocity; if social capital is applicable to infants, it could only be described as given and not received. At best, parents are making a long-term investment that might lead to later reciprocity.

Second, Laub and Sampson place a special emphasis on direct social control. That is, when we sit at home with parents or spouses, their potential negative reaction may prevent us from engaging in illegal activity. When we negotiate our future plans of activity or behavior with partners, they may exercise direct control: monitoring and surveillance in real time. Direct control is expected to have more influence in marriage than in employment (though they cite an example of a desister with a particularly involved boss). Outside correctional or military institutions, the committed romantic relationship contains the most direct control over individuals since parents in childhood. Spouses can police each other, sometimes quite explicitly, although it should be noted for our present purposes that very young children are unable to exert any form of direct control (Giordano et al. 2002:1043).

This exploration of direct acts of monitoring and restraint returns criminology to control concepts that were more commonly held prior to the
predomination of Hirschi’s version of social control. As Gibbs has argued, Hirschi’s theory may not even truly be a theory of control. All of its mechanisms are internal and personal. Within social bonding theory, there is no act of control, of one social actor manipulating or exerting power over another. (Gibbs 1989:73; Osgood et al. 1996:640). Prior to Hirschi, variants of social control theory described a range of internal, indirect, and direct controls as key mechanisms of conformity (e.g., Nye 1958), and Sampson and Laub are more inclusive of external controls. Contra Hirschi, they do not immediately move to describe the effect on crime of a partner’s monitoring as inputs to an internal decision-making process.

The third mechanism of informal social control theory deals with change in identity and self-concept. Getting married, having children, and gaining other conventional roles (like holding a good job) can foster changes in self-image as a “family man,” a “breadwinner,” someone responsible and mature. Compared to youthful identities, these more adult-oriented self-images are less compatible with criminal involvement or troublemaking. To the extent that our behavior is shaped by identity and self-concept, changes in self-concept may present an opportunity for change in behavior. Criminological theories have often focused on the consequences of negative or criminal self-concepts (e.g., Becker 1963; Lemert 1951), but this mechanism is focused on the importance of positive and non-criminal roles.

As a final note, Laub and Sampson (2003) have included the feature of “knifing off the past from the present” as a mechanism of their informal social control theory. From my understanding, however, they are describing a variable in the character of life-course transitions. In their terminology, a turning point that involves knifing off past from present might simply be one that lends itself to a greater change in trajectory.7 Entrance into the military is a clear example: it includes a complete change in the environment and circumstances of one’s life. The relevance to crime could be due to a change in social control regime (direct-control monitoring of life in the barracks, for example), but the same reasoning could apply to changes associated with other theories: sources of strain, social rewards and punishments, routine

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7 Alternatively, we might deploy Sampson and Laub’s preferred terminology to suggest that a transition that includes a “knifing off” is more likely to become a turning point.
activities, and even the potential for narrative change. In other words, the idea of knifing off seems to be about the degree of change in circumstances, not a specific control mechanism. It is an important idea, but it can be built upon by a range of theoretical perspectives. For this reason, I will address the idea of knifing off later as a sensitizing concept in life-course criminology.

As this review of informal social control theory reveals, Sampson and Laub’s theory does not share the major control mechanisms of the Hirschi bond. Excluding the role of involvement and routine activities (discussed above as a separate theory), there is actually no overlap between Hirschi’s mechanisms and those of Laub and Sampson. Hirschi always focused on internal decision-making: stakes in conformity, psychological presence, and the strength of moral beliefs. Sampson and Laub put “linked lives” in the foreground: the interactive, reciprocal relationships between people in exchanges of social capital and direct monitoring. Although these are routinely treated together as “control theories,” the actual content of social bonding theory and informal social control theory are considerably different.

In sum, age-graded informal social control theory offers a number of mechanisms through which life-course transitions, particularly those that involve committed relationships or authority figures, may lead to desistance from crime. Marriage, full-time work, military service, and parenthood can act as turning points with regard to crime in the life course. The mechanisms by which these changes can occur are changes in routine activities, monitoring and supervision, interdependent gains in social capital, and identity and self-image.

Cognitive Transformation

Giordano, Cernkovich, and their colleagues (Giordano et al. 2002, 2007) have developed a theory of criminal involvement and desistance that features identity and self-transformation. Although they acknowledge that control mechanisms can also have a part, they explore and emphasize cognitive and emotional processes that accompany significant life-course transitions. Four kinds of cognitive changes make up an ideal-typical sequence: an actor (1) becomes open to the possibility of change, (2) becomes exposed to some “hook for change,” (3) considers a new identity that could replace her old
self, and (4) shifts her perception of criminal behavior and its accompanying lifestyle (2002: 999–1000).

The language of a “hook for change” intentionally evokes the use of narrative hooks, and this theory places weight on the accounts and self-narratives that individuals construct of their own lives. Life-course transitions can be powerful in part because we are able to weave these changes into the autobiographies that we construct for ourselves and others (Shover 1985). These narratives have their own weight; what we tell ourselves can motivate future stability or change in our lifestyles. Stories of desistance often begin with the hooks of changes in involvement with social institutions (prison, substance treatment, or religious conversion) or changes in family (marriage and parenthood).

The women interviewed by Giordano et al. (2002) demonstrate the diversity of interpretations that actors may attach to life-course transitions. A child may represent the new center of a parent’s life: “I mean everything’s different when you got a kid involved” (1024). Alternatively, parenthood may be an inconvenience: “I couldn’t wait to get this baby out of my stomach so I could run the streets” (1032). Recall that a majority of the serious female offenders in that study had either lost custody or never been given custody of a child. Any significant life event, including a transition to parenthood, is seen here not as cause but as catalyst. This evidence is contrasted with the expectations of social bonding theory: “exposure to a new condition (in this case the presence of children), or even a high level of attachment to one’s children, does not on its own constitute a powerful impetus for desistance without some accompanying cognitive changes” (1043). Hooks vary in their potential, and the full process of desistance is presented as a mixture of control and cognitive processes. Unlike marriage or employment, children do not represent an increase in social or financial resources, and young children are ineffective wielders of direct control.

Later work by Giordano, Schroeder, and Cernkovich (2007) emphasized the role of emotions and the emotional self, in part as moderators of life-course transitions. This development of a neo-Meadian perspective was intended, in part, to counter the “overly aseptic theory of cognitive transformation” (Giordano et al. 2007:1649). Focusing on the role of positive emotions, and the emotions that are connected to criminal involvement, the
emotional self is portrayed as a stabilizing influence that can at times militate against permanent change. Positive emotional connections to crime (or any pattern of behavior) will tend to produce continuity in crime, and will encourage “relapse” from changes that do take place. As with general strain theory work on the life course, there is an emphasis on coping. Criminal involvement is reduced if coping strategies can be developed: increasing negative emotions attached to crime; decrease positive emotions attached to crime; and learn to emotions in non-criminal ways.

These six theories represent some of the most frequently discussed and researched etiologies of criminal behavior. When we look to explain a specific life-course event like parenthood, however, we are generally not testing the entirety of some theory. Rather, we are bringing together elements of a given theory that are relevant to the transition at hand. Armed with this set of theories, I will extract specific mechanisms of interest for the present study below. First, however, I review some of the concepts used in sociology and criminology to describe stability and change in the life course.

Sensitizing Concepts of Life-Course Criminology

The terminology used in the study of the life course can help link between these major etiological theories of crime and specific hypotheses about parenthood and crime. Existing analyses of stability and change have given voice to linked lives, turning points, hooks for change, knifing off, and a host of other ideas. Considering the relative youth of the field of life-course criminology, it may be valuable to first recall Blumer’s distinction between definitive concepts and sensitizing concepts:

A sensitizing concept lacks such specification of attributes or benchmarks and consequently it does not enable the user to move directly to the instance and its relevant content. Instead, it gives the user a general sense of reference and guidance in approaching empirical instances. Whereas definitive concepts provide prescriptions of what to see, sensitizing concepts merely suggest directions along which to look. (Blumer 1954:7)
I treat these life-course ideas as sensitizing concepts. When it comes to parenthood and crime, we are still in an exploratory, descriptive mode of research. The basic facts about how crime changes during parenthood are still in question, and so it behooves us to operate tentatively. A valuable core vocabulary comes from Elder’s work on a framework of life-course sociology involving four major themes: linked lives, historical times, timing of lives, and agency (Elder 1994, 1998; Hitlin and Elder 2007).

**Linked Lives**

The idea of linked lives is at the heart of questions about family roles and crime. How do our connections to others, and to our communities, change our tendency to obey or violate laws of that society? What is the nature of these “links”? In social bonding theory, each link represents a strengthening of our general bond with conventional society. Indeed, they expect that even connections to deviant others will increase our conventionality. The theory of cognitive transformation, on the other hand, considers these same connections as containing a range of possibilities: a source of social support; an ‘other’ to encourage self-appraisal; a part of a narrative hook for change; a lost opportunity (Giordano et al. 2002). The age-graded theory of informal social control includes different features of the links we have through significant relationships: direct social control, interdependent social capital, and identity work (Sampson and Laub 1993, 2005). Warr (1998) followed up on Sampson and Laub’s relationship focus by paying attention to how spousal relationships may influence relationships with deviant friends or acquaintances: an interaction between interconnections.

**Historical Times and Timing of Lives**

Although historical times and the timing of lives are conceptualized as two of the major themes of the life course approach, they intertwine considerably in the study of social role transitions. The historical context of lives and actions is particularly important for research on family roles, considering the changes in romantic and family relationships in recent decades. Nonmarital cohabitation has become much more common – to the point that it no longer predicts marital instability among recent cohorts (Manning and J. A. Cohen 2011). The social and personal significance of marriage itself has been changing (Cherlin 2004). Parenthood outside marriage has gone from rare to
quite common since the mid-20th century (Ventura and Bachrach 2000). Amid these dramatic changes, the historical context of data can present a challenge for criminologists.

Some of the best research on marriage and crime comes from Laub and Sampson’s work with the Glueck data, but that data comes from white Boston men born in the 1920s and 1930s (S. Glueck and E. T. Glueck 1950). The historical context of data can be used to our advantage. Sampson and Laub were able to use the Glueck men’s lives to examine the influence of World War II military service (Sampson and Laub 1990). At the same time, if we want to draw more general conclusions, we must bear in mind that the transitions to parenthood and marriage for these men (and, too, their military service) were profoundly different from those today. At the time that the Glueck men married, fewer than ten percent of childbirths were to unmarried women (Ventura and Bachrach 2000) and the divorce rate was far lower than in recent decades (Martin and Bumpass 1989). Today’s decoupling of marriage and parenthood might hold significance for the effects of these social roles on crime.

Some of these changes of recent decades can be seen as changes in the timing of lives. Social norms and expectations associated with many life events – such as marriage or parenthood – are age-graded, and the timing and ordering of these events can hold great significance. Recent decades have been marked by a great increase in the variability of life-course pathways (Shanahan 2000). Rather than a structured transition from school to work and marriage to parenthood, young adults now encounter a disorderly period of “emerging adulthood” (Arnett 2000; Rindfuss, Swicegood, and Rosenfeld 1987). The importance accorded to these transitions is a matter of prevailing norms: transitions may be seen as “ahead” or “behind” because of the current social standard. The “early” and “late” marriages of Glueck men are a matter of the timing of lives in a particular historical context (Laub et al. 1998).

Community context also matters a great deal for the timing of lives, as the “social meanings of age” vary by community. Even teenage childbearing, which Elder took as an example of an “ill-timed and particularly costly” life-course event (1994:6) can be demographically normal within some populations (Edin and Kefalas 2005). Using relatively recent data, Kreager and
colleagues (2010) found that teenage mothers exhibited even greater reductions in criminal behavior than young adult mothers within disadvantaged areas of Denver. This dissertation uses a recent set of data, but these data carry along their own set of historical and cultural limitations: young Americans in the 2000s who were still middle and high school students when the Add Health study began. One skeptical view of criminological theorizing could suggest that context is to blame for many of the field’s disagreements. If researchers use data from disparate historical and social contexts to develop their theories, it might explain the seeming frequency with which incompatible conclusions are drawn.

Agency

The role of agency in patterns of behavior has become a focal area of interest in the criminal desistance literature (Bottoms 2006; Farrall and Bowling 1999; Vaughan 2007) and in the sociology of the life course more broadly (Hitlin and Elder 2007). To what extent are we consciously constructing our careers, projects, commitments, and trajectories? Elder featured agency in the life-course approach, urging sociologists to acknowledge at a minimum that “people are planful and make choices among options that construct their life course” (1994:6). Both control theory and differential association theory have received criticism for overly deterministic mechanisms, with complaints lodged in life-course work (Giordano et al. 2002:1037) as well as earlier criminological theory (e.g., Matza 1990). If these two major perspectives argue merely over whether it is parents and teachers pulling children toward conformity, or friends and gangs pushing them toward deviance, then both have failed to recognize the depth and wealth of choices, interpretations, and decisions in play. Building from Mead’s symbolic interactionism, the theory of cognitive transformation (Giordano et al. 2002) has arguably given the most serious consideration and weight to human agency in the desistance literature. Life events are here cast as catalysts to the self-directed choices of individuals. Indeed, agency was emphasized to the degree that the authors later admitted that the first formulation of the theory likely “overtheorizes actor-based changes in perspective and the primacy of associated agentic moves” (Giordano et al. 2007:1614).
Although informal social control theory has not plunged into agency as deeply as the theory of cognitive transformation, Laub, Sampson, and Sweeten have cautioned researchers that ignoring agency runs risks of “reifying statistically-identified groups and losing sight of the humanity of individuals behind the statistics and their capacity for change” (2008:328). Indeed, these concerns may be the source of the new terminology arising from work on the life course. The concepts of turning points, knifing off, hooks for change, and episodic derailments have all figured into recent work on desistance, and these ideas (described below) in part demonstrate that researchers are striving for an adequate balance between social structure and human agency.

**Trajectories, Transitions, and Turning Points**

In their original program of research using the Glueck data, Sampson and Laub consciously adopted the definitions of concepts found in the pioneering work of Elder (1985, 1975) in life-course sociology (see especially Laub and Sampson 1993; Laub et al. 1998; Sampson and Laub 1993). The life course is here defined as containing *trajectories*, the lines of action or pathways through life over the long term. These long-term developments are connected by the short-term influences of *transitions*, typically identified as life events. An individual’s trajectory in professional life, for example, may include a particular career trajectory as well as short-term changes in employment (e.g., a new job, a significant promotion, or the loss of a job). The potential for transitions to accompany substantial changes in life-course trajectories is encapsulated in the idea of a *turning point*. Losing a job or moving to a new town (a transition) might cause a reassessment and change in one’s vocational trajectory if one chooses to pursue a new career. Applied to crime, Sampson and Laub were most interested in how the influence of significant life events in key domains (such as marriage, family life, and employment) could be turning points for changes in antisocial behavior. The turning point concept has gained wide acceptance within the growing literature on criminal desistance processes (Carlsson 2012; Edin, Nelson, and Paranal 2001).

The image of trajectories linked by turning points is tidy, and researchers in recent years have highlighted the need for a more nuanced understanding of change in the life course. To identify something as a point is to describe a place between things – here a point between trajectories – but not a thing in
itself. Given the complexities of patterns of behavior over the life course, we should be careful not to oversimplify patterns of behavior. Somewhat modifying their conception of turning points and trajectories, Sampson and Laub describe life-course mechanisms as “not a constant once set in motion and thus vary through time” (2005:34). As an example, they observe that a spouse’s monitoring of alcohol use is not a constant, even within the marital relationship. To extend such considerations to life events associated with parenthood: becoming a parent is not significant merely for the birth of a child. The relationship of parent to child is itself an ongoing, dynamic relationship (even prior to birth) that may dramatically vary in its effects over time. It is this development of turning points that Sampson and Laub have recently emphasized, in keeping with the thoughtful work of Abbott (1997):

Turning points are thus best theorized as points at which the interlocked networks of relation that preserve stability come unglued and the (normal) perpetual change of social life takes over. [...] A major turning point has potential to open a system the way a key has the potential to open a lock. (102)

The expression of “opening of a system” implies rather more than a change in trajectory, and it points as well to the context under which agentic decisions are made. Even a relatively simple transition cannot be reduced to the connection between straightforward linear trajectories. A job, or a romantic relationship, or a new child, can open a whole new realm of social space. It is the desire to capture a better sense of opportunity and agency that spurred Giordano and colleagues to reject the language of the turning point.

Desistance

The idea of desistance from crime arises frequently in life-course criminology, as it is often the outcome predicted by models or the event discussed in interviews. Although “desistance” has been defined in various ways, the intent is to mark a point at which an individual ceases involvement with crime (Laub and Sampson 2001) or a process through which disengagement from crime is maintained (Bushway, Thornberry, and Krohn 2003). There are complications associated with this classification, however (Kazemian 2007; Kazemian and Maruna 2009). Because many offenders have transitions in
and out of periods of criminal involvement, “false desistance” may be difficult to identify. How long does one remain crime-free before it counts as “genuine desistance”? Should death be regarded as the absolute desistance from crime, or as a form of involuntary desistance like prison? To avoid some of these thorny issues, some studies choose not to operationalize desistance, focusing instead on variation in crime outcomes. Others have chosen to examine desistance in several ways, such as comparing self-report of desistance, self-perception of desistance, and official records (Massoglia and Uggen 2007).

Hooks for Change

The conceptualization of life-course transitions as hooks for change is critical to the agent-centered theory of cognitive transformation (Giordano et al. 2002, 2007). This idea balances the active and passive elements of an individual’s interaction with the social environment. A criminal who gets married, or has a child, or gains a full-time job may choose to make use of that transition as a hook for change – or not. This language intentionally invokes the connotation of a narrative hook, giving a gentle emphasis to the elements of symbolic interactionism and dramaturgy at work:

We might refer to potentially prosocial features of the environment as catalysts, change agents, causes, or even turning points (Laub and Sampson 2001; Maruna 2001), but we prefer to call them "hooks for change" for two reasons. First, consistent with Mead’s notion of opening the door to certain stimuli and closing it to others, we wish to emphasize the actor’s own role in latching onto opportunities presented by the broader environment. Second, we recognize that actors’ accounts within a narrative or life history will not access the full array of influences that literally produced successful changes. (Giordano et al. 2002:1000)

The responsiveness of an agent concern that agent’s narratives should be brought to the fore is explored through a great deal of in our understanding of how actors may take conscious advantage of a life event is echoed in the idea of marriage as a “transformative act” (Theobald and Farrington 2011).
Knifing Off

The concept of knifing off past from present has figured into discussions of the life course from a variety of theoretical perspectives (extensive review in Maruna and Roy 2007). Part of the stability in an individual’s behavior and beliefs over time is a result of the stability of social context. Removed from that context, change or discontinuity in behavior and beliefs may be more likely (Caspi and Moffitt 1993). In the midst of a change in context, an individual may be freed to change. Sampson and Laub have often claimed “knifing off” as a mechanism of their informal social control theory (1993, 2005), but as a concept is applies to a range of theories. I have therefore included it here as a life-course concept. The flexibility of the concept apart from a theoretical mechanism was shown in their earlier work, when they used a knifing off metaphor to describe the opposite circumstance. Consequences of delinquency that had the potential to reduce conventional opportunities available in the delinquent’s future were described as “knifing off” the future options (Sampson and Laub 1993:142).

Episodic Derailments

Giordano and colleagues (2007) took strides toward a “sociology of derailments” in their symbolic interactionist work on emotional processes and crime. They note that some Glueck men exhibited “zigzag patterns” of offending, oscillating throughout adulthood between periods of criminal involvement and periods of desistance (Laub and Sampson 2003). Episodic derailments are conceptualized as a way of acknowledging the stabilities in self between past and present, even as situations may allow for short-term change. Some circumstances allow a certain knifing off of past from present, as when an individual enters military service. Even so, there is continuity in behavior and belief that Giordano and colleagues theorize as a particularly emotional aspect of the self. A life-course event may therefore be an episodic derailment, where an overarching pattern of behavior may be temporarily disturbed by circumstance. If the individual does not effect a strong change in identity, the stabilizing continuity of the emotional self can help to ensure that the behavioral change is short-term.
Selection

As we recognize the role of agency and self-direction in these concepts, the threat of selection bias looms ever greater. Few Americans today enter passively into marriage: rather, two people choose to marry each other. But is desistance from crime dependent on the actual state of being married? Or is it rather that individuals who are ready to be married—and those who others see as suitable marriage partners—are likely to reduce their crime anyway? Similar reasoning applies to other life-course transitions. Are effects of parenthood due to the actual conditions of parenthood, or due instead to the kinds of people who become parents and the kinds of changes that they may undergo in preparation for that role?

One major criminological theory, often called self-control theory, argues that most apparent effects on crime are actually a result of relatively time-stable differences in individuals’ propensities toward crime (Gottfredson and Hirschi 1990). Among a great number of activities “equivalent” to crime and resulting from low self-control, Gottfredson and Hirschi include sexual activity, especially “risky sexual behaviors” (1990:178, 1994:53). Existing tastes for risk and self-control could therefore predict both criminal behavior and transitions into parenthood. Genetic factors have also been suggested as a potential confound, a common cause for both romantic relationships and reduced crime (Barnes and Beaver 2012).

Many studies using longitudinal data address one facet of selection by separating within-person from between-person variance. By looking at the associations between social roles and crime as deviations from individuals’ mean levels, static factors are effectively removed from consideration. Static differences between people are thereby ruled out as confounds, including stable differences in intelligence, self-control, or genetic background (Barnes and Beaver 2012; Gottfredson and Hirschi 1990; J. Q. Wilson and Herrnstein 1985). These methodological approaches are not a panacea; they can only separate out static sources of selection. Time-varying mechanisms could still produce both a social role effect and a crime outcome. For example, if excessive alcohol use produces both damage to a marital relationship and increased violence, the proposed causal effect of marriage on parenthood could be explained as spurious (Bjerk 2009).
One source of time-varying selection that might be due for greater atten-
tion in criminology is the idea of anticipatory socialization (Merton 1968). Because humans do have agency and foresight, we do not respond simply to
the situation that we are currently in. Most parents have several months to
plan for their new social role that will follow childbirth, of course, but antici-
patory socialization extends to the social aspirations that we have. “Through
a kind of anticipatory socialization,” Merton suggested, military men could
“take on the values of the non-membership group to which they aspire, find
readier acceptance by that group and make an easier adjustment to it
(1968:319). By the same reasoning, those who aspire to marriage may take on
the values of the married; those who aspire to be parents may already act
more like parents than those who do not. Because of the varying agency that
individuals take in their paths through the life course, the balance of influ-
ence of past and future on present behavior may vary.
CHAPTER 4: RESEARCH QUESTIONS AND HYPOTHESES

There are two overarching research questions for this study. The first is framed by an investigation of theoretical mechanisms, and the second addresses an empirical hypothesis from the extant literature. First, how does crime activity change during the transition to parenthood, and what does this tell us about theoretical explanations of crime? Second, is that association different for mothers and fathers in disadvantaged urban neighborhoods?

The Effect of Parenthood on Crime

The first set of analyses in this dissertation addresses the question of what effect the transition to parenthood and early years of parenting have on the parent's criminal activity. The major criminological theories offer several different hypotheses about the pattern of crime that we should expect to see associated with parenthood. Although this study does not include direct measures of the theoretical mechanisms, hypotheses can be tested based on their correspondence to the results of parenthood effects. Previous research has often relied on a binary measure (is the respondent a parent or not), and we therefore have limited information on how parental crime changes through pregnancy, at childbirth, and during the early years of the child’s life. With the data available for this study, I am able to consider how parental crime develops from before birth until around age ten.

The development of the parenthood effect over time is important to our understanding: is there an immediate but temporary change? Is there a long-lasting change that is slow to develop? Do parents seem to be little different from non-parents? These theories predict a range of possibilities. By analyzing the patterns of crime through the transition to parenthood, we can test for the plausibility of theoretical mechanisms.

These hypotheses cannot be definitively proven by the present analyses. As is often the case in social scientific work, we are only able to examine the extent to which these hypotheses are consistent the available evidence. If the analyses reveal patterns of crime through early parenthood that contradict any hypothesis, we can reject that hypothesis as a primary explanation of the parenthood-crime relationship. That does not necessarily mean that the mechanism is nonexistent; it may simply not be useful in our understanding
of parenthood. If, however, that hypothesized mechanism is the linchpin of a
general theory of crime, then contradictory evidence will cast doubt on the
empirical validity of that theory.

Internal Controls

_Hypothesis: A significant reduction in crime during the transition to parenthood.
As the child ages, parental crime should decrease even further._ Internal controls are
central to the workings of social bonding theory, as both attachment and
commitment are conceptualized in terms of their influence on self-interested
decision-making (Hirschi 1969, 2004). Similar ideas are described in other
control terms as the individual’s “stakes in conformity” (Briar and Piliavin
1965) or the “bite of conscience” (J. Q. Wilson and Herrnstein 1985). Parents
should, on average, care a great deal about their new child, and so it repre-
sents a powerful new or strengthened bond with society. Parenthood, like
marriage, could be conceptualized rather like a long-term investment (Laub
et al. 1998). As the years go by, just as in marriage, the child becomes an even
greater source of long-term commitment to conventionality.

Direct Control

_Hypothesis: No significant change in crime during the transition to parenthood.
As the child ages, there is no significant effect on parental crime._ Direct controls –
the monitoring and supervision of others – are important components of the
age-graded theory of informal social control (Laub and Sampson 2003;
Sampson and Laub 2005). In the first years of parenthood, however, children
are incapable of exercising direct control over parents. An infant cannot
monitor or supervise a parent to discourage criminal behavior. Here, we can
expect a very different effect for parenthood compared to marriage. While
spouses may begin to provide direct control even long before the wedding
date, children will take several years to develop their direct control abilities.
Accordingly, there should be no change in crime during the transition to
parenthood, and over the ten years of age covered in this study there should
be no change in that null effect.

Identity Work

_Hypothesis: A significant decrease in crime during the transition to parenthood.
As the child ages, a number of possibilities emerge for parental crime._ Identity
changes are included as key mechanisms in two of the most prominent life-course theories in criminology, informal social control theory and cognitive transformation. Laub and Sampson (2003) have been somewhat vague about what important features they see in identity and self-concept. Giordano and colleagues address identity in more detail, discussing a process of cognitive shifts that may or may not produce a change in life direction, even when a hook for change is grasped. Part of the process of cognitive transformation involves formation of an identity that is inconsistent with further crime. From either theory, it is clear that identity change is something expected to begin relatively soon. Identity change associated with these roles is expected to decrease crime, not increase it. The permanence of that change is somewhat open for debate. Although Sampson and Laub acknowledge the instability of some Glueck men and their “zigzag” patterns of conformity and criminal involvement, they do not discuss change in identity as especially malleable or temporary. In the later work on emotional selves, however, Giordano and colleagues do emphasize episodic derailments, pointing toward the possibility for temporary changes in behavior (2007). Because of the diversity of discussions on identity, I leave the change over time open in this particular hypothesis.

**Strains and Stressors**

_Hypothesis: A significant increase in crime during the transition to parenthood. As the child ages, parental crime is likely to decrease to the norm._ The presence of strains and the individuals’ strategies in handling them are the core mechanisms of general strain theory (Agnew 1992, 2001). Although the effects may vary, research on parenting suggests that becoming a parent is accompanied by an average increase in stress and decrease in well-being (Nomaguchi and...

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8 It could be argued that the four-stage process described by Giordano, Cernkovich, and Rudolph (2002) must take time. While cognitive transformation must not be an overnight affair, the development of a new identity around parenthood can begin as soon as one is aware of a pregnancy, or even as planning begins. Recalling anticipatory socialization again, some parents are likely to hit the ground running at childbirth. If reactions are delayed, that delay will likely take place while the child is still in utero. They also appear to rhetorically position control processes as the “gradual” aspect of relationships, the mechanism that takes time to “build up.” Although cognitive transformation is likely not a fast process, it also does not appear to require years of investment.
Brown 2011; Nomaguchi and Milkie 2003). This strain could manifest rather quickly, considering the how the transition to parenthood can be as well as the lack of preparation that many have for the role (Rossi 1968). Low-income parents, fathers especially, may feel a double demand to provide both economic and personal support. Parenthood strains may therefore be compounded by accompanying increases in relationship conflict (Roy 2004b). From a general strain theory perspective, relationship conflict is a double problem. It is a strain in itself, but it also entails a reduction in social support for handling other stressors. As time goes on, however, these early stressors should ease. Adults tend to learn more cognitive and emotional coping strategies as they age, and the same process might be expected for gaining experience with handling a social role (Agnew 1997). Through a combination of fewer strains and an increase in non-criminal coping strategies, the initial rise in criminal activity should abate as the child ages.

Routine Activities

Hypothesis: A significant decrease in crime during the transition to parenthood. As the child ages, parental crime is likely to increase to the norm. Routine activities theory identifies on the convergence in time and space of motivated offenders and suitable targets in the absence of capable guardianship. Both informal social control theory and social bonding theory explicitly include routine activities as a mechanism. Marriage may reduce crime in part because spouses simply spend less time in public (and especially less time in criminogenic areas such as bars). Because the processes of routine activities are focused on situations and opportunities – not motivations – social role transitions are likely to simultaneously affect offending and victimization. Criminological research suggests that the early years of parenthood reduce victimization (Yule and Griffiths 2009), and so a routine activities explanation would predict the same for offending. Because new parents become much more home-centered in their day-to-day lives, spending less time in public, parents have fewer opportunities for crime. As children grow older and reach school age, parents’ activity patterns shift to become less home-focused. As parents of schoolchildren spend more of their time out in public, they thereby encounter more frequent opportunities for crime.
Peer Relationships

Hypothesis: A significant decrease in crime during the transition to parenthood. As the child ages, parental crime is likely to remain low. As individuals transition to adulthood, the influence of peers appears to diminish as romantic relationships become more central (Giordano, Cernkovich, and Holland 2003). Fathers living with biological children are likely to spend less time socializing with their peers, although the same may not hold true for nonresident fathers (Eggebeen and Knoester 2001). Marriage and crime has spurred more discussion about declines in time spent with (possibly deviant) peers, but the social learning theory reasoning about marriage would seem to apply equally to parenthood: “marriage marks a transition from heavy peer involvement to a preoccupation with one’s spouse and family of procreation” (Warr 1998:209). To the extent that social learning theory continues to be the province of Akers, his recent assessment of life-course criminology supports the same idea. As I emphasized above, social learning theory is not merely a matter of peer influence. Nevertheless, since infants themselves do not exert a conscious influence on our beliefs and associations, peers appear to be the most significant social learning variable at play during the transition to parenthood. The peer relationship hypothesis would suggest that becoming a parent should lead to a relatively sharp decline in crime, as time and attention shift from peers to family. Unless the parent withdraws from that role (in a loss of custody, for example), we would expect that reduction in crime to be permanent. As the preoccupation with family life leads parents to grow even further apart from peers, we would expect additional declines in crime.

These competing hypotheses, summarized in Table 1, bring into focus the differing empirical claims of these theories. Further hypotheses could be conceived to cover a longer time frame, but data used in the present study include few parents of children older than ten.

Parenthood and Crime in Disadvantaged Neighborhoods

The second set of analyses in this dissertation revisit the empirical hypothesis of Kreager, Matsueda, and Erosheva (2010), who suggested that the differences between qualitative and quantitative literatures on parenthood and crime were a matter of non-overlapping samples. Although they inter-
Table 1. Hypotheses about Crime in Early Parenthood

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Key Theories</th>
<th>Immediate Change</th>
<th>Slope over Time</th>
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<tbody>
<tr>
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<td>Social Bonding</td>
<td>Decrease Crime</td>
<td>Increasingly Less Crime</td>
</tr>
<tr>
<td>Peer Relationships</td>
<td>Differential Association/</td>
<td>Decrease Crime</td>
<td>Increasingly Less, or</td>
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<td></td>
<td>Social Learning</td>
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<td>Identity Change</td>
<td>Informal Social Control;</td>
<td>Decrease Crime</td>
<td>[Various Possibilities]</td>
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<td></td>
<td>Cognitive Transformation</td>
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<td>Routine Activities</td>
<td>Routine Activities(^a)</td>
<td>Decrease Crime</td>
<td>Increasingly More Crime</td>
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<tr>
<td>Direct Control</td>
<td>Informal Social Control</td>
<td>No Effect</td>
<td>No Change</td>
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<td>Strains and Stressors</td>
<td>General Strain Theory</td>
<td>Increase Crime</td>
<td>[Various Possibilities]</td>
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\(^a\) Social bonding and informal social control also include routine activities mechanisms as part of their explanations.

interpreted their approach as a better quantitative estimation of the disadvantaged neighborhoods studied in urban ethnographies, interactions with motherhood effects in the more severely disadvantaged Denver neighborhoods were nonsignificant. And so while the Denver Youth Study does come from high-risk areas of Denver, the full sample is still significantly better off overall than the neighborhoods of urban Philadelphia or New Haven (E. Anderson 2000; Edin and Kefalas 2005). Without the ability to compare their findings in the “correct” urban subpopulation to a general sample, it is not clear from their results whether Kreager and colleagues successfully captured a true difference between subgroups. Perhaps their article is simply one of multiple recent, high-quality quantitative pieces that have found signifi-
cant motherhood effects (Giordano et al. 2011; Thompson and Petrovic 2009; Staff et al. 2010).

With the national sampling frame of Add Health, the main results presented in this study already estimate the effects of motherhood and fatherhood in a general population. Add Health includes a range of neighborhood measures at tract, block, and county levels matched to the residence of the participants at Wave I. Using these measures, I compare urban neighborhoods with high disadvantage or high crime to other neighborhoods. This provides a direct test of the question posed by Kreager and colleagues: Is there a general parenthood effect, or is there instead only a motherhood effect within poor urban neighborhoods?
CHAPTER 5: DATA AND METHODOLOGY

To test the above hypotheses, I analyze data from the National Longitudinal Survey of Adolescent Health (Add Health) Study (Harris 2009). I examine the self-reported criminal activity of over 15,000 participants gathered over twelve years, covering secondary school through early adulthood. Using multiple waves of data, I analyze responses from each participant over time, as their life circumstances and involvement in family and work roles change. Survey items used in the present study include self-reported measures of crime, family and other social roles, demographics, background and control variables, and tract-level neighborhood characteristics. For data transformations, variable coding, and some of the descriptive analyses I employed IBM SPSS Statistics 19. I conducted the final models and multilevel analyses in HLM 6.08 (Raudenbush, Bryk, and Congdon 2000).

The Add Health Data

The Add Health Study began with a nationally representative survey of American students in grades 7 through 12 in the 1994–1995 academic school year (Chantala 2006). Three follow-up waves of data collection were conducted in 1996 (Wave II), 2001–2002 (Wave III), and 2007–2008 (Wave IV). The initial two-stage stratified design drew students from a sample of public and private schools. Eighty high schools were selected in a systematic sample from an identified population of over 26,000 schools. Also included in the sample were fifty-two associated “feeder schools,” junior-high and middle schools associated with those high schools that do not include 7th or 8th grades.

In 1995, for Wave I, detailed surveys were administered to a sample of 20,745 of these students in their homes. Students within the selected schools were stratified by grade and sex, and a core sample of 12,105 was selected from these strata. Additional subsamples included a saturation sample of sixteen schools, a sample of disabled students, ethnic-group samples (black students from well-educated families as well as Chinese, Cuban, and Puerto Rican students), and a genetic sample focused on twins and siblings. Separate, shorter surveys were given to one parent or guardian of each respondent, preferably the mother or female head of household. The response rate of
the Wave I survey was 79.0%. A host of neighborhood measures are available, many of them coded from US Census characteristics at the tract, block, and county levels.

Follow-up surveys constituting Wave II were successfully administered to 13,570 students in 1996 (a response rate of 88.6%). Wave II excluded most 12th grade students, effectively reducing the core sampling frame to 7th through 11th grade. For the purposes of the present study, incorporating Wave II adds little value. Few students are transitioning into adult roles at that time (Staff et al. 2012), and some information on family roles is entirely missing (for example, male participants were not asked about parenthood until Wave III). For these reasons, data from Wave II are not used here.

For Wave III and Wave IV data, efforts were made to reach the entire Wave I sample, including the 12th-grade students left out of Wave II. The third wave collected data from 15,170 respondents in 2001–2002, at which time most were between the ages of 18 and 25. The response rate for Wave III was 77.4%, and analyses of non-response have indicated few biases across several measures (Chantala, Kalsbeek, and Andraca 2004). The latest wave of Add Health, Wave IV, includes follow-up data from 2007–2008 on an even greater proportion of the Wave I sample than Wave III. Wave IV includes 15,701 respondents, most aged 25 to 32, a response rate of 80.3%. Analyses measuring the bias of non-response for Wave IV found, as with Wave III, little to no indication of biases on a range of measures (Brownstein et al. 2011).

The present study draws on information from three of the four waves of data collection. Wave I is used for person-level background, control, and neighborhood variables. As mentioned above, Wave II has limited use for the present study. It excludes respondents who were seniors in high school at Wave I, and it adds information only one or two years later. The great majority of students at Wave II still have yet to make significant transitions into adulthood. To examine the time-varying social roles of early adulthood and their consequences for offending, I use measures from Waves III and IV.

Strengths of Add Health

Add Health data provides several benefits for the study of family roles and crime in early adulthood. The range of ages and timing of follow-ups are excellent for the purposes of the present study. The information analyzed
here was gathered starting in 1994–1995 and ending in 2007–2008. The respondents were between 12 and 19 years old at Wave I, at which time very few students had entered into any adult roles such as full-time work, marriage, or parenthood (Staff et al. 2012). Wave III was conducted at the 18–25 age range of emerging adulthood (Arnett 2000), as the respondents are beginning to transition to adult roles and most crime rates have peaked and begun their declines. By Wave IV, the respondents were ages 25 to 32; about a third are married, and nearly half are parents. The Add Health waves thereby present the major developmental periods of adolescence, emerging adulthood, and young adulthood. This span of time also captures the rise, the peak, and the beginning of the decline in the rates of most crimes by age (Steffensmeier et al. 1989).

The sample size and multiple waves lend substantial statistical power to these analyses, allowing for more precise estimates of social role effects and variation by subgroups. Models in this study include over 15,000 respondents reporting more than 30,000 person-waves of time-varying measures from Wave III and Wave IV. The use of longitudinal data allows the separation of time-stable, between-person differences from the time-varying, within-person differences. Cross-sectional studies risk mistaking differences of individuals for differences in those individuals’ situations, due to the issues of selection discussed above. Most results in the present study focus on changes that are taking place from one wave to another as the same individual changes her configuration of social roles.

Furthermore, Add Health is a national sample, including both male and female respondents as well as representative populations of racial and ethnic groups. Prior work analyzing parenthood and crime has often used populations limited by gender or geography. As we shall see, the effects of parenthood and marriage may vary greatly depending on neighborhood context, and Add Health did not limit their sample to urban environments. The data from Add Health cover one of the most recent cohorts of young adults available, with most respondents born between 1976 and 1982.

Information in the primary respondent surveys of Add Health was gathered via computer-assisted personal interview (CAPI), except for sections using computer-assisted self-interview (CASI) for more sensitive material. These sections included questions regarding several areas of interest for the
present study, sexual activity, relationships, parenting, drug use, delinquency, and violence. Research has established the superiority of CASI for gathering information on behaviors that might otherwise suffer significant underreporting. Even compared to the relatively private alternative of self-administered questionnaires, reporting is expected to be more accurate across a range of deviant or violent behaviors when CASI is employed (Turner et al. 1998; Thornberry and Krohn 2000).

Weaknesses of Add Health

Add Health provides a large and extensive longitudinal dataset, but every study has its weaknesses. One of the limitations of Add Health most relevant to criminology lies in its school-based design. Respondents were in the seventh through twelfth grade at the time of Wave I data collection, the 1994–1995 school year. This excludes from the sampling frame some of the most disadvantaged adolescents. Some adolescents in this cohort would have left school or entered correctional populations prior to the survey data.

Another limitation of Add Health data for present purposes is that the breadth of its items and scales is somewhat balanced by a lack of depth in some areas. There are relatively few replicated measures concerning relationships and parenthood available in Add Health. Even a measurement of parent status was not available for both genders until Wave III. Although some items to measure particular theoretical mechanisms could be conceptualized (e.g., self-reported associations with delinquent friends as social learning; varying questions about relationships as satisfaction or quality of bonds), Add Health has few measures repeated across waves that would sufficiently measure many of the key mechanisms found in criminological theories. Accordingly, this study does not attempt to operationalize mechanisms or processes, focusing instead on the overall patterns of criminal involvement through parenthood.

Finally, although Add Health has followed its participants for some thirteen years, there remain only four waves of data. Waves III and IV took place several years following the prior wave. One therefore cannot measure the influences of short-term change without making assumptions about causal ordering. Lagged variables would measure events taking place years apart. The only follow-up with a short delay was from Wave II, about a year after
Wave I, but that data collection excluded high school seniors from Wave I. Therefore, relatively few students at Wave II had experienced transitions into adult social roles.

Taking into account the strong and weak points of Add Health, I have chosen to focus on the patterns of parenthood and crime over time and across contexts. Although this study lacks direct operationalization of theoretical mediators, the analysis of patterns associated with hypothesized explanations are revealing. The large sample size and repeated measures of Add Health provide a great deal of information and statistical power for multi-level methods, removing much of the validity threat of time-stable confounds. The variety of contexts allows us to compare parenthood in high-risk urban neighborhoods to parenthood in the general population. This dissertation thereby draws upon the strengths of the Add Health Study, leaving avenues open for future research to employ more detailed analyses of theoretical mechanisms.

**Measures**

*Self-Reported Crime (Time-Varying)*

Add Health includes several measures of criminal activity, and these analyses draw from twelve self-reported items covering a variety of violent and non-violent behaviors. This set of items is original to Add Health, but the format of the questions is similar to the self-reported delinquency instrument constructed for the National Youth Study (Elliott and Ageton 1980). Respondents responded how often they had committed each act in the previous twelve months, ranging from *never* to *5 or more times*. These questions asked: “In the past twelve months, how often did you…”

- Sell marijuana or other drugs?
- Steal something worth less than $50?
- Steal something worth more than $50?
- Use or threaten to use a weapon to get something from someone?
- Go into a house or building to steal something?
- Buy, sell, or hold stolen property?
Deliberately write a bad check?
Use someone else’s credit card, bank card, or automatic teller card without their permission or knowledge?
Deliberately damage property that didn’t belong to you?
Take part in a physical fight where a group of your friends was against another group?
Use a weapon in a fight? [Wave III only]
Get into a serious physical fight? [Waves I and IV]

At Wave III only, respondents were asked about the use of weapons in a fight; this question replaced the “get into a serious physical fight” item, which was used in the other waves. The other criminal offending questions remained the same between waves.

The present study uses these self-reported crime measures from Waves III and IV as the primary outcome of interest in the analyses. A scale of the Wave I measures is used as a person-level control variable. Reliability as a unidimensional latent construct was reasonably strong at each wave: (Wave I $\alpha = .765$; Wave III $\alpha = .717$; Wave IV $\alpha = .686$). Each self-reported crime item was collapsed into a dichotomous variable where 1 = yes and 0 = no, creating measures of prevalence. For the static control variable, the dichotomized Wave I self-report measures were simply summed.

In the main analyses, the Wave III and IV measures are employed as dichotomous measures in multivariate, multilevel Rasch models, on which detail is provided below in the section on statistical procedures. Some models further reduce the offending items into a single yes/no item, in order to use a two-level multilevel model without an additional level for the measurement model. For these models, the outcome variable is coded such that any positive response to an offending item = yes, and zero positive responses = no.

**Parenthood (Time-Varying)**

Several time-varying measures capture participation in social roles and relationships. For the present study, parenthood is of prime interest. Recall that, because these measures vary across time, the original items are not measuring differences between people (e.g., parents; nonparents) but, rather, differences over time (e.g., times when one is not a parent; times when one is
a parent). Across both waves, respondents were parents 35% of the time. Because parenthood is an especially important variable for the present study, the parent status variables include information from several sections of the Add Health data collection.

At each wave, each respondent is asked for information about each of their biological children. In addition, a separate section of the survey asks about members of the respondent’s current household. From the household roster, I am able to identify non-biological residential children: those who live with the respondents and are identified as sons or daughters. Thus, the primary measure of parenthood includes all biological, step, adoptive, or foster children (35%), with additional measures for parents of only non-resident biological children (5%) or only non-biological resident children, including step or adoptive children (1%). Parents of both biological and non-biological children are included in the first category. Respondents were asked for the ages of all household members and children. In order to assess changes in crime as children age, I include an indicator of the age of the youngest child in years (mean = 1.6).9

Other Adult Social Roles (Time-Varying)

Marriage. Coded variables capture whether the respondent is married or, if not, whether they are cohabiting with a partner. Marriage is measured via direct items in each wave about marriages in the past and present. Respondents reported a current marriage 29% of the time, and follow-up questions gathered details of each past and present marriage. For respondents married at the time of the wave in question, the length of that current marriage is coded in years (mean = 4.1 years among those currently married). The existence of a past marriage is also identified as a dichotomous variable for those who reported having a previous marriage but no current marriage, whatever the reason (5%).

Cohabitation. Respondents were also asked about serious cohabitation, defined as living “with someone in a marriage-like relationship for one month or more.” This cohabitation variable is coded 1 = yes and 0 = no, with 16% reporting a current cohabitation and no current marriage. Additionally,

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9 An alternative specification using the age of the oldest child made little difference to the results.
questions at Waves III and IV addressed pregnancy for both men and women. Approximately 4% of the time, respondents reported being currently pregnant (if female), or involved in a current pregnancy (if male).

**Education and work.** To help address the important school-to-work transition taking place for most respondents during young adulthood, I include several control measures. Respondents were asked about whether they are currently enrolled in school, including post-secondary education of any variety (28%). They were asked about employment as well, and measures used here include whether they are employed (67%) and, if so, whether that employment is part-time (21% of the full population).

**Additional Controls (Time-Varying)**

**Living situation.** Drawing from the same household roster that identifies parents of non-biological children, I coded two other living situations. A dichotomous variable measures whether the respondent is living with one or more parents, which was reported during 24% of the surveyed times. For those who are not themselves parents, a dichotomous variable measures whether they live with any other person under the age of 16, whatever their relationship (6%). This allows us to distinguish effects of being a parent from those of living with (any) child in the home.

**Age.** Age is a variable of prime importance in any life-course study, representing a variety of developmental mechanisms (Rutter 1989). Accordingly, age is included in each analysis, measured at each wave in years since birth (mean = 25.3). Age is coded into linear, quadratic, and cubic terms to account for the well-known curvilinear relationship between age and crime (Farrington 1986).

**Sexual behavior.** Sexual activity and birth control use are also measured at both Waves III and IV and used as controls in all analyses. This helps to address the danger of conflating parenthood associations with associations of risky sexual behavior or sexual activity more generally (Kreager et al. 2010). Unfortunately, although both waves include detailed questions about contraception and sexual activity over the preceding year, the specific content of survey questions about contraceptive use changed from Wave III to Wave IV. I therefore constructed a general three-category variable to address contraception and sexual activity in the past year. For each wave, respondents are
identified as $1 = \text{sexually active and reporting no use of birth control}$, $2 = \text{sexually active and reporting some use of birth control}$, or $3 = \text{not sexually active}$. Dummy variables are coded for use in the models. In 82% of the surveys, respondents reported being sexually active, and in 12% respondents reported sexual activity but no birth control use.

Demographics and Background (Time-Stable)

Time-stable confounds do not threaten the validity of the fixed-effect coefficient estimates. For the purpose of estimating selection effects, however, it is still necessary to include some background and demographic control variables, coded here from the Wave II surveys. For example, when examining whether previous offending is associated with entry into marriage or parenthood, the differences in age must also be accounted for. By including these controls, we account for some significant between-person differences that might lead us to misestimate selection effects into parenthood. I include a few basic time-stable measures of behavior for the same reason: Wave I delinquency, high school grade point average, and Wave I sexual activity. These variables are included as controls at Level 3 in the main models, and some demographic measures are used to classify subgroups in further analyses.

Gender and race. Both gender and race are fundamental controls for any study of crime, and they are included as controls or as subpopulation definitions in most analyses. In the Add Health sample, 48% are coded male at Wave III. For the purposes of this study, I use responses to questions on race and ethnicity asked at Wave I. Responses were then coded into exclusive categories, such that 54% are non-Hispanic white, 21% are non-Hispanic Black, 16% are of Hispanic ethnicity, 7% are Asian, and 2% identify as some other race or ethnicity.

Socioeconomic status. The strength and direction of the association between socioeconomic status (SES) and crime is an unresolved debate within criminology (Braithwaite 1981; Elliott and Ageton 1980; Tittle, Villemez, and Smith 1978). For the purposes of the present study, SES is a less potent potential confound. First, socioeconomic origin is a time-stable variable, and so it cannot contribute to the within-individual estimates of social roles and crime. Second, crime as a self-reported measure in particular typically has low or
nonsignificant relationships with SES. Third, the second set of analyses includes a disadvantage index that measures tract-level features of the respondent’s neighborhood (see below). Fourth, changes in income, status, and education over time are accounted for in part via the time-varying controls of schooling and employment status. Still, I do directly control for the education attainment of each respondent’s parents at the person level. Responding parents of the original student sample at Wave I reported the highest level of education of themselves or their spouses. If the parent response is not available, parental education is coded from the main survey, when respondents (i.e. their own children) were asked about their parents’ education at Wave I. The average parental education is 3.0, on a scale from 1 = less than high school to 5 = beyond four-year college or university.

**Academic performance.** Academic performance is a consistent correlate of delinquency (R. B. Felson and Staff 2006), and so I control for grade point average (GPA). Here the preferred GPA measure is coded from Wave III collection of respondents’ high school transcripts. For about 19% of the sample, however, official transcripts are unavailable. For these individuals, GPA was instead coded from respondents’ self-reported grades in math, English, social science, and science courses at Wave I. The average GPA was 2.6.

**Sexual debut.** Sexual activity is a prerequisite for parenthood, and so to the extent that sexual activity and sexual riskiness is associated with both parenthood and crime it is a valuable control. To control for some between-person differences in frequency of sex, I include two measures. The first is a dichotomous indicator of whether the student reported having had sexual intercourse by the time of the first data collection (37% sexually active before Wave I). If they had responded yes, then the second variable is the age in years at which they reported their first experience of sexual intercourse (mean = 14.8 among those who reported having sex).

**Contextual Variables (Time-Stable)**

Add Health includes a wide range of contextual measures of the communities in which the respondents lived at Wave I, most of which are derived from the 1990 Census data. I use county and tract-level measures to explore contextual differences in the associations between social roles and offending.
Table 2. Variables in Level Two and Three Structural Models

<table>
<thead>
<tr>
<th>Time-Stable (Level 3) N = 16,564</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>48%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Race and ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>21%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>16%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Asian</td>
<td>7%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Other race/ethnicity</td>
<td>2%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Parental education</td>
<td>3.0</td>
<td>1.2</td>
<td>1.0 – 5.0</td>
</tr>
<tr>
<td>Delinquency (Wave I)</td>
<td>0.6</td>
<td>.7</td>
<td>0.0 – 2.4</td>
</tr>
<tr>
<td>Grade point average (high school)</td>
<td>2.6</td>
<td>.8</td>
<td>0.0 – 4.0</td>
</tr>
<tr>
<td>Sexually active (as of Wave I)</td>
<td>37%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Age at sexual debut</td>
<td>14.8</td>
<td>2.2</td>
<td>8.0 – 19.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time-Varying (Level 2) N = 28,478</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>25.3</td>
<td>3.7</td>
<td>18.0 – 34.0</td>
</tr>
<tr>
<td>Sexually active, no birth control use</td>
<td>12%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Sexually active, any birth control use</td>
<td>70%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Student</td>
<td>28%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Employed</td>
<td>67%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Part-time</td>
<td>21%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Live with parents</td>
<td>24%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Live with other child</td>
<td>6%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>16%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>29%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>4.0</td>
<td>3.0</td>
<td>0 – 17.7</td>
</tr>
<tr>
<td>Past marriage</td>
<td>5%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>4%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>35%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>1.6</td>
<td>2.5</td>
<td>0.0 – 21.0</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>1%</td>
<td></td>
<td>0 – 1</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>5%</td>
<td></td>
<td>0 – 1</td>
</tr>
</tbody>
</table>
Urbanicity is based on population density and is coded at the tract level from the Census Bureau’s classification. For the present study, urban tracts are those which are classified as 100% urban, coded as a dichotomous variable where $1 = \text{entirely urban}$ and $0 = \text{not entirely urban}$.

A disadvantage index (DI) coded at the tract level from an average of several measures derived from the 1990 Census: unemployment, education, and low income. Add Health includes measures of the unemployment rate for male and female separately; I averaged these together. Education is coded as the proportion of adults twenty-five years of age or older without a high school degree, and poverty is measured by the proportion of households below the poverty line. I created the DI by ranking and averaging these three domains. For this study, the 20$^{th}$ percentile is treated as “high disadvantage,” and that highest fifth is compared to the remaining 80% of neighborhoods.

**Descriptive Statistics of Independent Variables**

Descriptive statistics for all independent variables at the person level (level 3) and wave level (level 2) are presented in Table 2. The measurement model used to construct the dependent variable, self-reported crime, is discussed in its own subsection below. Models for the second set of analyses do not use the measurement model; for these, time-stable variables are at level 2 and time-varying are at level 1.

**Statistical Procedures**

**Missing Data and Attrition**

Of the 20,745 respondents at Wave I, 15,197 were located and interviewed for Wave III and 15,701 completed the Wave IV follow-up. Any respondent who was interviewed for at least one follow-up wave is included in the scope of this study. Only cases with complete information were used, excluding the crime items that constitute the dependent variable when a measurement

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10 It should be noted, however, that only respondents who completed both waves of data are able to contribute within-person variation for this study. Those who only responded to one wave therefore contribute very little to the time-varying effects that are usually of most interest.
model is used (as described in detail below). Out of the 17,837 respondents who completed Wave I and either Wave III or IV, those with complete information are used in these analyses. Following listwise deletion of missing cases (7.1% of the total), the total sample size used in this study is 28,478 occasions within 16,564 individuals.

Attrition, the loss of initial respondents from follow-up surveys, can be a serious issue in life-course research (Brame and A. R. Piquero 2003; Maume, Ousey, and Beaver 2005:35). If the original participants are systematically selecting into continued participation, and correlation of that selection with important variables (here, crime and parenthood especially) would constitute a threat to the validity of analyses. Even an original sample that was perfectly gathered and surveyed could become heavily skewed from attrition. This is especially worth considering for criminologists, because ongoing criminal activity and criminal justice contact are credible causes of study dropout. In a testament to the follow-up efforts of Add Health researchers, attrition from the original Wave I sample to Wave III or IV does not appear to be systematically related to Wave I reports of health and risk behaviors. Differences in Wave I measures between respondents and non-respondents at show a bias of less than 1% in both Wave III (Chantala et al. 2004) and Wave IV (Brownstein et al. 2011) in behaviors such as drug, alcohol, and tobacco use. Bias of individual delinquency items ranges from 0.7 to 7.6% at Wave IV, with near-zero point estimates of bias on an index of delinquency items and of no more than 2.2% on a violence index (Brownstein et al. 2011:16–17). These analyses give some confidence that sample attrition should cause little to no bias of the estimates of the present study.

Weighting

The Add Health Study was designed with several supplementary samples to the main stratified sample at Wave I. These include (1) an oversampling of some race/ethnic categories; (2) a saturation sample of certain schools; (3) a

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11 Because of the high number of items tested by Brownstein et al. (2011), they employ a Bonferroni correction to adjust for the 232 tests ($\alpha = .0002$ rather than the conventional .05). Although this procedure helps reduce the rate of Type II errors, it also reduces the power of the study to detect small-magnitude biases. Still, given the minimal size of the point estimates of bias provided, an assessment of “little or no bias” seems reasonable.
genetic sample focused on twins and siblings; (4) an oversample of respondents with disabilities. The last was later dropped from follow-up analyses. The most relevant adjustments for the present study are the oversampling of Chinese, Cuban, and Puerto Rican students, as well as black students who had at least one parent with a college education.

In order to retain maximum statistical power for comparisons between groups, I follow Winship and Radbill’s (1994) in leaving regression analyses unweighted. I do include basic controls for race, ethnicity, and parental education at the person-level of the main analyses. Because of the similarity of these independent variables with the sample criteria, it is unnecessary to also weight the analyses. Weighting the analyses would regain the representativeness of the population sampled, but would “undo” the desired increase in the explanatory power that was the impetus for the original oversampling. Similar considerations have guided previous analyses of Add Health data (e.g., Quillian and Campbell 2003) as well as other national longitudinal survey data (e.g., England, Budig, and Folbre 2002; Willson, Shuey, and Elder 2007). Furthermore, because the sampling weights are a person-level adjustment, they have no influence on the within-person associations that are the main focus of this study. As a result, however, it should be noted that the regression analyses presented are not nationally representative.

**Analysis**

The main analyses in this study use the program HLM 6 (Raudenbush et al. 2004, 2000) to estimate a three-level Bernoulli (logit) model. At the third level, where the unit of analysis is respondents, there are 16,564 cases; each person has up to two waves of surveys (Wave III, IV, or both) at the second level, totaling 28,478 cases. At the first level are up to 11 items for each wave, a total of 341,736 cases. I employ a multivariate, multilevel Rasch model, for which I am indebted to prior criminological work (Sampson, Morenoff, and Raudenbush 2005; Zimmerman 2010) including detailed descriptions of item-response theory models (Osgood, McMorris, and Potenza 2002) and the multilevel application of Rasch models (Raudenbush, Johnson, and Sampson 2003). The second and third levels comprise a structural model, containing time-varying and time-stable explanatory variables. For the second set of analyses addressing neighborhood disadvantage (presented in Chapter 7), in
order to preserve variance, I exclude the measurement model and estimate two-level models using a binary measure of self-reported crime as an outcome. For analyses without a measurement model, the sample size is 28,379 occasions (at level 1) within 16,538 people (at level 2).

**Measurement Model**

In three-level models, the first level constructs a measurement model designed to estimate $\theta$, the position of the respondent at that wave on a latent scale of self-report offending (Osgood et al. 2002). A respondent’s position on $\theta$ is inferred from the probability of offending at a given wave, transformed via odds ratio and natural logarithm into $\eta$. For each respondent $k$ at wave $j$, the log-odds of a positive response to item $i$ is $\eta_{ijk}$, conceived in the Rasch model as a function of the respondent’s general likelihood to offend at a given wave, $\pi_{ijk}$, and the severity of the particular item, $\psi_i$:

$$\eta_{ijk} = \pi_{ijk} + \psi_i$$  \hspace{1cm} (1)

The measurement model at level-one estimates $\psi_i$ for each offense (excluding one, which serves as the reference category), as featured in Table 3. Coefficients of the measurement model do not vary across waves, so that an estimate of severity is made based on mean rates of response in the sample. The intercept, $\pi_{0jk}$, is interpreted as the mean likelihood to offend for a given respondent-wave combination; it is modeled as:

$$\pi_{0jk} = \mu + X_{jk}\beta + W_k\gamma$$  \hspace{1cm} (2)

Where $\mu$ is the model intercept, $X_{jk}$ is a vector of covariates measured at wave-level covariates (at wave $j$ for respondent $k$), and $W_k$ is a vector of person-level covariates for respondent $k$. That is, the set of coefficients $X$ and $W$ estimate partial associations between the wave-person propensity to offend and the person’s time-varying and time-stable characteristics. All analyses use non-linear models (HGLM) with robust standard errors, allowing for overdispersion.
Table 3. Items and Severity Coefficients from Measurement Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Severity Coefficient</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>−4.19</td>
<td>.03</td>
</tr>
<tr>
<td>Damage property that didn't belong to you? [Excluded]</td>
<td>7.7%</td>
<td>−0.15</td>
<td>.05</td>
</tr>
<tr>
<td>Sell marijuana or other drugs?</td>
<td>11.7%</td>
<td>−0.19</td>
<td>.05</td>
</tr>
<tr>
<td>Take part in a fight with a group of your friends?</td>
<td>7.1%</td>
<td>−0.16</td>
<td>.04</td>
</tr>
<tr>
<td>Steal something worth less than $50?</td>
<td>7.6%</td>
<td>−0.16</td>
<td>.04</td>
</tr>
<tr>
<td>Get into a serious physical fight? [Wave IV]</td>
<td>6.0%</td>
<td>0.11</td>
<td>.06</td>
</tr>
<tr>
<td>Buy, sell, or hold stolen property?</td>
<td>4.6%</td>
<td>−0.87</td>
<td>.05</td>
</tr>
<tr>
<td>Deliberately write a bad check?</td>
<td>3.8%</td>
<td>−1.10</td>
<td>.06</td>
</tr>
<tr>
<td>Steal something worth more than $50?</td>
<td>3.4%</td>
<td>−1.31</td>
<td>.05</td>
</tr>
<tr>
<td>Use a weapon in a fight? [Wave III]</td>
<td>2.5%</td>
<td>−2.14</td>
<td>.08</td>
</tr>
<tr>
<td>Use or threaten to use a weapon to get something?</td>
<td>1.8%</td>
<td>−2.11</td>
<td>.07</td>
</tr>
<tr>
<td>Go into a house or building to steal something?</td>
<td>1.7%</td>
<td>−2.22</td>
<td>.07</td>
</tr>
<tr>
<td>Use someone else’s bank account without permission?</td>
<td>1.4%</td>
<td>−2.51</td>
<td>.08</td>
</tr>
</tbody>
</table>

Table 3 displays the cases responding, percent coded "yes," and the severity coefficient of each offending item with its associated standard error. These estimates are the results of a measurement model that includes no wave-level or person-level predictors. Two waves of responses are used for each person, except for the two single-wave items (the Wave III “weapon use in a fight” item which replaced the “serious physical fight” item of other waves). Employing the Rasch model, rarity is synonymous with severity, and so those with a lower coefficient are interpreted as milder forms of offending. In these data, the most common items are damaging property, selling drugs, petty theft, and physical fights, while the rarest (and therefore most severe) are robbery, burglary, and the unauthorized use of bank or credit cards. The conceptual outcome of these analyses is the latent variable $\theta$, a continuous variable that is assumed to have a normal distribution and represents the respondent’s likelihood to offend at the particular wave. For each item to which a person responded in each wave, the estimated form of $\theta$ is increased...
by the corresponding severity coefficient. Each item was measured separately for Wave III and Wave IV, so frequencies correspond to the proportion answered at each wave, with 28,478 person-waves available for analysis.

**Analytic Approach**

The analytic models in this study focus on the relationships between parenthood and criminal behavior. The second and third levels of the models separate out between-person differences from within-person differences, allowing assessment of change in the associations between parenthood and crime over the age of the child. Because each time-varying measure is also included as a person-level average, the models partition the overall association between independent and dependent variables into changes over time and differences between people. This helps to address a major threat to validity, as we can have confidence that any variations in criminal activity that are due to between-person differences will not be reflected in the estimates of time-varying social roles and controls in the models. This method answers the theoretical challenge that changes over time are merely reflections of underlying, time-stable, biological or psychological variation in the population (Gottfredson and Hirschi 1987).

Multilevel longitudinal analysis is not, however, a methodological panacea. Although the potential confounders of time-stable differences between people is accounted for by separating variance into time-stable and time-varying components, having respondents ‘act as their own controls,’ this does not address potentially spurious associations due to time-varying measures. For example, as Bjerk (2009) has pointedly argued, we can readily propose time-varying causes that could prove the well-documented association between marriage and crime spurious. Changes in maturity over time could simultaneously influence involvement in crime as well as entrance into and exit from marriage. The apparent role effect could thereby reflect the shared relationship with maturity. Restricting analyses to solely within-individual change does not obviate the challenges of selection and role effects. We must push ourselves to consider time-varying as well as time-stable selection (Bjerk 2009).
Although this challenge is not fully overcome in this study, there is good reason to think that selection into parenthood and crime is less of a problem than selection into marriage and crime, the main target of Bjerk’s critique. First (as the results below will indicate) the person-level association between parenthood and crime is modest and not statistically significant. That is, when we compare those respondents who become parents to those who remain non-parents, we see little difference in self-reported crime. In the full sample, the association between parenthood and crime is exclusively seen between time points, not between people. This is a marked difference to marriage, where we see substantial selection into marriage on our outcome: people reporting lower rates of offending are significantly more likely to marry.

Second, whereas increases in crime could be hypothesized to hasten the end of a marriage, the same reasoning does not apply as strongly to parenthood. Parents may separate, and one may no longer be a residential parent, but one does not cease being a parent. Accordingly, although we might think that (for example) heavy alcohol use could spur both increases in criminal behavior and an end to marriages, alcohol abuse rarely ends parenthood. Furthermore, by examining the associations between parenthood and crime over time, we are able to observe how self-reported offending changes as children age. Even if some time-stable variables predict selection into both parenthood and crime, time-varying variables cannot predict the aging of children and crime. Compared to marriage, parenthood as a role is arguably less determined by the decision-making of its participants. If this is true, there would be a lower rate of interference from conscious self-selection, at least.
Table 4 displays the results of the main, full-sample model, a three-level Rasch model of criminal offending. The coefficients of the measurement model are not duplicated from Table 3 above. To aid interpretation, all structural coefficients are centered on the grand mean. The intercept thereby corresponds to an adjusted group mean. The grand intercept of –4.40 corresponds to an adjusted group mean expressed in log-odds. For the hypothetically average person, in the average wave, scoring the mean on all variables, the probability of answering “yes” to any single offending item is about 1.2%.\footnote{\[ \frac{e^{-4.40}}{1+e^{-4.40}} = 0.012 \]} The variance in that outcome is decomposed into its between-person (\(\tau_\beta\)) and within-person (\(\tau_\pi\)) components. The ratio of these variance components indicates that about one-third of the variation in self-reported offending items is between people, with the other two-thirds within the same individual between the two waves.\footnote{\[ \frac{1.427}{1.427+3.099} = 0.315 \]}

Later tables do not present the full set of control variables, although they are still included in every model. I briefly review here the results of these controls. The associations of offending with time-stable background and demographic variables are in the expected directions. It is common to see minimal or no main effects of race and ethnicity in self-report studies, and there are no significant overall differences found here. The educational level of the respondent’s parents is associated with a slight increase in crime (although this is net of several mediating factors, including student status and high school grades). As we would expect, delinquency at Wave I has a strong relationship with the near-identical measures of crime in adulthood. Better high school grades are associated with lower crime as an adult. Sexual debut prior to Wave I is predictive of later criminal behavior, but the specific age at debut is nonsignificant over and above that effect.

All time-varying measures, excluding the age terms, are included at both level 2 (as measured in each survey wave) and at level 3 (as a person-level average of the two waves). This allows us to separate the between-person
Table 4. Rasch Model of Self-Reported Crime (Linear Age)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef. (S.E.)</th>
<th>Coef. (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.04 (.04)**</td>
<td></td>
</tr>
<tr>
<td>Race and ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>0.04 (.05)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.03 (.06)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0.02 (.08)</td>
<td></td>
</tr>
<tr>
<td>Other race/ethnicity</td>
<td>0.01 (.15)</td>
<td></td>
</tr>
<tr>
<td>Parental education</td>
<td>0.04 (.02)*</td>
<td></td>
</tr>
<tr>
<td>Prior delinquency</td>
<td>0.75 (.03)***</td>
<td></td>
</tr>
<tr>
<td>High school grades</td>
<td>-0.19 (.03)***</td>
<td></td>
</tr>
<tr>
<td>Sex prior to Wave I</td>
<td>0.18 (.05)***</td>
<td></td>
</tr>
<tr>
<td>Age at sexual debut</td>
<td>-0.02 (.01)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-0.13 (.01)***</td>
</tr>
<tr>
<td>Age squared</td>
<td>0.01 (.01)</td>
<td></td>
</tr>
<tr>
<td>Age cubed</td>
<td>0.00 (&lt;.01)</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>-0.34 (.09)***</td>
<td>0.10 (.06)</td>
</tr>
<tr>
<td>Employed</td>
<td>0.02 (.08)</td>
<td>-0.13 (.06)*</td>
</tr>
<tr>
<td>Part-time</td>
<td>0.15 (.10)</td>
<td>0.08 (.07)</td>
</tr>
<tr>
<td>Sexually active, no birth control</td>
<td>0.52 (.14)**</td>
<td>0.20 (.10)*</td>
</tr>
<tr>
<td>Sexually active, with birth control</td>
<td>0.46 (.09)***</td>
<td>0.12 (.07)+</td>
</tr>
<tr>
<td>Live with parents</td>
<td>-0.10 (.09)</td>
<td>-0.07 (.06)</td>
</tr>
<tr>
<td>Other child in household</td>
<td>0.56 (.18)**</td>
<td>-0.36 (.11)**</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>-0.04 (.12)</td>
<td>-0.15 (.07)*</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.36 (.15)*</td>
<td>-0.61 (.10)***</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.10 (.03)**</td>
<td>0.06 (.02)**</td>
</tr>
</tbody>
</table>
Past marriage  
-0.09 (.19)  
-0.01 (.15)
Currently pregnant  
0.14 (.20)  
-0.28 (.14)*
Parenthood  
Any child  
-0.10 (.13)  
-0.38 (.09)***
Residential, non-biological  
0.41 (.42)  
0.05 (.27)
Non-residential, biological  
0.25 (.21)  
0.12 (.14)
Age of youngest  
0.00 (.02)  
0.05 (.02)**
Intercept  
-4.40 (.04)***
Between-person variance ($\tau_0$)  
1.427
Between-wave variance ($\tau_0$)  
3.099

+ p < .10; * p < .05; ** p < .01; *** p < .001

variance from the within-person variance explained by each variable. Student status, for example, has a statistically significant negative association at the person level (odds ratio = 0.71, $p < .001$) but no within-person effect at the wave level (odds ratio = 1.10, $p = .137$). So, this model estimates that respondents who are students at either wave are thus less likely than non-students to offend, whether or not they are in school at the wave in question. This suggests that the difference in crime of the respondents in and out of college has more to do with the kinds of people who are in school rather than the actual condition of being in school. What appears to be negatively associated with criminal behavior is selection into adult schooling, not the schooling itself.

Employment shows the opposite pattern, as there is only a significant effect at the wave level (odds ratio = 0.88, $p = .037$) and no significant difference in crime between those who have a job at some point and those who do not (odds ratio = 1.02, $p = .839$). Part-time work seems to make no statistically significant difference apart from the general employment effect. From these findings, then, it is the condition of actually having a job, rather than being the kind of person more likely to be employed at any given time, that is negatively associated with self-reported offending. Some caution should be exercised in the interpretation of these coefficients, however. These decompositions into time-stable and time-varying components should not be interpreted as definitive evidence of causal effects. Recalling Bjerk (2009), time-
varying confounders can still play a role in explaining the associations at the wave level. So, for example, certain changes over time in personality or maturity could be hypothesized to influence participation in both employment and criminal activity. If that were the case, this observed wave-level employment–crime relationship could be spurious.

Terms measuring sexual activity are significant at both levels. Those who are sexually active are more likely to report offending, both between time points for one individual (odds ratio = 1.13, *p* = .067 with birth control; odds ratio = 1.22, *p* = .040 without birth control) and comparing individuals on their average report of sexual activity (odds ratio = 1.58, *p* < .001 with birth control; odds ratio = 1.67, *p* = .001 without birth control). The reference category for both coefficients is “not sexually active,” but the close similarity in coefficients indicates that there is little difference in offending, between those who do or do not use birth control.

Living with one’s parents does not appear to have much of a relationship to self-reported crime in these data. Living with someone else’s child, however, has an interesting pair of relationships. The person-level estimate is large and significant (odds ratio = 1.76, *p* = .002) whereas the wave-level estimate is in the opposite direction (odds ratio = 0.70, *p* = .002). So within this sample, respondents living with someone else’s child under the age of 16 tend to be more criminal than those who are not living with children. However, actually living in the household with someone else’s children does reduce their reported criminal activity. An accurate interpretation of this phenomenon would likely require additional measures of the relationships with these other children.

Turning to romantic unions, both cohabitation and marriage have negative associations with offending. There is no person-level effect of cohabitation (odds ratio = 0.96, *p* = .698), but at the time that respondents are living with a romantic partner, they are slightly less likely to report offending (odds ratio = 0.86, *p* = .043). The marriage associations are considerably stronger. Respondents who are married at either wave have overall lower likelihoods of offending than non-married respondents (odds ratio = 0.70, *p* = .019). They are also much less likely to offend at the time they are married, compared to times that they are not married (odds ratio = 0.54, *p* < .001). The effect of length of marriage has both time-stable and time-varying components, and they
operate in opposite directions, which makes interpretation slightly tricky. The time-stable component is significant and negative (odds ratio = 0.90, \( p = .002 \)), indicating that people who tend to be married for longer periods of time have lower levels of crime. The time-varying component is also significant, but positive (odds ratio = 1.06, \( p = .007 \)), somewhat tempering the effect

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>(S.E.)</th>
<th>Coef.</th>
<th>(S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time-Stable: Person</strong> ( N = 16,538 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live with parents</td>
<td>-0.10</td>
<td>(.09)</td>
<td>-0.07</td>
<td>(.06)</td>
</tr>
<tr>
<td>Other child in household</td>
<td>0.54</td>
<td>(.18)**</td>
<td>-0.35</td>
<td>(.11)**</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>-0.04</td>
<td>(.12)</td>
<td>-0.15</td>
<td>(.07)*</td>
</tr>
<tr>
<td><strong>Marriage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.35</td>
<td>(.15)*</td>
<td>-0.61</td>
<td>(.10)**</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.10</td>
<td>(.03)**</td>
<td>0.06</td>
<td>(.02)**</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-0.10</td>
<td>(.19)</td>
<td>-0.01</td>
<td>(.15)</td>
</tr>
<tr>
<td><strong>Currently pregnant</strong></td>
<td>0.14</td>
<td>(.20)</td>
<td>-0.29</td>
<td>(.14)*</td>
</tr>
<tr>
<td><strong>Parenthood</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 1 year old</td>
<td>-0.21</td>
<td>(.17)</td>
<td>-0.38</td>
<td>(.12)**</td>
</tr>
<tr>
<td>2 to 4 years old</td>
<td>-0.09</td>
<td>(.13)</td>
<td>-0.29</td>
<td>(.10)**</td>
</tr>
<tr>
<td>5 to 7 years old</td>
<td>-0.01</td>
<td>(.18)</td>
<td>-0.20</td>
<td>(.12)</td>
</tr>
<tr>
<td>8 to 10 years old</td>
<td>-0.09</td>
<td>(.26)</td>
<td>0.15</td>
<td>(.17)</td>
</tr>
<tr>
<td>11 years or older</td>
<td>-0.30</td>
<td>(.38)</td>
<td>-0.03</td>
<td>(.26)</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>0.40</td>
<td>(.42)</td>
<td>0.07</td>
<td>(.26)</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>0.24</td>
<td>(.20)</td>
<td>0.12</td>
<td>(.14)</td>
</tr>
</tbody>
</table>

Note: All person and wave-level controls from the main model are included.
+ \( p < .10 \); * \( p < .05 \); ** \( p < .01 \); *** \( p < .001 \)
of selection into longer relationships. Taking all coefficients together, any combination of marriage timing and length still produces a substantial drop in offending. Past marriages appear to have little significance for offending either between people (odds ratio = 0.91, \(p = .639\)) or between observations (odds ratio = 0.99, \(p = .963\)).

The set of parenthood coefficients comprise the main findings of interest. Table 4 indicates that parenthood has significant associations with offending solely in the between-person estimates. The respondents who eventually become parents appear to have no significant or substantive difference in their criminal activity compared to those who are always childless, net of controls.\(^{14}\) It is the actual condition of being a parent that matters, rather than time-stable selection into parenthood. The dichotomous indicator of parenthood has a strong negative effect (odds ratio = 0.68, \(p < .001\)). The measure of the age of the youngest child, however, has a positive coefficient, indicating that as the child ages, that negative parenthood effect diminishes (odds ratio = 1.05, \(p = .005\)). The expected difference in crime between times of parenthood and other times, based on the point estimates, declines and reaches zero about when the child turns nine years old.\(^{15}\) So although pregnancy and early parenthood are associated with significant reductions in crime, those benefits fade as the child grows older. After around nine years, the parent is no different in their criminal activity than we would have expected if they had never had children.

Although the linear estimate of the parenthood effect over the age of the child is a convenient way to test for change over time, it could be that the constant slope is an oversimplification of the effect over time. To verify that the linear estimates are suitable, I ran alternative models using a categorical version of the variable of the youngest child’s age. Table 4 uses the linear estimates: a binary indicator of parenthood coupled with an indicator of child’s age. Table 5 displays the results of a model including exclusive set of

\[^{14}\text{It is possible, but quite rare, for these young adults to be parents at Wave III but not Wave IV. Therefore, nearly all of the within-person variation in parenthood is due to becoming a parent between Wave III and IV.}\]

\[^{15}\text{0.380 / 0.047 + 1.04 \approx 9.1 years to intercept. (With all variables grand mean centered, the average 1.04 years of the age of the youngest child must be added to calculate the estimate of parenthood at childbirth.)}\]
dummy variables to capture parenthood and child’s age. The range of years was divided into five categories: 0 to 1, 2 to 4, 5 to 7, 8 to 10, and 11 years or older. All the other social roles and controls included in the original model are included in the Table 5 models but not shown.

The results from the categorical measures of parenthood are quite similar to those found using linear measures. Parenthood has no person-level effects, indicating that the kinds of people becoming parents (or even parents at different stages) do not seem to differ in offending. What matters, rather, is whether they are actually parents at the time of the survey. More specifically, it matters whether they are new parents. Only the first two categories, up to a four-year-old child, are statistically significant. By five to seven years of age, the parent’s offending is not statistically significantly different compared to child-free occasions.

Figure 1 provides a visual reference for both the fading effect of parenthood and the in measurement alternatives. The results of the parenthood and child age estimates from Table 4 and Table 5 are included simultaneously. Vertical error bars mark the 95% confidence interval of the dummy variable estimates, and the linear estimates are based on calculations from the midpoint of the dummy categories. It should be recalled that the offending measures ask about crimes within the prior year. A child less than one year of age would have been in utero during the period of offending, and so there is some overlap in estimates between the end of pregnancy and the beginning of parenthood. Figure 1 shows that the categorical estimates map rather well onto the linear estimates, confirming that the simple linear measure of child’s age captures the pattern in parental offending by age of child. Both categorical and linear estimates support the core finding: there is a significant drop in offending associated with childbirth, but that effect fades as the child ages. By around age eight to ten, the parenthood effect has disappeared.
Differences in parenthood by gender are a common finding in the extant literature. Some ethnographic work has emphasized the potentially transformative role of children more for mothers than fathers (e.g., Edin and Kefalas 2005; Giordano et al. 2002). Quantitative findings have not always found a gendered parenthood effect, but the most recent and methodologically strong studies have (Giordano et al. 2011; Staff et al. 2010; Thompson and Petrovic 2009). To estimate the effect of motherhood separately from fatherhood in this study, I run separate models for women and men. An alternative would be to include an interaction term between gender and each
parenthood variable, but that approach only allows for variation by gender in those specific interacted effects. By estimating separate models, I effectively allow every parameter to vary by gender, from other social roles to the measurement model of offending items. This is a more conservative approach; I am not assuming that the time-varying controls or other social role effects work identically for men and women. Results from these analyses are presented in Table 6, with other control variables included but not shown.

The top half of Table 6 displays the results from the female-only model, and the bottom half displays the male-only model. Although only family role effects are displayed in the table, some gendered differences emerge, suggesting that separate models for gender are helpful. This ensures that other correlations that might vary by gender do not throw off the parenthood estimates. The women appear to be responsible for the countervailing coefficients seen earlier, where person-level marital length is associated with less crime (odds ratio = 0.85, p = .001) and wave-level marital length with more (odds ratio = 1.09, p = .007). For men, only effects of the main marriage measure are significant, operating both within-person and between-person. They are engaged in less crime while married (odds ratio = 0.56, p < .001), and the kinds of men who get married offend less than those who do (odds ratio = 0.62, p = .015). The within-person cohabitation effect for women is nonsignificant (odds ratio = 1.03, p = .781), but it is significant for men (odds ratio = 0.76, p = .004), suggesting that men may offend less while they live with a romantic partner. However, a difference in significance from zero effect size does not necessarily mean that the two coefficients are significantly different from each other. I applied a Clogg test to see whether the differences between estimates by gender were statistically significant (Clogg, Petkova, and Hari-tou 1995; Paternoster et al. 1998). The test result indicates that the wave-level cohabitation coefficients are indeed significantly different from each other (z = 2.00; p = .046). From these analyses, therefore, it does appear that the overall significant effect of cohabitation is actually restricted to men. During times when men live with romantic partners, they are less likely to offend, but the same does not hold for women. Other than cohabitation, rela-

---

16 The Clogg test compares regression coefficients across models by means of a z-test: $z = (b_1 - b_2)/(SE_1^2 + SE_2^2)$. 

75
Table 6. Estimated Family Role Effects on Crime by Gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time-Stable: Person</th>
<th>Time-Varying: Wave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (S.E.)</td>
<td>Coef. (S.E.)</td>
</tr>
<tr>
<td><strong>Women (n = 15,181 in 8,681)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other child in household</td>
<td>0.47 (.26)+</td>
<td>-0.31 (.18)+</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>-0.15 (.18)</td>
<td>0.03 (.12)</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.16 (.24)</td>
<td>-0.63 (.16)***</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.17 (.05)**</td>
<td>0.08 (.03)**</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-0.12 (.28)</td>
<td>-0.05 (.23)</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>0.08 (.29)</td>
<td>-0.44 (.21)*</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>-0.10 (.19)</td>
<td>-0.44 (.14)**</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>0.61 (.93)</td>
<td>0.11 (.64)</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>0.88 (.42)*</td>
<td>0.02 (.29)</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>-0.02 (.04)</td>
<td>0.06 (.02)*</td>
</tr>
<tr>
<td><strong>Men (n = 13,198 in 7,857)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other child in household</td>
<td>0.57 (.24)*</td>
<td>-0.36 (.15)*</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>0.06 (.15)</td>
<td>-0.27 (.09)**</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.48 (.20)*</td>
<td>-0.57 (.12)***</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.05 (.04)</td>
<td>0.03 (.03)</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-0.06 (.27)</td>
<td>0.01 (.21)</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>0.29 (.28)</td>
<td>-0.15 (.18)</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>-0.10 (.18)</td>
<td>-0.33 (.12)**</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>0.25 (.44)</td>
<td>0.20 (.28)</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>0.07 (.25)</td>
<td>0.23 (.16)</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>0.01 (.04)</td>
<td>0.02 (.02)</td>
</tr>
</tbody>
</table>

+ p < .10; * p < .05; ** p < .01; *** p < .001
tively few differences emerge from the comparison between men and women of family roles coefficients.

The primary time-varying effect of parenthood, the difference between times when they are parents and times when they are not, looks very similar for men (odds ratio = 0.72, p = .006) and women (odds ratio = 0.65, p = .002) net of controls. The time-varying effect of the child’s age, however, is significant for women (odds ratio = 1.06, p = .021) but not for men (odds ratio = 1.02, p = .311). The Clogg test statistic indicates that this gender difference does not approach statistical significance (z = 0.98, p = .327). The parenthood effect for men, even though it appears to fade at a somewhat slower rate than that of women, is not significantly different from the overall effect.

Figure 2. Parenthood and Crime by Age of Youngest Child by Gender
Results also show that, as with the combined sample, neither men nor women appear to select into parenthood on the basis of their likelihood to offend. A significant time-stable coefficient would suggest that parents are more or less likely than non-parents to report committing crimes. Another way to think about this is as a description of the kinds of people who become parents. We would not expect someone who reports being a parent at another wave to be significantly different in their offending than someone who remains a non-parent throughout, whether male (odds ratio = 0.91, \( p = .585 \)) or female (odds ratio = 0.91, \( p = .616 \)).

Figure 2 displays the trajectories of the combined time-varying parenthood effect, based on the separate male and female models of offending. Both men and women experience a short-term drop in offending, and that effect fades away over time. From these results, we would expect men and women to offend less while they are parents of infants and toddlers. But as the child ages, we do not expect respondents to report any less crime than they we would have predicted for their childless periods.

Findings Compared to Hypotheses

The purpose of this main set of analyses is to produce a set of results that will speak to a set of competing hypotheses derived from the mechanisms of criminological theories. Findings indicate that parenthood’s influence on offending varies significantly over the age of the youngest child. To parallel the syntax used in the mechanism hypotheses:

\[
\text{Results: A significant reduction in crime during the transition to parenthood. As the child ages, parental crime increases to the norm.}
\]

During times when they are parents, men and women commit fewer crimes when they have very young children, especially at birth and infancy. As the child ages, however, the effect of parenthood fades. From these results, we would not expect that being a parent of a nine-year-old child would cause anyone to offend less than if they had no child.
Internal Controls

Hypothesis rejected. (A significant reduction in crime during the transition to parenthood. As the child ages, parental crime should decrease even further.) Internal control is the key mechanism of attachment and commitment in social bonding theory (Hirschi 1969, 2004). When we are emotionally and rationally invested in conventional projects, institutions, and relationships, we have a strong set of reasons to stay on the straight and narrow. If such reasons influence our decision-making, acting as a restriction on our otherwise antisocial desires, then parenthood should be a flagship source of control. The average parent should have excellent “stake in conformity” from having a child, and that effect ought to grow over time as the parent invests more time and emotion into the bond. Yet the fading effect of parenthood contradicts this expectation. There is no reason that internal controls, increased as a result of being a parent, should decrease as the child ages.

Direct Control

Hypothesis rejected. (No significant change in crime during the transition to parenthood. As the child ages, there is no significant effect on parental crime.) Direct controls – the monitoring and supervision of others – are important components of the age-graded theory of informal social control (Laub and Sampson 2003; Sampson and Laub 2005). Because children are incapable of exercising direct control over their parents, however, if this mechanism were central to our understanding of the parenthood effect then there would be no change in criminal activity. While older children might begin to exert direct control, infants and toddlers are unable to supervise or monitor their parents’ criminality. The rejection of this hypothesis does not mean that direct control is nonexistent, or that the age-graded theory of informal social control is invalid. As the primary explanation of the pattern of crime during early parenthood, however, the mechanism of direct control is inadequate.

Identity Work

Hypothesis not rejected. (A significant decrease in crime during the transition to parenthood. As the child ages, a number of possibilities emerge for parental crime.) Informal social control theory and the theory of cognitive transformation share a mechanism of change in identity and self-concept. To the extent that parenthood can be a turning point or hook for change, we would expect that
some parents will reduce their offending (thus, the immediate significant
decrease). However, because both theories acknowledge a diversity of possi-
ble actions in the context of the life course, the existing criminological litera-
ture on identity does not establish any firm prediction about what, on
average, should happen afterward. Especially if temporary changes away
from offending are theorized – as with the idea of episodic derailments in the
life course – could explain the parenthood effect found here. Identity work
could therefore be consistent with these results. It should be acknowledged,
however, that further elaboration on this mechanism would be required
before it can provide a fully satisfying explanation of this effect.

Strains and Stressors

Hypothesis rejected. (A significant increase in crime during the transition to
parenthood. As the child ages, parental crime is likely to decrease to the norm.)
Agnew’s general strain theory focuses on tendency for individuals to cope
with negative stimuli, removal of positive stimuli, and the failure to achieve
goals by committing crimes (Agnew 1992, 2001). Parenthood, especially early
parenthood, can involve a range of stressors. Although not all strains associ-
ated with parenthood would be likely to necessarily induce crime as a re-
sponse, the average amount of strain certainly increases during times of
parenting. These strains can also be associated with lower social control, as
relationship conflict can compound with other stress. Yet, counter to the
hypothesis that parenthood could increase criminal coping, there is a signifi-
cant decrease in crime associated with the transition to parenthood and early
parenting. Over time, as parents might be adapting to strains and therefore
reducing their criminal coping, we instead see an increase in crime, back
toward the level of non-parenthood. The strain hypothesis of the parenthood
pattern is therefore rejected.

Routine Activities

Hypothesis not rejected. (A significant decrease in crime during the transition to
parenthood. As the child ages, parental crime is likely to increase to the norm.)
With a focus on the way in which individuals move through time and space,
routine activities explanations often focus on the distribution of criminal
situations more than individuals directly. Accordingly, this hypothesis con-
cerns how parenthood influences the way in which people spend their time.
As per Yule and Griffiths (2009), parents are less likely to be victimized when children are very young because they become centered around home and family in their daily lives. Less time spent out in the company of strangers, or in public areas, reduces the likelihood of involvement in criminogenic situations. As children age, however, parents become less home-centered and transition to an even more public set of routines (bringing children to school, daycare, activities, events, and so on). The pattern of offending predicted by routine activities matches precisely the results found here: an initial drop in criminal offending that fades as the children grow older.

**Peer Relationships**

Hypothesis rejected. *(A significant decrease in crime during the transition to parenthood. As the child ages, parental crime is likely to remain low.)* Although researchers focused on peer relationships have looked more at marriage than at parenthood (Maume et al. 2005; Warr 1998), similar reasoning guides what predictions were made from a peer relationship mechanism. If relationships with deviant peers drive criminal offending, then the reduction of peer socializing that accompanies parenthood should reduce crime as well. As parenthood goes on, we would not expect the involvement with deviant peers to resume earlier levels. Rather, just as with marriage (and not unlike social bonding explanations), parenthood should represent a change in the “long-term patterns or trajectories of criminal offending” (Maume et al. 2005:29). The short-term change in offending found here is inconsistent with the peer relationships hypothesis. Indeed, we could well expect the opposite: the diverging path of parenthood could lead parents further and further from their former associates.

17 Indeed, the argument could be made that, much like the social bonding effect, changes in peer relationships would cause offending to decrease further as time goes on. The first declines might be a result of less time spent with deviant peers, but as years of parenting accumulate, those relationships will become more distant. Parents are likely to develop new relationships with more conventionally-minded friends. The negative relationship from the peer relationship mechanism could thereby accumulate: an expectation that is contrary to the findings here.
The Fading Effect of Parenthood

This chapter has presented the main set of analyses, addressing the question of how crime changes during times when respondents are parents. Results show that the transition to parenthood is associated with a sharp decline in offending around the time of childbirth. As the child ages, however, that decline fades. Around the time that their youngest child is nine, parents are not expected to offend any less than they would have as non-parents. Because a diversity of gender findings have been reported in the literature, often finding that motherhood is more influential on crime than fatherhood, these results were compared with separate models for men and women. No significant differences were found.

An earlier discussion of major criminological theories and their mechanisms included the formulation of six competing hypotheses. Based on the immediate and lasting changes associated with parenthood, their predictions were compared to the findings from these main analyses. The predicted effects of internal control, direct control, strains, and peer relationships were rejected, as they do not match the findings of the immediate decline and fading of the parenthood effect. The explanations most consistent with these results are those of identity work and routine activities.
A recent article by Kreager, Matsueda, and Erosheva (2010) sought to bridge the gap between qualitative and quantitative findings on parenthood and crime (here forward: “the Denver study”). They read the qualitative literature as indicating that parenthood reduces crime, but these only in the context of mothers in high-risk urban neighborhoods (E. Anderson 2000; Edin and Kefalas 2005). The quantitative literature has indeed produced mixed findings, although among recent studies especially it is not uncommon to see motherhood reducing crime more than fatherhood (Giordano et al. 2011; Graham and Bowling 1995; Staff et al. 2010; Thompson and Petrovic 2009; Uggen and Kruttschnitt 1998). The aim of the Denver study was to use high-quality quantitative methodology to analyze a sample more similar to those found in urban ethnographic research. Their argument was that unrecognized treatment effect heterogeneity is blame for the difference in findings: parenthood in the general population is not the same as motherhood in poor urban areas. Kreager and colleagues therefore used only mothers from the Denver Youth Study (DYS), which sampled its participants from poor, urban neighborhoods.

The Denver study did find, as the authors predicted, significant declines in crime, alcohol, and drug use associated with motherhood. They interpret these as a success in bridging the gap: by restricting their sample to women in the context of urban disadvantage, they confirmed the findings of qualitative work. This conclusion, however, still relies on an inference that it was the sample restrictions that led them to find significant results. Although they found motherhood effects, they did not compare their results to the men surveyed in the DYS to determine whether it was actually motherhood or simply parenthood generally. And although the neighborhoods in the DYS were sampled to intentionally represent areas with poor socioeconomic conditions, they are not in line with the extreme disadvantage of, say, the neighborhoods of the women studied by Edin and Kefalas (2005). The Denver study included a test to see whether the motherhood effect was stronger in areas of extreme disadvantage, but the interaction term was not significant (Kreager et al. 2010:247). In short, Kreager and colleagues presented a hypothesis that the effect of parenthood is different for disadvantaged urban
women compared to the general population, but they offered no test of this difference in the Denver study.

A direct approach to this hypothesis requires a test for differences between the general population and urban areas, as well as between men and women. The Add Health data include a large national sample, and it includes a host of measures including the rates of unemployment, poverty, low education, and single motherhood of each participant’s Wave I neighborhood. With these data, a direct test of the Denver study hypothesis can be made: does the effect of parenthood differ between the general population and mothers in disadvantaged urban neighborhoods? This is the first study to directly compare parenthood effects on crime in a national sample to effects in an economically disadvantaged, urban subsample.

Urban Neighborhoods and Disadvantage in Add Health

Measuring Urbanicity and Disadvantage

The Denver study includes comparisons between Denver and the DYS samples as well as Philadelphia and the respondents of Edin and Kefalas (2005). If the authors were to establish a quantitative confirmation of the qualitative work done in poor urban areas, then they needed to ensure that their sample would be comparable to those used in such studies. With variable Census measures of the tracts reported by Edin and Kefalas, Kreager and colleagues constructed a table comparing the neighborhoods (Kreager et al. 2010:231). I have reproduced portions of that table, adding a subsample of Add Health based on disadvantage, as Table 7. Recall that, although the poorest five tracts of the DYS were separately identified and compared in the Denver study, no significant difference between motherhood effects was found for these areas of extreme disadvantage (Kreager et al. 2010:247).18

I approach the Denver study hypothesis by splitting the sample three ways: by urbanicity, by disadvantage, and by gender. As discussed in the measurement subsection, urbanicity is provided as a continuous measure in Add Health; urban neighborhoods for this study are taken as 100% urban

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18 Edin and Kefalas also restricted the scope of their interview sample to single mothers with incomes less than $16,000. Even within their extremely poor urban neighborhoods, then, they sought women who were especially disadvantaged.
tracts. The disadvantage index (DI) is an average of ranked measures of (1) proportion of families with income below the poverty line; (2) proportion older than twenty-five with no high school diploma; (3) the averaged male and female unemployment rate. The highest 20% of tracts on this measure are coded as high–DI neighborhoods.

Comparing each measure, the high-DI areas in Add Health are similar in education level, poverty, and unemployment to the disadvantaged neighborhoods of Edin and Kefalas (2005). The single-mother household rate is lower in Add Health’s high-DI areas, although that may be in part due to somewhat different measurement (proportion of households rather than proportion of children) and a different decade (the 2000 Census, used by Edin and Kefalas and Kreager et al., would have include a higher cumulative nonmarital childbearing rate than Add Health’s 1990).

<table>
<thead>
<tr>
<th></th>
<th>No HS diploma</th>
<th>Male unemploy.</th>
<th>Female unemploy.</th>
<th>Single mother household&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Below poverty line</th>
</tr>
</thead>
<tbody>
<tr>
<td>DYS: Full sample</td>
<td>33</td>
<td>9</td>
<td>8</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>29</td>
<td>11</td>
<td>11</td>
<td>43</td>
<td>18</td>
</tr>
<tr>
<td>Edin &amp; Kefalas</td>
<td>43</td>
<td>18</td>
<td>16</td>
<td>60</td>
<td>34</td>
</tr>
<tr>
<td>Add Health: 20&lt;sup&gt;th&lt;/sup&gt; percentile DI</td>
<td>49</td>
<td>16</td>
<td>15</td>
<td>17</td>
<td>31</td>
</tr>
</tbody>
</table>

All figures are percentages. Census characteristics are the medians of tracts reported, from the 2000 Census for prior studies (Edin and Kefalas 2005:228–229; Kreager et al. 2010:230–231) and the 1990 Census for Add Health data.

<sup>b</sup>This Add Health variable denotes the proportion of households that are female-headed, single-parent. Other studies are described as the proportion of children under 18 living in households that are female-headed and single-parent.
Adjustments to Model Analyses

As discussed in the methods section, I make some adjustments to the models used in these analyses. All models this study decompose variance in crime and the model covariates into between-person differences and within-person changes between the two waves. This allows us to have confidence that all person-level factors are eliminated from the estimates of time-varying roles. Because the parenthood measure is comparing time points between people who sometimes were and sometimes were not parents, we know that preexisting stable differences cannot explain the results that we find. As a result, however, the analysis can be demanding, especially as the sample size is reduced in these models.

In order to ensure that sufficient information is available to estimate these multilevel models, I eliminate the measurement model, using instead a two-level design with waves nested inside individuals (reduced from the three-level items within waves within individuals). Without a measurement model, the outcome variable used is a binary participation measure: if the respondent reported involvement in any of the offending measures, they are coded 1; otherwise, they are coded 0. Table 13 in the Appendix lists the structural coefficients of the main analysis without a measurement model. The Table 13 coefficients can be directly compared to those presented in the first model, shown in Table 4 in the last chapter. Although the Rasch model is an excellent tool for modeling the outcome of offending, a simpler design with a logistic outcome does not change the associations between social roles and crime that are of greatest import for the present study.

On a final methodological note, two control variables that become rare among the subsamples and have not produced significant results are also excluded. The indicator of non-biological residential parenthood is excluded from the female-only analyses, because very few women are only parents to non-biological children in their household. Additionally, very few Asian respondents from Add Health live in the high-DI urban areas, and the coefficient is typically nonsignificant. The control variable for Asian in the set of race/ethnicity dummies is therefore also excluded. All other control variables that were present in the first set of models in Chapter 6 are included, but, for the sake of brevity, they are not shown in these tables.
To compare the effects of parenthood between residents’ neighborhoods of origin, I step through a series of three subpopulations. Kreager and colleagues argue that the key sample limitations are gender and neighborhood, but by limiting the Denver Youth Survey to women there is no way to test their inference. Starting from the full sample, I divide and compare models first on urbanicity, then on disadvantage, and finally on gender.

### Differences in Parenthood by Urbanicity

The first pair of models uses the Census measure of urbanicity to test whether parenthood effects are different in urban and non-urban areas. The original measure is continuous, allowing for tracts to be partially urbanized. To maximize the comparison, and to accurately capture the approximation to data like that of Philadelphia or Denver, I limit this comparison to neighborhoods that are 100% urban and those that are 0% urban, excluding from the analysis some 2,597 respondents who originated from partially urbanized tracts.

Table 8 displays the results of both models. Parenthood in urban areas appears to have no significant association with self-reported offending, either at the between-person (odds ratio = 0.73, \( p = .175 \)) or within-person levels (odds ratio = 0.83, \( p = .283 \)). The average urban parent appears to be no different from the urban non-parents in criminal involvement. Parenthood in non-urban areas follows a pattern similar to that seen in the general population. Parents are no different from non-parents at the person level, whether via at the main indicator (odds ratio = 1.44, \( p = .173 \)) or the age of the youngest child (odds ratio = 1.01, \( p = .851 \)). Comparing periods of parenthood to non-parenthood, however, there is a sharp decline immediately after childbirth (odds ratio = 0.38, \( p < .001 \)) that is counterbalanced by an increase in offending over time (odds ratio = 1.09, \( p = .018 \)).

A Clogg test of regression coefficients between the two models indicates that the main parenthood vs. non-parenthood wave-level coefficient is significantly lower in non-urbanized tracts (\( z = -2.90, \ p = .004 \)). Although the average effect of parenthood in urban areas is nonsignificant, there is an important second restriction to make. Urban areas include both affluent and impoverished neighborhoods, but no one has yet made any claims about
Table 8. Family Role Effects on Crime by Urbanicity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time-Stable: Person</th>
<th>Time-Varying: Wave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>(S.E.)</td>
</tr>
<tr>
<td><strong>Urban (n = 14,072 in 8,295)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other child in household</td>
<td>0.74</td>
<td>(.30)*</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>0.08</td>
<td>(.21)</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.47</td>
<td>(.27)+</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.09</td>
<td>(.06)+</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-0.34</td>
<td>(.35)</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>-0.25</td>
<td>(.38)</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>-0.31</td>
<td>(.23)</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>1.74</td>
<td>(.80)*</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>0.75</td>
<td>(.38)*</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>0.01</td>
<td>(.04)</td>
</tr>
<tr>
<td><strong>Non-Urban (n = 9,862 in 5,646)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other child in household</td>
<td>0.84</td>
<td>(.40)*</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>-0.09</td>
<td>(.25)</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.47</td>
<td>(.32)</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.12</td>
<td>(.06)*</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-0.36</td>
<td>(.39)</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>0.33</td>
<td>(.39)</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>0.37</td>
<td>(.27)</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>0.03</td>
<td>(.90)</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>0.29</td>
<td>(.42)</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>0.01</td>
<td>(.05)</td>
</tr>
</tbody>
</table>

+ p < .10; * p < .05; ** p < .01; *** p < .001
parenthood in *rich* urban neighborhoods. Any effect of parenthood in disadvantage could be lost in the averaged effect without further sample restrictions and testing.

*Differences in Urban Parenthood by Disadvantage*

The second pair of models therefore compares parenthood effects between urban neighborhoods with high levels of disadvantage and other urban neighborhoods. These findings are displayed in Table 9. Recall that, because high disadvantage indicates a neighborhood in the top 20th percentile of all neighborhoods on the disadvantage index, there are roughly four times as many respondents in the low–moderate disadvantage category. From the average zero effect of urban areas seen in the last pair of models, a borderline significant parenthood effect reemerges in the high disadvantage neighborhoods. Times during which respondents report being parents are accompanied by lower rates of crime reported (odds ratio = 0.56, p = .089). On the other hand, the age of the youngest child, which was significant and positive in the full sample, has here a point estimate of very near zero (odds ratio = 1.00, p = .961). With the caveat that the significance of this parenthood effect is borderline, then, the results are still suggestive. Rather than the fading parenthood effect seen in the larger sample, parents in high-risk urban neighborhoods appear to maintain a long-term reduction in their criminal involvement.

*Motherhood and Fatherhood in Disadvantaged Urban Areas*

For the final test between subsamples, recall that Kreager and colleagues argued that existing qualitative work focused more on mothers and offered a skeptical view of fatherhood in urban neighborhoods. This last pair of models compares motherhood to fatherhood within disadvantaged urban neighborhoods, and the associated results are presented in Table 10. The parenthood effect is found at borderline significance for motherhood, replicating the results of the Denver study — but it also holds for fatherhood in urban neighborhoods high on the disadvantage index.

Self-reported offending is significantly lower during both periods of motherhood (odds ratio = 0.62, p = .063) and fatherhood (odds ratio = 0.47, p = .025). Age of the youngest child is nonsignificant as a within-individual predictor for both women (odds ratio = 1.00, p = .918) and men (odds ratio =
Table 9. Family Role Effects on Crime in Urban Areas by Disadvantage

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time-Stable: Person</th>
<th>Time-Varying: Wave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (S.E.)</td>
<td>Coef. (S.E.)</td>
</tr>
<tr>
<td><strong>High DI (n = 2,992 in 1,766)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other child in household</td>
<td>1.58 (.54)**</td>
<td>−1.13 (.38)**</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>0.60 (.44)</td>
<td>−0.12 (.29)</td>
</tr>
<tr>
<td><strong>Marriage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>−0.27 (.60)</td>
<td>0.18 (.40)</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>−0.09 (.12)</td>
<td>−0.09 (.08)</td>
</tr>
<tr>
<td>Past marriage</td>
<td>−1.39 (.82)+</td>
<td>0.67 (.66)</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>1.04 (.73)</td>
<td>−1.10 (.53)*</td>
</tr>
<tr>
<td><strong>Parenthood</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>0.05 (.48)</td>
<td>−0.58 (.34)+</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>0.39 (1.48)</td>
<td>0.89 (.90)</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>1.66 (.70)*</td>
<td>−0.23 (.47)</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>0.03 (.08)</td>
<td>0.00 (.06)</td>
</tr>
</tbody>
</table>

| **Other Urban (n = 11,080 in 6,529)** |                     |                    |
| Other child in household        | 0.40 (.37)          | −0.12 (.24)        |
| Cohabiting                      | −0.06 (.24)         | −0.19 (.16)        |
| **Marriage**                    |                     |                    |
| Currently married               | −0.47 (.31)         | −0.77 (.21)**      |
| Length of marriage              | −0.10 (.06)         | 0.09 (.05)*        |
| Past marriage                   | −0.08 (.39)         | 0.01 (.33)         |
| Currently pregnant              | −0.73 (.46)         | 0.44 (.30)         |
| **Parenthood**                  |                     |                    |
| Any child                       | −0.44 (.26)+        | −0.07 (.20)        |
| Residential, non-biological     | 2.65 (.91)**        | −1.42 (.62)*       |
| Non-residential, biological     | 0.52 (.45)          | −0.31 (.32)        |
| Age of youngest                 | 0.01 (.05)          | 0.04 (.04)         |

+ p < .10; * p < .05; ** p < .01; *** p < .001
Table 10. Family Role Effects on Crime in Disadvantaged Urban Areas by Gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time-Stable: Person</th>
<th>Time-Varying: Wave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (S.E.)</td>
<td>Coef. (S.E.)</td>
</tr>
<tr>
<td><strong>Female (n = 1,697 in 979)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other child in household</td>
<td>1.38 (.64)*</td>
<td>-1.24 (.30)***</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>0.66 (.48)</td>
<td>0.02 (.21)</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.77 (.75)</td>
<td>0.37 (.33)</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>0.10 (.15)</td>
<td>-0.28 (.07)***</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-0.85 (.90)</td>
<td>-0.61 (.58)</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>1.71 (.87)+</td>
<td>-2.36 (.44)***</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>-0.35 (.52)</td>
<td>-0.48 (.26)+</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>0.18 (1.18)</td>
<td>0.66 (.49)</td>
</tr>
<tr>
<td>Non-residential, biological(^a)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>0.06 (.09)</td>
<td>0.00 (.04)</td>
</tr>
<tr>
<td><strong>Male (n = 1,295 in 787)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other child in household</td>
<td>1.93 (.60)**</td>
<td>-1.10 (.33)**</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>0.30 (.55)</td>
<td>-0.28 (.28)</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.13 (.73)</td>
<td>0.24 (.36)</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.23 (.14)+</td>
<td>0.03 (.07)</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-2.00 (.93)*</td>
<td>1.81 (.64)**</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>0.25 (.93)</td>
<td>-0.19 (.47)</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any child</td>
<td>0.74 (.61)</td>
<td>-0.75 (.33)*</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>-0.13 (1.36)</td>
<td>0.99 (.73)</td>
</tr>
<tr>
<td>Non-residential, biological(^a)</td>
<td>1.42 (.74)+</td>
<td>-0.30 (.39)</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>0.05 (.10)</td>
<td>-0.02 (.05)</td>
</tr>
</tbody>
</table>

\(^{+}p < .10; ^{*}p < .05; ^{**}p < .01; ^{***}p < .001\)
0.98, p = .679), and neither point estimate is even in the same direction as the results from the general population or non-urban areas. This stable effect of parenthood, then, is consistent among both men and women in disadvantaged urban neighborhoods.

Against the Denver Study Hypothesis

In one sense, the findings here are a replication of the Denver study (Kreager et al. 2010). Just as that study found, the results here indicate that women in disadvantaged urban neighborhoods are significantly less likely to report offending during periods when they are mothers. But the inference made by Kreager and colleagues is that they only found those results because they looked exclusively at mothers in poor urban neighborhoods. As these findings from Add Health show, however, there may be more consonance between the general population and urban environments.

The results from the full series of models are summarized in Table 11. No gender difference was found in areas of urban disadvantage. Together with the results on motherhood and fatherhood found in the general population, these results suggest that gender may not condition parenthood as strongly

<table>
<thead>
<tr>
<th>Sample Restrictions</th>
<th>Immediate Change</th>
<th>Slope over Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Sample</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>Non-Urban</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>Urban</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Urban, Low–Moderate Disadvantage</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Urban, High Disadvantage</td>
<td>−</td>
<td>n.s.</td>
</tr>
<tr>
<td>Urban, High Disadvantage, Mothers</td>
<td>−^a</td>
<td>n.s.</td>
</tr>
<tr>
<td>Urban, High Disadvantage, Fathers</td>
<td>−</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

^a This effect is borderline significant (p = .063).
as other studies have suggested. This may be in part due to the population represented by Add Health: a recent national cohort of young adults. Additionally, there is a difference between parenthood estimates within the full or non-urban sample and estimates within high-disadvantage urban neighborhoods, but not the one that Kreager and colleagues supposed. Parenthood as a short-term influence, the pattern found in the main study findings in the last chapter, is found here exclusively among respondents from non-urban areas. None of the models that are limited to urban areas showed a significant effect of coefficient of the age of the youngest child. From the results here, within poor urban neighborhoods, the decline in crime associated with parenthood is not expected to fade for either mothers or fathers.
CHAPTER 8: DISCUSSION AND CONCLUSIONS

Criminological work on the transition to parenthood and parenting is still sparse. Most existing quantitative research has used a single-item measure of parenthood, failing to allow for the possibility that parenting’s influence on crime could change or develop. The results shown in this dissertation indicate that the within-person association between parenting and crime may vary greatly over time. There is a fading effect of parenthood on crime. An initial difference in criminal offending fades over time, so that after several years have passed there appears to be no difference in offending between the parent and non-parent.

This relatively simple elaboration in the operationalization of parenthood might explain some of the mixed and varied results found in the extant literature. If the influence of parenthood on offending fades over time, then the many studies that have failed to consider it could be measuring different stages of the parenthood effect. A study of a younger sample could find significant results because many of them are parents to infants and toddlers, at which time we would expect a significant drop in crime. A study with a wider participant age range could include parents of newborns, young children, adolescents, and even adult children. By focusing too narrowly on the presence of the social role (parent or not a parent) and on the transition to into a social role (just before or just after childbirth), we may miss the development of effects possible as individuals make their way through the life course. The timing of lives does not apply only to the normative ordering of transitions in the life course; it also speaks to the changes that can take place in social roles over time.

Parenthood and Crime in Disadvantage

The second set of results in this dissertation addressed the question of whether quantitative findings of mixed effects in this area might be due to unacknowledged variation in the expected parenthood effect. Specifically, Kreager and colleagues (2010) argued that the ethnographic research proposed an effect of motherhood in disadvantaged urban areas. Their study, using data from the Denver Youth Survey, did find motherhood effects, but they did not have either fathers or a general population survey with which to
compare their findings. Using the Add Health data, I was able to directly compare results from non-urban areas to urban areas; from disadvantaged urban areas to other urban areas; and between mothers and fathers in poor urban neighborhoods. The results suggest that while Kreager and colleagues may be correct that motherhood in high-risk urban areas reduces crime, the preventive effects of parenthood on crime are more general than that. The fading parenthood decline comes out strongest in non-urban areas. Among men and women from disadvantaged urban neighborhoods, the parenthood drop looks to be more lasting.

**Behavioral Change in Criminology**

Although quantitative studies have been largely silent on the potential of temporary effects and short-term changes associated with parenthood, there are ideas supportive of these findings in circulation. One of the men in the Youth Lifestyles Survey seems to have described his brief stint of fatherhood at the age of 21 in such terms:

> I was only with it for three months, but yeah it was a good feeling. But things started to go wrong and I moved out then. She was still here for a while. And I used to baby sit on Saturday nights so she could go out with her mates. The baby used to scream the house down, it did my head in, I couldn’t wait to leave it. (Graham and Bowling 1995:75)

And in his study of inner-city Philadelphia, Anderson found that fathers sometimes “determine that they are unable to play house […] do not marry the mothers of their children, and often become, at best, part-time fathers and partners” (E. Anderson 2000:186). The concept of behavioral change is arguably at the heart of desistance research, yet there has been relatively little elaboration in criminological theory on the potentially temporary character of behavioral change. Although more elaborate and more sophisticated longitudinal data and methods have become commonplace in criminology, we may require more high-powered *theoretical* understandings of change that will match the pace set by of our statistical tools.
The work toward a “sociology of derailments” constitutes the most extensive discussion of temporary change in the life-course criminology literature (Giordano et al. 2007). Some men in Laub and Sampson’s research are described as exhibiting a “zigzag pattern” of criminal involvement, but that suggests a permanent sort of instability rather than identifiable episodes of attempt and a failure (Laub and Sampson 2003). The earlier work on a theory of cognitive transformation by Giordano and colleagues had described on the steps required for an agentic actor to capture the “hook for change,” but no discussion of how that actor might later lose hold of that hook. An episodic derailment is conceptualized as a short time when continuity in behavior is disturbed by the present circumstances of the life course. Giordano and colleagues argued that long-term stability in behavioral patterns is supported by the continuity of the emotional self.

While this neo-Meadian focus on emotions and self is a value route to explore, there are other traditions relevant to this fading effect of parenthood. A focus on behavioral change could bring to the fore interactions between stable and mutable elements over the life course. There has been friction between theoretical traditions built on stability and those built on change (Gottfredson and Hirschi 1987). We can ask when criminal behavior might change, or how it might change, but we can also ask what kinds of people are better able to make use of changes in circumstance. The ability to maintain behavioral change may depend on self-regulation (Bandura 1977; Rothman, Baldwin, and Hertel 2004). Intentional self-change, and the idea of behavioral slippage, call for more a more thorough integration of social psychological perspectives into criminological theorizing (Kiecolt 1994).

**Implications for Criminological Theories**

The hypotheses tested in this study were derived from the mechanisms central to many major criminological theories. However, a theory is not necessarily doomed if the effect of parenthood effect is inconsistent with a favored mechanism. The damage to the theory depends on the variety of mechanisms presented by that theory, as well as its openness to other explanations. In other words, the findings presented here are inconsistent with the mechanisms of several theories, but they are not *contradictory* every one of
those theories. Because most of these are general theories of crime, I have taken the first set of findings as most relevant. How can they address a fading effect of parenthood on crime? The more permanent effect of parenthood, while intriguing in its possible implications for theories of criminology and the life course, is limited to a smaller proportion of the population.\(^{19}\)

**General Strain**

General strain theory, for example, is designed to be flexible and allow for the processes of other etiological theories of crime. Agnew has explicitly included elements of social learning and social control theories as a way to help explain how strains can influence crime (Agnew 1992). Indeed, it might be most accurately described as a theory of the middle range (Merton 1967). General strain theory explains a set of phenomena (strains and their associations with crime) without rooting itself in a grand theory of human behavior.

The fact that parenthood does not follow the most clear-cut strain prediction does not mean that general strain theory as a whole is contradicted by these results. Further investigation of strain theory and parenthood would include measurements of strain mechanisms and attention to the context of criminal and noncriminal coping. Certain types of strain are identified as more likely to result in crime: those associated with lower social control; those that create an incentive for crime; and those that are experienced as particularly strong or unjust (Agnew 2001). So the strains of parenthood might not be particularly crime-generative strains, but there could also be variance in those strains. Parents who feel strong economic strains from childrearing will have more of an incentive for crime.

**Social Bonding**

As discussed earlier, social bonding theory is not friendly to the explanations of other theories, and it explicitly roots itself in a grand theory of human behavior. Hirschi positioned social bonding as a complete theory of crime: the social bond is the explanation of deviance and conformity. The

\(^{19}\) None of these theories are premised on restrictions to urban areas, disadvantaged areas, or mothers. Kreager and colleagues present their idea as a way to reconcile seemingly conflicting findings and as an empirical hypothesis, not a theoretical one.
internal controls of commitment, attachment, and belief are central to that explanation. The results of this dissertation suggest that it is possible to have a substantial increase in long-term commitment and attachment without an accompanying decrease in crime. These results therefore present a direct contradiction to social bonding theory. Unlike general strain theory, which might allow other theoretical processes to take priority, social bonding theory rejects the validity of any other theoretical processes. Commitment, attachment, and belief in the social bond all point toward a permanent decline in crime due to parenthood. It is difficult to image how, without disputing the empirical evidence, social bonding could explain the seeming lack of a parenthood effect on internal controls.

Social Learning

Social learning is a total theory of crime, like social bonding. Unlike Hirschi on social bonding theory, however, Akers has embraced an approach to social learning theory that has been termed “integration by conceptual absorption” (Akers and Sellers 2004). Perhaps the concept is self-explanatory: by deploying the general concepts of social learning theory, Akers accepts findings that might be proposed as evidence for other theories as, in fact, entirely consistent with social learning. So, for example, the marriage findings proposed as supportive of control theories (marriage is a conventional institution and a “stake in conformity”) are interpreted by Akers as evidence in favor of social learning theory. Spouses influence each other’s associations and definitions of crime, and reinforce and punish each other’s behavior: basic social learning principles. Akers himself acknowledges that this approach “can be accused of theoretical imperialism” (1989:24). Given the range of behaviorist influences on crime, there is surely a social learning explanation that is consistent with this evidence on parenthood and crime. What is clear, then, is that this particular form of a social learning explanation is inadequate. This does not rule out future social learning hypotheses. Without measures of peer associations or other key mechanisms, it would be premature to claim that social learning, as a full theory, is challenged here.

Routine Activities

The routine activities explanation of these results is quite compelling. Routine activities provides the only theoretical argument with existing
evidence in this direction (Yule and Griffiths 2009). Although the range of ages in this study is more limited than the parents analyzed by Yule and Griffiths, the temporary decline in offending appears to match the drop in victimization that they found among parents of younger children. Measurement of actual patterns of activity would be more supportive of this theory, however. At this point, although the hypothesis is consistent, it would take operationalization of actual patterns of parental activity to move forward to positive evidence for the theory. Thinking about parenthood as influential on a parent’s routines is supportive of the moves that have been made to incorporate routine activities as a measure of individual crime, not just situations or aggregate rates (Osgood et al. 1996). To the extent that social bonding theory and informal social control theory consciously adopt routine activities as part of their own mechanisms, the evidence here is somewhat supportive of that incorporation.20

Informal Social Control

These results do not directly contradict the theory of informal social control. Like general strain theory, the age-graded theory of informal social control is a theory of the middle range; it tells us about life events and crime. To the extent that life-course transitions entail changes in direct control, social capital, and identity, informal social control theory is able to offer predictions about changes in crime. If some transition is less influential on these systems, however, the theory would seem to be silent. The only element of informal social control that is arguably at work here is the emphasis on change in identity and self-concept that is shared by the theory of cognitive transformation. If informal social control theory can explain the temporary nature of this identity shift, then the theory has gained evidence from this study. As it stands, this theory may earn credit for having the more plausible set of control mechanisms.

Seen as competing versions of control theory, parenthood becomes a useful point of difference between the two. Both the internal controls of Hirschi and the direct, interactive controls of Laub and Sampson will predict desistance from steady work, or from the military, or from marriage. Empiri-

---

20 Although these theories do not truly own the winning horse, they have at least made some good bets.
cal evidence where both theories agree does not tell us much. Looking at parenthood, however, where their predictions diverge, it is the theory of informal social control that comes out ahead. If we ask which form of control theory has made the best predictions about changes in crime associated with parenthood, then the theory of informal social control would seem to be more valid.

**Cognitive Transformation**

Like informal social control theory, the theory of cognitive transformation is centered on potential changes due to life events. Unlike that theory, however, cognitive transformation has a very tentative character. There are a range of possibilities contained within the cognitive and emotional processes of transformation. It is entirely possible, from the explanations of this theory, that parents, spouses, and employees can simply disregard the potential for change even with a good opportunity. The hooks for change of cognitive transformation require active effort and agentic decision-making on the part of the individual. This theoretical openness led to my decision to leave the “identity work” hypothesis wide in its predictions of how parent identity might be relevant to crime over time. Without more detailed measurements of the exact mechanisms, it would be hard to provide evidence that contradicts the range of possible explanations of the theory of cognitive transformation. So, although this theory is not contradicted by the present study, without more specific hypotheses to test, the evidence can only be construed as vaguely supportive.

**Limitations of this Study**

Although this study makes several strong contributions to the life-course literature, there are significant limitations as well. Several of these limitations prompt the use of complementary studies using additional measures and/or different data. Although some of these issues have been treated earlier in discussions of life-course concepts, the data, and the methodology, I include them here for full consideration.

Some weaknesses of the Add Health data were discussed in detail in Chapter 5, on data and methods, but they are worth revisiting here. The Add Health data are limited to students at the time of the Wave I interview, which
reduces the representation of the most disadvantaged groups. Individuals who had already dropped out of school or were otherwise unavailable for an in-home interview are excluded entirely from the data. Because the respondents are still relatively young at the time of the Wave IV interview (most ages 25–32), I can only consider the early years of parenthood. Relatively few respondents have children older than ten, and so I cannot speak with confidence to the changes in crime associated with later stages of parenthood. Lacking direct measures of theoretical mechanisms in the data, I have relied on hypotheses about the expected patterns of crime through the transition to parenthood.

Additionally, because the waves are measured several years apart, the causal ordering is not always clearly established. Parenthood status is measured retrospectively over the last year from the point of the survey, and so in some cases ongoing involvement in criminal activity could have influenced parent status, rather than the other way around. Custody and residency could be gained or lost as a result of earlier criminal activity. Men’s knowledge of fertility as well as the decision to terminate pregnancy could be influenced by the quality of the parent-parent relationship.

Finally, it is often difficult to attribute causality to findings that rely on observational data, and this dissertation is no different. Although this study includes controls for several major social roles, time-varying controls, and uses a multilevel analysis, there could be a range of potential time-varying threats to validity (Bjerk 2009). Kreager and colleagues included a potential time-varying confound specific to motherhood: if the women in their sample went through an increase in both drug use and sexual activity prior to childbirth (say, from “partying and enjoying the night life”), then a return to normal levels of substance use would appear to be a decline. Other time-varying confounds include the aforementioned variation in parental involvement. Substance use or other problems could cause both an increase in criminal activity and a loss of custody or decrease in involvement with one’s child. Therefore, there must be a tentative character to the associations found here; we cannot have great confidence that these parenthood effects are causal.
Future Research

Relatively few studies of parenthood and crime are yet available, and so opportunities for fruitful research on parenthood and crime abound. One could certainly imagine any number of useful studies, but I focus here on several avenues that could be reasonably addressed through future quantitative analyses. Some of these ideas could be pursued with Add Health data, while others would require more nuanced measures of parenting or romantic relationships.21

Timing of Parenthood

This dissertation has not addressed the timing of parenthood and marriage in detail. Although life-course pathways have diversified in recent decades (Shanahan 2000), the timing of parenthood could still hold relevance to its effects on crime. The content of what ages are “too early” or “too late” to have children may different than the dominant norms of the last century, but mistimed life events are always dependent on these contexts. The causal ordering of parenthood with other life-course transitions may also be important. Even as marriage and parenthood have become decoupled, the timing of parenthood – before or after marriage, before or after secondary education, before or after work experience – may have significance for its tendency to produce strains and rewards, or for the readiness and ability of new parents to transform their identities.

Strains and Rewards

Without measurements of intervening processes and mechanisms, it is hard to draw firm conclusions about the plausibility of the strain perspective. The most obvious hypothesis, as used here, may be oversimplified. Stressors of parenthood could increase crime without following a pattern of an immediate rise and later decline. The transition to parenthood can be a sudden shift, but the perhaps strains of parenthood instead accumulate. In that case, a movement toward a transformation in behavior and identity could be worn

21 The Fragile Families and Child Wellbeing Study and the National Longitudinal Survey of Youth 1997 are two well-known and widely available studies that may be able to provide criminologists with more detailed measures of parenthood and romantic relationships, along with measures of criminal activity and criminal justice contact.
down and reversed by an accumulation of strains. On the other hand, if individuals tend to learn more non-criminal coping strategies as they age (Agnew 1997), parents may learn to deal with the stressors of parenthood without resorting to crime.

Furthermore, the theory is not so simple as to propose that any and all strains lead to crime. Different types of strain, and different situations that cause those strains, may tend to produce different emotions and coping strategies (Agnew 2001). When parenting increases depression, as it does for some parents (Nomaguchi and Milkie 2003) an increase in drug and alcohol use could result with no direct effect on violent or property crime. Parents who experience an increase in relationship conflict, on the other hand, might begin to experience more violence (whether as perpetrators, victims, or co-participants). Research has also shown that mothers with higher education may expect more from themselves, potentially increasing the stressors of parenting (Nomaguchi and Brown 2011). It may be that the mechanisms of strain and identity change work together, and that a complete understanding of parenthood will require both theoretical approaches.

Parent-Child Relationship

The present study has only touched upon parental involvement with children with indicators of biological children and resident or nonresident parents. There is a great deal more that could be measured about the parent-child relationship. Only 50% of mothers and 25% of fathers in Giordano et al. (2002) had full custody of all of their children, and official records showed that a majority had lost or never received custody of at least one biological child. If we are to understand the role of parenthood in desistance from crime among serious offenders, more details on the involvement of parents will be required. The dynamics of fatherhood, and fathers’ changes in their activities and behaviors, can vary significantly depending on residency (Eggebeen and Knoester 2001). Crime and parental involvement could even influence each other, as criminal justice contacts reduce involvement with children (Waller and Swisher 2006). Parental involvement may also be intertwined with planning, wantedness, and thereby the parent’s readiness to change (Giordano et al. 2011).
The age of the child also matters when we ask which theoretical mechanisms are relevant to parenthood. The concept of “linked lives” is relevant here: parents are linked to children, but the parent-child relationship changes considerably through the years. This dissertation examines only early parenthood, while children are still no older than ten. As children approach adolescence, they acquire the ability to influence parents via social control and social learning mechanisms. Direct control becomes possible, and children become more observant of the full range of parental behavior. If concerns about what their children will learn influence parental criminal involvement, that would likely be an effect found for parents of older children than the present study. Routine activities of parents also shift, as adolescent children become less dependent on their parents for transportation and escort to their educational and extracurricular activities (Yule and Griffiths 2009).

Parent-Parent Relationship

The relationship between parent and child is rarely independent of the parent-parent relationship. When the romantic relationship is ended or unstable, mothers often act as gatekeepers for father’s involvement. But the transition to parenthood can also affect the parent-parent relationship. Married couples who become parents can experience increases in stress and depression accompanied by decreases in marital satisfaction and problem-solving skills (Cox 1985; Cox et al. 1999). Low-income fathers can find themselves under significant pressure to provide both financial and personal support to children (Roy 2004b), and lasting changes in criminal orientation may require a steady source of legal income (Moloney et al. 2009). Mothers in difficult economic conditions may present financial support as a requirement for romantic or even parental involvement: men who “don’t pay, can’t stay” (Edin and Lein 1997).

Drug and Alcohol Use

Substance use can present a thorny issue for criminologists. Illicit drug use is, itself, a crime, and it has strong associations with other crimes. Alcohol use also has an association with criminal behavior, but the possession and use of alcohol is often legal. To complicate things, alcohol has a stronger link to violence than most illegal drugs. So alcohol use may sometimes be used as an
explanation of crime, as Laub and Sampson (2003) described the lives of some of the Glueck men. Or it may be interpreted as coexistent with crime: “a return to substance abuse can be more properly classified as a particular type of failure to desist” (Giordano et al. 2007:1643). So should alcohol and drug use be an independent variable that helps explain patterns of crime and desistance? Or is substance use itself an outcome that constitutes those patterns? This is especially relevant to the dynamics of parent-parent and parent-child relationships. Increased alcohol use, or a return to previously unhealthy use of alcohol, may lead to complications or conflict between partners. As Bjerk (2009) argued, this represents a possible source of time-varying selection: if substance abuse causes both changes in criminal behavior and in relationship status, we could even question the common finding that marriage reduces crime. To suggest another layer of complexity, alcohol use is related to intimate and mutual partner violence (Foran and O’Leary 2008). Piecing out the details of the associations between substance use, romantic relationships, parenthood, and crime may require extensive study.

Conclusion

This dissertation used data from a national sample to examine changes in crime in early parenthood. As adult social roles have been studied with more intensity by criminologists in recent years, the transition to parenthood is beginning to come to the foreground. Several mechanisms of major criminological theories offer competing hypotheses about how a parenthood effect should operate, in its strength and direction. Main findings in this dissertation indicate that self-reported criminal activity drops significantly following the birth of a first child. After several years, however, this drop fades. By the time the child is around age nine, the parent’s crime is, on average, no different than we would have expected if they had remained childless.

These findings were used to assess a number of potential explanations derived from major criminological theories. The fading effect of parenthood is a particularly devastating piece of evidence against the empirical validity of social bonding theory. If social bonding theory is the core explanation of

22 Though note that Giordano and colleagues’ choice of the term “substance use” here omits the distinction between legal alcohol use and illegal drug use.
crime and conformity, parents ought to have strong and growing motivations to avoid committing crimes. Temporary parental desistance, therefore, simply does not fit this social bonding image. These main results are most consistent with mechanisms of routine activities and, although further elaboration may be called for, cognitive transformation and identity change are also plausible explanations.

This dissertation further examined the empirical claim that parenthood effects are strongest for mothers within urban environments with high socioeconomic disadvantage and weak or nonexistent in the general population (Kreager et al. 2010). No differences in the parenthood effects on crime were found in this study between mothers and fathers. Moreover, significant declines in offending associated with periods of parenthood were found both in high-risk urban neighborhoods and in non-urban areas. One key difference did emerge: the decline in crime associated with parenthood appears to fade among residents of non-urban areas, whereas it shows no signs of limitation by child’s age in disadvantaged urban neighborhoods. Through these findings, this dissertation helps to move forward the empirical and theoretical bounds of the current research on parenthood and criminal involvement. From the age of one’s children to the conditions of one’s neighborhood, these results also demonstrate the importance of context for our understanding of change in crime over the life course.
### APPENDIX: SUPPLEMENTARY TABLES

**Table 12. Quantitative Findings on Parenthood in Criminology**

<table>
<thead>
<tr>
<th>Study</th>
<th>Outcome</th>
<th>Sample</th>
<th>Decrease</th>
<th>No Effect</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graham and Bowling (1995)</td>
<td>Self-report desistance</td>
<td>Youth Lifestyles Survey (General UK)</td>
<td>mothers</td>
<td>fathers</td>
<td></td>
</tr>
<tr>
<td>Gilchrist et al. (1996)</td>
<td>Marijuana use, cocaine use</td>
<td>Unmarried adolescent women in US</td>
<td>young single mothers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stouthamer-Loeber and Wei (1998)</td>
<td>Self-report delinquency</td>
<td>Pittsburgh Youth Study (Urban men)</td>
<td>young fathers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uggen and Kruttschnitt (1998)</td>
<td>Illegal earnings</td>
<td>National Supported Work Demonstration Project</td>
<td>mothers</td>
<td>fathers</td>
<td></td>
</tr>
<tr>
<td>Warr (1998)</td>
<td>Marijuana use</td>
<td>National Youth Survey (General US)</td>
<td>married; unmarried</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uggen (1999)</td>
<td>Self-report economic, non-economic crime</td>
<td>National Supported Work Demonstration Project</td>
<td>mothers, fathers (any dependents)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Outcome</td>
<td>Sample</td>
<td>Decrease</td>
<td>No Effect</td>
<td>Increase</td>
</tr>
<tr>
<td>--------------------------------------</td>
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<td>---------------------</td>
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<td>--------------------------------</td>
</tr>
<tr>
<td>Giordano, Cernkovich, Rudolph (2002)</td>
<td>Self-report delinquency, arrest history</td>
<td>Ohio Longitudinal Study (Formerly incarcerated)</td>
<td>mothers, fathers (attachment)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stouthamer-Loeber et al. (2004)</td>
<td>Self-report desistance</td>
<td>Pittsburgh Youth Study (Urban men)</td>
<td>co-parenting fathers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blokland and Nieuwbeerta (2005)</td>
<td>Self-report crime</td>
<td>Dutch crime survey</td>
<td>all parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blokland and Nieuwbeerta (2005)</td>
<td>Official convictions</td>
<td>Criminal Career and Life-Course Study (Dutch offenders)</td>
<td>low-rate off. single parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Savolainen (2009)</td>
<td>Official convictions</td>
<td>Convicted, repeat felons in Finland</td>
<td>union with children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thompson and Petrovic (2009)</td>
<td>Illicit drug use</td>
<td>National Youth Survey (General US)</td>
<td>non-union mothers</td>
<td>non-union fathers; all others</td>
<td></td>
</tr>
<tr>
<td>Kreager, Matsueda, and Erosheva (2010)</td>
<td>Marijuana use, self-report crime</td>
<td>Denver Youth Survey (female subsample)</td>
<td>mothers in high-risk urban areas</td>
<td></td>
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<tr>
<td>Study</td>
<td>Outcome</td>
<td>Sample</td>
<td>Decrease</td>
<td>No Effect</td>
<td>Increase</td>
</tr>
<tr>
<td>------------------------</td>
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<td>---------------------------------------------</td>
<td>-------------------------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Staff et al. (2010)</td>
<td>Marijuana use, cocaine use</td>
<td>Monitoring the Future (General US)</td>
<td>all mothers, resident fathers</td>
<td>non-resident fathers</td>
<td></td>
</tr>
<tr>
<td>Giordano et al. (2011)</td>
<td>Self-report crime</td>
<td>Toledo Adolescent Relationships Study</td>
<td>low-SES parents, mothers with wanted</td>
<td>other fathers, mothers with unwanted</td>
<td></td>
</tr>
</tbody>
</table>
## Table 13. Two-Level Model of Crime Without Measurement Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time-Stable: Person</th>
<th>Time-Varying: Wave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (S.E.)</td>
<td>Coef. (S.E.)</td>
</tr>
<tr>
<td>Male</td>
<td>1.13 (.05)***</td>
<td></td>
</tr>
<tr>
<td>Race and ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-0.01 (.06)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.04 (.07)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0.02 (.09)</td>
<td></td>
</tr>
<tr>
<td>Other race/ethnicity</td>
<td>-0.06 (.17)</td>
<td></td>
</tr>
<tr>
<td>Parental education</td>
<td>0.04 (.02)*</td>
<td></td>
</tr>
<tr>
<td>Prior delinquency</td>
<td>0.84 (.03)***</td>
<td></td>
</tr>
<tr>
<td>High school grades</td>
<td>-0.21 (.03)***</td>
<td></td>
</tr>
<tr>
<td>Sex prior to Wave I</td>
<td>0.42 (.26)</td>
<td></td>
</tr>
<tr>
<td>Age at sexual debut</td>
<td>-0.02 (.02)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.14 (.01)***</td>
<td></td>
</tr>
<tr>
<td>Age squared</td>
<td>0.00 (.01)</td>
<td></td>
</tr>
<tr>
<td>Age cubed</td>
<td>0.00 (&lt;.01)</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>-0.44 (.09)***</td>
<td>0.21 (.05)***</td>
</tr>
<tr>
<td>Employed</td>
<td>0.09 (.08)</td>
<td>-0.16 (.05)**</td>
</tr>
<tr>
<td>Part-time</td>
<td>0.16 (.10)+</td>
<td>0.08 (.05)</td>
</tr>
<tr>
<td>Sexually active, no birth control</td>
<td>0.48 (.14)**</td>
<td>0.20 (.08)**</td>
</tr>
<tr>
<td>Sexually active, with birth control</td>
<td>0.51 (.09)***</td>
<td>0.10 (.05)+</td>
</tr>
<tr>
<td>Live with parents</td>
<td>-0.16 (.09)+</td>
<td>-0.06 (.05)</td>
</tr>
<tr>
<td>Other child in household</td>
<td>0.76 (.18)***</td>
<td>-0.49 (.09)***</td>
</tr>
<tr>
<td>Cohabitng</td>
<td>0.00 (.12)</td>
<td>-0.17 (.06)**</td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>-0.31 (.16)+</td>
<td>-0.76 (.07)***</td>
</tr>
<tr>
<td>Length of marriage</td>
<td>-0.12 (.03)***</td>
<td>0.07 (.01)**</td>
</tr>
<tr>
<td>Past marriage</td>
<td>-0.22 (.17)</td>
<td>0.11 (.11)</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>-0.02 (.20)</td>
<td>-0.22 (.10)+</td>
</tr>
<tr>
<td>Parenthood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Any child</td>
<td>−0.06</td>
<td>(0.13)</td>
</tr>
<tr>
<td>Residential, non-biological</td>
<td>0.59</td>
<td>(0.43)</td>
</tr>
<tr>
<td>Non-residential, biological</td>
<td>0.36</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Age of youngest</td>
<td>0.00</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Intercept</td>
<td>−2.14</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Between-person variance (τ)</td>
<td>4.404</td>
<td></td>
</tr>
<tr>
<td>Between-wave variance (σ²)</td>
<td>0.370</td>
<td></td>
</tr>
</tbody>
</table>

* + p < .10; * p < .05; ** p < .01; *** p < .001
REFERENCES


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