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*Journal of Research in Crime and Delinquency* 2008; 45; 191

DOI: 10.1177/0022427807313708

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<http://jrc.sagepub.com/cgi/content/abstract/45/2/191>

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# The “Cause” of Low Self-Control

## The Influence of Maternal Self-Control

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Self-control theory is one of the most tested theories within the field of criminology. However, one of the basic assumptions of the theory has remained largely ignored. Gottfredson and Hirschi stated that the focus of their general theory of crime is the “connection between the self-control of the parent and the subsequent self-control of the child” (1990:100). However, no study to date has specifically tested this relationship. Using data from the National Longitudinal Survey of Youth, this study finds that mothers with low self-control do indeed produce children with lower self-control. To begin to understand the mechanism responsible for this relationship, several parenting practices used by the mothers are examined. The analysis shows that the self-control of the mother influences her choice of punishments, as well as having moderate impacts on how she supervises her children. In turn, higher supervision and several choices of punishments affect the development of self-control in the child. This study therefore provides support for a vital, yet previously unexamined, piece of the general theory of crime.

**Keywords:** *self-control; parenting practices; NLSY*

Gottfredson and Hirschi’s general theory of crime (1990) has generated a great deal of controversy and research in the field of criminology. Challenges to the theory have come from developmental theorists (Bartusch et al. 1997; Moffitt 1993; Paternoster and Brame 1997), and from those who claim that the theory is tautological (Akers 1991). Debates also linger over how the key concept of self-control should be measured (Arneklev et al. 1993; Grasmick et al. 1993; Hirschi and Gottfredson 1993; Longshore, Turner, and

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Stein 1996; Polakowski 1994). In addition, how truly “general” the theory is in the ability to predict a range of criminal and analogous behaviors has been tested (Arneklev et al. 1993; Gibbs and Giever 1995; Keane, Maxim, and Teevan 1993; Nofziger 2001; Wood, Pfefferbaum, and Arneklev 1993). In spite of, or perhaps because of, this sort of attention, the theory continues to exert considerable influence in the field and most empirical tests find strong and consistent support for the theory (Pratt and Cullen 2000).

However, one of the most basic assertions of the theory has not been tested. Gottfredson and Hirschi specifically state “the major ‘cause’ of low self-control thus appears to be ineffective child-rearing” (1990:97). To produce a child with self-control requires consistent efforts to monitor the child, recognize deviance when it occurs, and correct such behaviors. Such activity requires that the parent or guardian of the child possesses a good deal of self-control himself or herself. Therefore, it is expected that parents who lack self-control will not be “particularly adept at instilling self-control in their children” (Gottfredson and Hirschi 1990:101). The vital role of the parents’ own self-control in predicting juvenile self-control and ultimately delinquency has not been examined. This study provides the first test of this component of the theory by determining what role the self-control of the mother has on the self-control of the child.

## Self-Control Theory

Unlike theories that assume crime is learned, or a result of extraordinary circumstances that push the individual into the behavior, the general theory of crime proposes that criminal and similarly imprudent behaviors are the normal outcome of individuals attempting to “enhance their own pleasure” (Gottfredson and Hirschi 1990:85). The degree to which this tendency leads to activity that is defined as criminal or deviant depends on the individual’s ability to resist temptations of the moment. This ability is identified as self-control.

Six different characteristics consistent with self-control are discussed within the original treatise on the theory. Gottfredson and Hirschi state, “people who lack self-control will tend to be impulsive, insensitive, physical, risk-seeking, short-sighted, and nonverbal” (1990:90). A person with such traits is less likely to recognize or consider the potential negative consequences of his or her behaviors, sacrificing long-term positive outcomes for short-term gratification of immediate desires. Gottfredson and Hirschi argued that self-control would influence many activities that also shared these characteristics. These included imprudent acts such as smoking or

driving recklessly, as well as crimes, which they defined as “acts of force or fraud undertaken in pursuit of self-interest” (1990:15). Crimes and a variety of analogous behaviors shared the same characteristics of providing some immediate gratification, at the risk of the actors’ or others’ well-being. Thus, those with low self-control would be more likely to engage in a wide range of such activities given any opportunity to do so.

Although there is a large volume of research testing self-control theory, most of it has been limited to demonstrating whether the concept of self-control does indeed predict crime and analogous behaviors. Only recently have other, and potentially more important, elements of the theory been examined. For example, one important argument made in the original statement of the theory is that self-control is a relatively stable propensity that is developed early in life. This claim has been examined with somewhat mixed results (Arneklev, Grasmick, and Bursik 1999; Burt, Simons, and Simons 2006; Turner and Piquero 2002). Whereas there is some relative stability in the individual’s self-control across time, there is also fluctuation in how this manifests and in the absolute level of self-control within the person. In addition, a few studies have included the additional component of criminal opportunities (LaGrange and Silverman 1999; Longshore and Turner 1998; Nofziger 2001). Opportunity is theoretically important because the individuals’ involvement in crime is not wholly determined by self-control. The potential of engaging in deviant acts also depends on the specific situation or environment in which the act takes place. Therefore, the ability of self-control to predict deviance is at least partly dependent on the opportunities that exist for such behaviors to occur. Research that expands into testing these components of the theory makes important contributions to our understanding of the ways in which self-control is related to crime. However, perhaps one of the most important claims of the theory has yet to be examined. Specifically, Gottfredson and Hirschi (1990:100) stated that the focus of their theory was “on the connection between the self-control of the parent and the subsequent self-control of the child.”

## The Family and Self-Control

The importance of the family in preventing or causing delinquency has been a major theme in criminological research for more than half a century. Variations in supervision, family structure, the quality of parenting, and the criminality of parents were all established as important factors for delinquency in the early 1950s and 1960s (Glueck and Glueck 1950, 1962;

McCord and McCord 1959), and have continued to be studied extensively. Such characteristics of families can dramatically influence how effective the caretakers are in providing the necessary conditions for producing well-socialized children.

Early research established that hostile parents, or those who are indifferent, are more likely to produce delinquent children (Glueck and Glueck 1950, 1962). Since that time, many studies have attempted to determine what exactly the "best" parenting style is to produce not only nondelinquent but also well-adjusted and happy children. Studies on different forms of parenting have indicated that the most effective parents demonstrate clear warmth and affection for their children while at the same time regulating their behaviors. These "warm-restrictive" parents produce children who are more likely to "value adult approval, readily internalize rules, and be rule-abiding" (Wilson and Hernstein 1985). Similar to this description is what has been termed "authoritative" parenting (Baumrind 1978, 1991), which has been found to produce children who are successful on a number of outcome measures. Authoritative parents are high in both demands and responsiveness. The characteristic of "demandingness" includes setting expectations that are appropriate to the level of the child's maturity, supervising the activities of the child, and disciplining the child consistently for misbehavior. While this form of structure and expectation level is important, parents also need to be high on "responsiveness," which is how well they help the child develop their own individuality (Baumrind 1991). Parents do this by addressing the specific needs and demands of the child. These findings regarding effective parenting in general are very similar to the necessary requirements for the development of self-control as outlined in the general theory of crime.

Gottfredson and Hirschi (1990:97–100) discuss three specific tasks that are necessary to form adequate self-control. First, parents or caregivers must be able to monitor the child's activities through supervision. This may be easier in smaller families or with two parents present but such conditions are not required. The importance of supervision is linked to the second requirement, which is the ability of the parent to recognize deviant behavior being committed by the juvenile. Parents who are unaware or who do not recognize an act as deviant will not provide limits or guidelines on the acceptability of such behaviors and will therefore fail to instill self-control. The third requirement is for deviant behavior to have consequences or associated punishment. If disapproval or other forms of negative consequences do not accompany the deviant act, the juvenile will have no incentive to delay gratification and build self-control. A necessary condition for these

steps to take place is that the parent must care about and take an active interest in the well-being of the child. Without such an interest, it is unlikely that the parent will exert the necessary effort to accomplish the three required tasks.

Studies that have examined the impact of parenting on self-control have found fairly consistent support for the importance of these practices. The most commonly studied elements are monitoring and punishments. Various forms of parental supervision or monitoring of their children's behaviors have been found to increase self-control (Hay 2001; Polakowski 1994; Pratt, Turner, and Piquero 2004; Unnever, Cullen, and Pratt 2003). Studies have also shown that the self-control of the child increases with consistent discipline (Gibbs and Giever 1995; Gibbs, Giever, and Martin 1998; Unnever, Cullen, and Pratt 2003). These studies, along with other recent work examining a range of parenting and family influences on self-control (Burt et al. 2006; Gibbs et al. 1998; Hay 2001; Hope and Chapple 2005; Hope, Grasmick, and Pointon 2003; Perrone et al. 2004), have demonstrated that parenting and family structure have important impacts.

One consistent characteristic of families with difficulty in adhering to these basic requirements for successful creation of self-control is parental involvement in crime and deviance. The connection between criminality of parents and problem behavior in children has been long established (Robins 1966; West and Farrington 1977; Wilson and Hernstein 1985). Most of these arguments are based on a social learning perspective, where it is assumed that children who are exposed to criminal parents imitate and model this behavior in their own lives. Studies of smoking among juveniles do find that if parents smoke, or do not explicitly disapprove of smoking, the child is more likely to both experiment with smoking and become a regular smoker (Brook et al. 1997; Chassin et al. 1986; Nofziger and Lee 2006; Pederson, Baskerville, and Lefcoe 1984). However, the learning perspective implies that criminal parents, at least to some extent, intentionally teach the attitudes or skills necessary to commit crime to their children. However, studies indicate that parents with a criminal history are no more likely to approve of criminal activity by their children as are noncriminal parents (West and Farrington 1977). A less often examined possibility within the criminological literature is that the transmission of crime occurs through genetic means. A recent study examining the development of self-control using a sample including twins, finds that parenting has only a small effect on the prediction of self-control, and suggests that genetic as well as socialization examinations of the origins of self-control must be examined (Wright and Beaver 2005).

For the general theory of crime, the relationship between parental and children's criminality is explained by the self-control of the parents. Those parents that are involved in deviant activities are by definition lacking in self-control. Parents without self-control are unlikely to be able to teach this characteristic to their children. Effective parenting requires a great deal of effort from the adults. Parents must regularly put aside their own desires and address the needs of their children. These requirements are not appealing to a parent who has low self-control. By this argument, parents who are criminal themselves (and thus have low self-control) would be expected to fail to adequately supervise, recognize, and correct deviance in their children. This assumption is supported by past research that indicates parents who have a criminal record employ a style of punishment that, if it occurs at all, "tends to be easy, short-term, and insensitive—that is, yelling and screaming, slapping and hitting" (Gottfredson and Hirschi 1990:101). In addition, parents who are involved in crime or deviance are less likely to recognize deviant behaviors as problems (Laub and Sampson 1988), and they also ignore the problem behaviors when they occur (Patterson and Dishion 1985). Thus, the general theory of crime explains the intergenerational transmission of deviance through the mechanism of the failure of the parents to instill adequate self-control in their children.

In spite of the centrality of the relationship between parental and children's self-control, this is a virtually untested component of the general theory of crime. In part, this is due to the lack of data that include information on both parents and children. This study is an attempt to begin examining the importance of parental self-control on the development of self-control in children. Specifically, this study uses data from the National Longitudinal Survey of Youth (NLSY) 1979 Cohort and Child and Young Adult surveys to test the direct relationship between the self-control of the mother and her child. Also examined is how parenting practices serve as the link between the self-control of the mother and her children.

## Hypotheses

A series of specific hypotheses are tested in this study to establish the relationship between parental self-control and the self-control of the child. The first step is to establish whether a relationship exists between mothers' and children's self-control. The second is to examine the mechanisms through which this relationship occurs. As a final step, whether the children's self-control does in fact predict criminal behavior later in life is included. The specific hypotheses are listed below.

*Hypothesis 1:* Mothers with low self-control will produce lower self-control within their children.

*Hypothesis 2:* Mothers' self-control will influence their parenting practices.

*Hypothesis 2a:* Mothers with low self-control will be less likely to provide supervision, in the form of consistent expectations and monitoring television viewing.

*Hypothesis 2b:* Mothers with low self-control are more likely to use punishments that require little effort such as ignoring or spanking the child, or suspending privileges or isolating the child, than they are to talk to the child.

*Hypothesis 3:* The parenting practices of the mother will influence the self-control of the child.

*Hypothesis 3a:* Supervision of children's behavior will increase self-control.

*Hypothesis 3b:* Punishments focused on communication will produce higher self-control whereas other methods will decrease self-control.

*Hypothesis 4:* A childhood measure of self-control will predict future criminal behavior.

## Data and Methods

In order to test these hypotheses, this study utilizes data from the NLSY, a nationally representative panel survey sponsored by the U.S. Department of Labor. The NLSY started in 1979 with a sample of 12,686 men and women between the ages of 14 and 21 years. The data were constructed to oversample for economically disadvantaged Whites as well as for Hispanic and African American respondents. This group was annually interviewed between 1979 and 1994; and on a biannual basis since that time. This cohort makes up the NLSY79 data. Interviews are dominated by questions relating to work, school or other training, and military experiences, but also include a wide range of life experiences, such as the respondents' marital histories, use of drugs and alcohol, and their involvement in criminal activities. Starting in 1986, separate interviews were conducted to collect information about the children of the women in the original NLSY79 cohort. Information about the children has been collected from the mothers every other year. Data are also collected by the interviewer assessing the cognitive ability, motor and social development, and assessments of the home environment. In addition, children who are between the ages of 10 and 14 years complete a self-report questionnaire about their activities and attitudes. These data make up part of the National Longitudinal Survey of Youth, Child Data

(NLSY-C hereafter). Finally, since 1994, self-reports have been collected from children who are 15 years or older by the end of the survey year and make up the National Longitudinal Survey of Youth, Young Adult Data (NLSY-YA hereafter). This study uses the NLSY79 data from the year 1984 to assess the mother's self-control and for basic control variables, data from the mother's supplements of the NLSY-C to measure parenting practices and the mother's assessment of the child's self-control, and in the final step I use the NLSY-YA to measure the criminal activity of the child.

The final sample used in these analyses was restricted in several ways for both theoretical and empirical considerations. First, a number of cases were eliminated that had missing data on demographic variables such as race and sex, as well as cases missing multiple items that are used to measure the self-control of the child. Second, the data about parenting and the child's self-control come from the mother's supplements and are thus dependent on the mother having regular contact with her child for accurate reports. Therefore, the final sample only includes those children whose primary residence was with the mother at the time the parenting items were measured. Third, because this study is examining how parenting processes influence self-control, to establish a clear causal order it was necessary to focus on two different periods of the children's lives. Different modules were given to the mothers depending on the age of the child. One age range was 6 to just under 10 years old and the next age grouping was 10 to just under 14 years old. Therefore, the parenting practices of the mother were measured when the child was 6 or 7 years old, and the self-control of the child when the child was 10 or 11 years old. The specific waves used for each type of measure are discussed in more detail below. These restrictions left a final sample of 3,627 cases.

Table 1 provides the breakdown of several key demographic variables for this sample. The children are evenly divided by sex; 49 percent of the sample is Non-Hispanic and Non-Black, with almost 30 percent Black and 21 percent Hispanic. Therefore, the original oversample on Hispanic and Black racial groups has been maintained in the children. Most of the children were either first-born or only children (38 percent) or a second child (37 percent) with a small percent indicating large numbers of children in the family (2.9% indicated they were the fifth or later child). This table also shows the net family income, as reported by the mothers for the year the child was 6 or 7 years old. The socioeconomic status of this sample is somewhat low, with 28 percent reporting their net family income was less than US\$20,000 in the previous year. In comparison, only 10 percent reported making US\$80,000 or more. The final piece of information on

**Table 1**  
**Demographic and Family Characteristics of the Final Sample**

Characteristic	Valid (Percent)	Characteristic	Valid (Percent)
Sex of child		Net family income (\$)	
Male	50.7	0 to 9,999	11.8
Female	49.3	10,000 to 19,999	16.2
Race		20,000 to 29,999	16.5
Hispanic	20.8	30,000 to 39,999	16.0
Black	30.0	40,000 to 49,999	12.8
White	49.3	50,000 to 59,999	7.4
Birth order of child		60,000 to 69,999	5.7
First or only	37.9	70,000 to 79,999	3.7
Second	36.8	80,000 +	10.0
Third	16.9	Year child 10 or 11	
Fourth	5.4	1992	5.5
Fifth	1.8	1994	18.4
Sixth	0.7	1996	22.5
Seventh	0.3	1998	21.8
Eighth or higher	0.1	2000	16.1
		2002	15.7

Table 1 is the wave of data collection in which the child was 10 or 11 years old. This information is provided to show that this sample includes children in all the waves under consideration.

### Analytic Strategy

This study proposes to examine the relationship between mothers' self-control, a variety of parenting practices, and the juveniles' self-control and subsequent criminal involvement. Structural equation models (SEM) are used due to the fact that the key measures of self-control for both the mother and child are latent variables. The ability to simultaneously measure these latent concepts as well as estimate the coefficients between the variables in the structural model is more desirable than bivariate tests of association (Bollen 1989). The AMOS (Analysis of Moment Structures) program is utilized to generate measurement models as well as the structural relationships between the latent concepts.

Several indicators of model fit are generated by AMOS. Previous studies utilizing SEM to test self-control have used a wide variety of these measures

to demonstrate model fit (Gibbs, Giever, and Higgins 2003). Most of these measures produce very similar results. Therefore, this study provides the statistics for four different measures: chi-square ( $\chi^2$ ), comparative fit index (CFI), relative fit index (RFI), and the root mean square error of approximation (RMSEA). Although the  $\chi^2$  statistic is a common measure of whether to reject the null hypothesis that the model fits the data, it is very sensitive to sample size and non-normality. Because the sample in this case is large, the  $\chi^2$  is not the best test of model fit. However, it is included in the results along with other, more appropriate fit statistics. The CFI estimates the fit of the model accounting for the degrees of freedom and the noncentrality of the parameters (Bentler 1990). The RFI is a commonly used measure that compares the hypothesized model to a baseline model of no associations (Bollen 1986). For both the RFI and the CFI, values close to 1 indicate a very good fit and generally any measure above .90 is considered a good fit (Gibbs et al. 2003). The final statistic included is the RMSEA (Browne and Cudek 1993), which is based on the discrepancy of the population and is capable of being estimated for complex models. Because the models in this study have more than 100 parameters to estimate, this measure is included in the results. Generally, a good fit using the RMSEA is indicated at a value of .05 or less.

The NLSY data are ideal for examining the assumption in self-control theory that parents' self-control predicts their children's self-control due to the fact that data are available on both mothers and their children. However, there are also limitations with these data, as with any use of secondary data. The primary limitation in this case is with the available measures of parenting and the measures of self-control.

## Measuring Self-Control

Though Gottfredson and Hirschi provided a clear description of self-control, how to operationalize this concept was initially left to the discretion of researchers attempting to test the theory. One of the earliest, and by far the most common, approach to measuring self-control has been to use a series of attitudinal items designed to tap some or all of the characteristics identified as being related to this trait (Brownfield and Sorenson 1993; Burton, Cullen et al. 1998; Burton, Evans et al. 1999; Gibbs and Giever 1995; Grasmick et al. 1993). Although such scales have consistently produced results that tend to support the theory, there are potential concerns with self-reports of such attitudes. The primary issue is the possibility that self-control may in fact influence the validity of attitudinal survey items.

For example, the statement "I like to do risky things" is often included in attitudinal measures of self-control. However, a person with low self-control may interpret the risk of various activities very differently than a person with high self-control. In fact, it has been shown that responses to the scale developed by Grasmick et al. (1993), the most commonly used attitudinal scale in empirical tests of the theory (see Pratt and Cullen 2000), are influenced by the respondent's self-control (Piquero, MacIntosh, and Hickman 2000). Therefore, measures of self-control that are restricted to self-reports of attitudes may not be ideal even though they have routinely predicted criminal and analogous behaviors (Pratt and Cullen 2000).

In contrast to this approach, Hirschi and Gottfredson (1993) argue that the best means of assessing self-control is with behavioral measures and ideally measures that are based on independent observations.<sup>1</sup> Whereas one study to date has employed independent measures, through the failure to wear a seat-belt observed at a Driving Under the Influence traffic stop (Keane et al. 1993; Polakowski 1994), other studies have included self-reports of behaviors in measures of self-control (Nofziger 2001; Polakowski 1994). This approach has been subjected to a number of criticisms, the most common of which is a charge of tautology. This argument is based on the idea that using behaviors to measure the independent variable (self-control) fails to adequately differentiate between the independent variable and what it is trying to predict. In other words, the concern is that the behavioral measures of self-control are simply a subsection of measures that tap a larger measure of deviance that also incorporates the dependent variable of criminal behaviors. In fact, Akers (1991:204) specifically stated that he believed self-control and the "propensity to commit crime" are "one and the same." In response to such charges, Hirschi and Gottfredson (1993) submit that defining self-control as the propensity to commit crime does not accurately reflect their conceptualization of this characteristic. Instead, self-control is the "barrier that stands between the actor and the obvious momentary benefits crime provides" (Hirschi and Gottfredson 1993). They also agree with Akers (1991:204) that the solution to any potential charge of tautology is to develop measures of self-control that are theoretically and logically independent of crime. Although throwing tantrums, smoking, unsafe sex, or employment problems may all be indicators of low self-control, they are not acts of force or fraud, the definition of crime employed by Gottfredson and Hirschi (1990:15), nor are they considered as highly deviant in most of the literature.

Even if indicators of self-control are logically, or even empirically, distinct from the dependent variable of interest, there is still the question whether they are really measuring self-control. This concern may exist

regardless if attitudinal or behavioral measures of self-control are used. Essentially, this questions the validity of any measure of self-control. However, this is not a problem unique to the general theory of crime. Other theories of crime also struggle to measure their concepts in a way that satisfies critics. Does unemployment really, or at least consistently, produce "strain" for all individuals? How can we measure whether someone has "learned" definitions favorable to crime? Such questions arise whenever a concept is an internal characteristic, tendency, or process. All theories of crime are thus subject to the same challenges in demonstrating the validity of the operationalization of their key ideas. The only reasonable course of action for testing any theory is thus to select indicators that are theoretically consistent with the concepts and attempt to show that they are empirically distinct from alternative ideas or the dependent variable being predicted.

Although the debate about the most acceptable way of measuring self-control continues, more important is the finding that regardless of how this concept is operationalized, it regularly predicts various types of deviant, criminal, and analogous behavior (Pratt and Cullen 2000). Therefore, both to be consistent with Gottfredson and Hirschi's recommendation (1993), and due to the available information in the NLSY data, the measures of self-control draw on self-reports of behaviors of the mother and assessments of the child's behaviors and characteristics made by the mother. For both measures of self-control, items were selected for their theoretical consistency with the concept of self-control. Thus, the items in some way indicate the tendency to seek immediate and easy gratification, engage in high-risk behaviors, or indicate the subjects' level of temper, impulsivity, and self-centeredness.

Although these measures are conceptually consistent with self-control, there is still the potential concern that they do not actually measure self-control but some other underlying concept such as deviance. Though it is impossible to unequivocally state that the theoretically driven selection of items do in fact measure the internal concept of self-control, it is possible to empirically eliminate the charge of tautology using the data in the current study. Prior to inclusion in the final structural models, the items that were expected to indicate self-control were subjected to a series of principal components factor analyses to empirically assess their relationship to the criminal activity of the relevant person. Therefore, the items creating the measure of the self-control of the mother were included in a factor analysis with measures of the mother's criminal activities (such as theft, robbery, assaults, and other violent acts), and the items utilized in the formation of the model of the self-control of the child were analyzed along with the criminal activities of the child. A final analysis compared the items

for the self-control of the mother with those relating to the self-control of the child to assess whether the mothers' reports of their children's self-control were simply a reflection of their own self-control. These analyses clearly showed that the criminality of the mothers and their children were separate from the items composing the self-control measures. In no case did any of the measures of self-control load on the same factors as the items indicating the individuals' involvement with criminal activities. In addition, the analysis for the mother's and child's self-control indicated that these were two clear and entirely separate factors.

This analysis demonstrates that, as much as is empirically possible to determine, the measures of self-control are in fact measuring self-control rather than an underlying tendency toward criminality or deviance. Therefore, the selection of these items is appropriate and well supported both empirically and theoretically. The specific items for both mother's and child's self-control are discussed in more detail below. These items were subjected to a series of measurement models using the AMOS software. Though there were no necessary adjustments for the self-control of the child, the mother's model was adjusted based on fit indices to allow for appropriate covariations between measurement errors for several items.

## **Mothers' Self-Control**

All the indicators of mothers' self-control are extracted from the 1984 survey of the NLSY79 cohort when the women ranged in age from 19 to 27 years. This year is prior to the beginning of the NLSY-C surveys. Therefore, even though many of these women might already have a child that will be included in later surveys, the measure of their own self-control is collected prior to any information being collected on their children. Though it is certainly possible that by the time these women have children they do not engage in the same specific behaviors used in this measure, self-control is a relatively stable trait. This means that the use of earlier indicators of self-control will still be an adequate measure of the difference in the relative levels of self-control between these women at later points of their lives.

The measure of mothers' self-control includes behaviors that are specifically discussed by Gottfredson and Hirschi as being logical outcomes of low self-control. According to these authors, low self control would "impede educational and occupational achievement, destroy interpersonal relations, and undermine physical health and economic well-being" (Gottfredson and Hirschi 1990:96). Therefore, indicators of success in relationships as well as sexual activity, changes in jobs, smoking, and problematic use of alcohol are

used to measure self-control for the mothers. Each of these measures is discussed in more detail below and listed in Appendix A.

The first indicators of mother's self-control are her smoking status and use of alcohol. Such substances provide "immediate, easy and certain short-term pleasure" (Gottfredson and Hirschi 1990:41), but at the risk of a variety of personal, health, and potentially legal consequences, and are therefore reasonable indicators of poorly developed self-control. How many times the mother engaged in binge drinking in the past month (having six or more drinks at one time), and having alcohol use interfere with work or school (0 = *no*, 1 = *yes*), are coded to indicate poorer self-control. The individual's smoking status is a 4-point scale ranging from *never* (0), being a past smoker (1 = *more than 6 months ago* or 2 = *within the past 6 months*), to being a current smoker (3 = *within the past month*).

Difficulty maintaining a stable job is also a potential indication of poor self-control (Gottfredson and Hirschi 1990:163–5). Individuals lacking in self-control would have difficulty adhering to the requirements of a standard work environment, or may change occupations in an attempt to find more pleasurable or exciting jobs. Within the NLSY79, respondents were asked about the reasons they had changed jobs in the past year. Reasons beyond the control of the respondent, such as a lay off or seasonal work, or leaving due to pregnancy or family concerns were not considered as indicators of poor self-control. However, quitting for no specific reason or being fired are theoretically consistent with low self-control. Therefore, two measures included in the model for mother's self-control are how many times the mother had quit her job for no specific reason or been fired in the past year.

A final type of items included in mother's self-control relates to her sexual activities and relationships. Each year the respondents indicate their current marital status and any changes in this status. Difficulty maintaining relationships is one type of outcome specifically discussed by Gottfredson and Hirschi (1990:96). Therefore, a variable indicating the total number of spouses the respondent had by 1984 was included (0 = *one or none*, 1 = *two*, 2 = *three or more*). In addition, engaging in early sexual intercourse and not engaging in practices that would prevent unwanted pregnancies also show lack of consideration of long-term consequences of behaviors. A measure for the number of abortions the respondent had by 1984 was provided in the data and ranged from 0 to 5. To measure early sexual activity, a measure was created to indicate whether the individual first had sexual intercourse comparatively late or early. If the reported age was older than one standard deviation above the mean age for the sample (mean = 17), this variable was coded as 0. An age within one standard deviation of the mean was coded as

1, and younger than one standard deviation below the mean was coded as 2. However, because some respondents reported having first experienced sexual intercourse at very young ages (as young as 1-year-old), there was some concern that very young ages may not be a measure of self-control but rather abuse. Therefore, if the respondent reported having sex younger than 13 years of age (a total of 30 cases), this was coded as missing data for this variable.

## Children's Self-Control

Although self-control is something that may continue to develop in school (Gottfredson and Hirschi 1990; Turner, Piquero, and Pratt 2005) or even later years, the most important period of development is thought to be in early childhood. Gottfredson and Hirschi state self-control develops "in the first six or eight years of life, during which time the child remains under the control and supervision of the family" (1990:272). Therefore, the self-control of the child may not be stable until after this time period. For this study, self-control of the children was compiled from the wave of data collection when the child was age 10 or 11 years. Theoretically, this is a period when this trait should be stable. Empirically the choice of these ages eliminated any potential overlap between the waves of data from which the parenting practices used to predict self-control were collected. In order to have a large sample, data were collected on children who were 10 or 11 years old at any wave of data collection between 1992 and 2002.

For the measure of the children's self-control, items from the Behavior Problem Index (BPI) that are consistent with the concept of self-control are used. The BPI is a scale of 28 items that is used to measure a range of childhood behavior problems of children age 4 years and older (Peterson and Zill 1986). In each wave of data collection for the NLSY-C, the mothers report how true each statement is in relation to their child. The mothers could indicate that the statement was "often true," "sometimes true," or "not true" about their child. For these analyses, all items were coded to indicate lower self-control (*always true* = 3). Although a recent study utilizing the BPI scale included all the items in the measure of self-control (Turner and Piquero 2002), many of the items do not clearly fit the theoretical concept. For example, several items ask the mothers to report on the child's feelings of self-worth (feels worthless or inferior), or psychological states (is unhappy, sad, or depressed). In addition, several items could conceivably be argued to be actual crimes (bullying or cheating). This study only included items that were consistent with the concept of self-control and could not be

interpreted as crimes. Therefore, a total of 11 items from the BPI were used to assess the child's self-control (see Appendix A for full list of items).

## Parenting Practices

The mechanism that is thought to link mothers' and children's self-control is different parenting practices. According to the theory, the development of self-control is dependent on monitoring behaviors of children, recognizing when these activities are deviant, and adequately correcting such behaviors. Ideally, a test of the relationship between maternal and child self-control would examine all three forms of parenting practices. However, operationalizing parental recognition of deviance is problematic. Possible measures of lack of recognition suggested by Gottfredson and Hirschi (1990) are failing to require the child to complete homework, or ensuring the child attends school. Although such measures may be indicators of recognition, such data are not available within the NLSY-C for the ages of the children under consideration. However, there are measures for both supervision and discipline. Though only having two pieces of the equation for effective parenting may be a concern, past findings have indicated that the most important elements in effective parenting are in fact supervision and punishment (Hay 2001; Larzelere and Patterson 1990).

For this study, parenting practices are measured when the child was 6 or 7 years old in each wave of the NLSY-C between 1988 and 1998. These ages are seen as an appropriate range because this is still a period when self-control is being developed and when parents have a great deal of control over the activities of their children. Therefore, measures of both supervision and punishments are developed for each child to determine the relationship between mothers' self-control, parenting, and children's self-control.

Supervision of behaviors has been measured in a number of different ways in the literature. Some studies have employed wide definitions that include how parents manage their child's activities through setting rules and actively communicating with the child (Gibbs et al. 1998), whether parents know the child's friends and are clear about rules (Hay 2001), or the child's own reports of whether the parent knows where he or she is when he or she is away from home or knows his or her friends (Hope and Chapple 2005; Hope et al. 2003). For the current study, supervision is operationalized as parents having consistent expectations for the child and discussing with the child the programs he or she watches on television (see Appendix B).

There are two sections in the NLSY-C that ask the mothers what form of punishments they utilize in different scenarios. One set of these punishments is potentially more appropriate to older children as they relate to poor school performance. Therefore, punishments for this study focus on how the mothers indicate they would respond if their child got so angry with them they said things like "I hate you," or swore during a temper tantrum. A total of nine potential responses were presented to the mothers, who indicated whether they would use each of the practices. To determine if these items were distinct forms of punishment, these nine items were subjected to a principal components factor analysis. The results indicated that talking with the child, spanking the child, or ignoring the child were each their own unique factors. However, the other items all loaded on one factor that represented taking away a privilege or isolating the child in some way. These items were therefore combined as an additive scale that indicates the number of different types of such punishments used by the mother. This item has a range of 0 to 5 and a mean of 1.09.

### **Criminal Activity of the Child**

As a final step in the analysis, how well the self-control of the child at age 10 or 11 years predicts future involvement in crime is examined. Though there are a variety of measures of deviance in the different waves of the NLSY, the structure of this study limits the selection to the 2004 wave of the NLSY-YA data as this is after any year in which the self-control of the child is measured. Within this year, relatively few items were asked regarding the criminal activity or delinquency of the respondent and these were divided through a series of skip patterns into different age groups. Therefore, only item crosses. All respondents reported whether they had ever been convicted of any charges. Although this is a relatively serious measure of criminal activity, if parenting and self-control can explain this form of criminal involvement, it is likely that it also can explain lower levels of more common problematic behaviors.

### **Exogenous Control Variables**

Several controls for the demographic characteristics of the child and family structure are included in the model. Although the impact of these characteristics on self-control or offending may be mediated, or at least moderated, by parenting practices, such an examination of the relationship

between these characteristics and parenting is beyond the scope of the current project. However, to control for any such effects, the sex (1 = *male*, 2 = *female*), race, and birth order of the child are included in the model as well as family characteristics of net family income and the ratio of children to adults in the household.

Three dummy variables for the three groups of Non-Black Hispanic (*Hispanic* = 1), Non-Hispanic Black (*Black* = 1), and Non-Hispanic and Non-Black respondents (*White* = 1) were created. For the purposes of this study, the White group was used as the reference category. The birth order is included as a control because whether the child is oldest, youngest, or somewhere in the middle may have direct consequences on how well self-control is developed. Parents may radically change their styles between children, be less able to monitor the activities of later children, or older siblings may take on parenting roles. Similarly, having multiple adults in the household may dramatically change the experience for the child. However, the number of adults is not the only important consideration. Having two adults may be very different in a household with one or two children as compared with a household with five children. Therefore, the number of reported persons under the age of 18 years in the household was divided by the number of adults to develop a measure of the child-to-adult ratio in the household. This variable ranged from .14 to 8, with a mean of mean 1.55 (standard deviation .96). This could indicate that the average household has more children than adults. However, the modal category was one indicating that, for the majority of the sample, there were equal numbers of adults and children in the household.

For analysis in AMOS, any variables that may be correlated need to specifically be allowed to correlate in the model. Therefore, both race variables are allowed to correlate with each other and with the family income in the models. Because the birth order and the number of children in the household are logically related, these items were allowed to correlate in the models. Finally, a preliminary examination of the Pearson correlations between these demographic variables indicated that the child-to-adult ratio may also be correlated with the race of the child and family income. Thus, these variables were also allowed to correlate in the estimated structural models.

## Findings

Measurement models for the mother's self-control and the child's self-control were conducted to develop well-fitting and theoretically consistent measures. Table 2 provides the full list of items and the standardized maximum

**Table 2**  
**Standardized Maximum Likelihood Estimates (MLE) for**  
**Measurement Models of Mother's and Child's Self-Control**

Mother's Self-Control	MLE	Child's Self-Control	MLE
Abortion	0.28***	Argues	0.64***
Spouses	0.12**	DifConc	0.55***
EarlySex	0.37***	DisobH	0.63***
Binge	0.41***	NtSorry	0.45***
Smoke	0.58***	Impulsive	0.66***
AlcWrk	0.17***	Restless	0.55***
AlcSch	0.22***	Stubborn	0.67***
QuitJob	0.08**	Temper	0.68***
FiredJob	0.09 <sup>a</sup>	Attention	0.49***
		DisobSch	0.47***
		Mood	0.55 <sup>a</sup>
Chi-square	221***	Chi-square	1,120***
CFI	.980	CFI	.991
RFI	.979	RFI	.991
RMSEA	.047	RMSEA	.078

Note: CFI = comparative fit index; RFI = relative fit index; RMSEA = root mean square error of approximation.

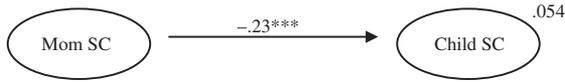
a. Regression weight set to 1 in model.

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

likelihood estimates (MLE) and fit statistics for these two models. All 11 items of child's self-control were highly significant predictors of this latent variable ( $p < .001$  for all indicators), and the RFI and CFI were both .991, indicating a very good fit with the data. In addition, the fit indices indicated no further modification, such as correlated error terms, was necessary. For the model of mother's self-control, fit indices indicated that some of the observed indicators had correlated error terms. Therefore the error terms for the two items for alcohol use causing problems at home or at work were allowed to correlate. Similarly, correlations between the errors of the two items related to sexual activity (early sex and abortions), and the errors for being fired or quitting were estimated. The final measurement model indicated that all nine indicators were significantly related to the latent variable ( $p < .01$  or  $p < .001$ ), and the RFI and CFI were .980 and .979, respectively, indicating a good fit with the data.

To test the first hypothesis in this study, and establish the need to examine the role of parenting in predicting self-control, a simple model between

**Figure 1**  
**Maximum Likelihood Estimates of Structural Model between Mother's Self-Control and Child's Self-Control at Age 10 or 11 Years**



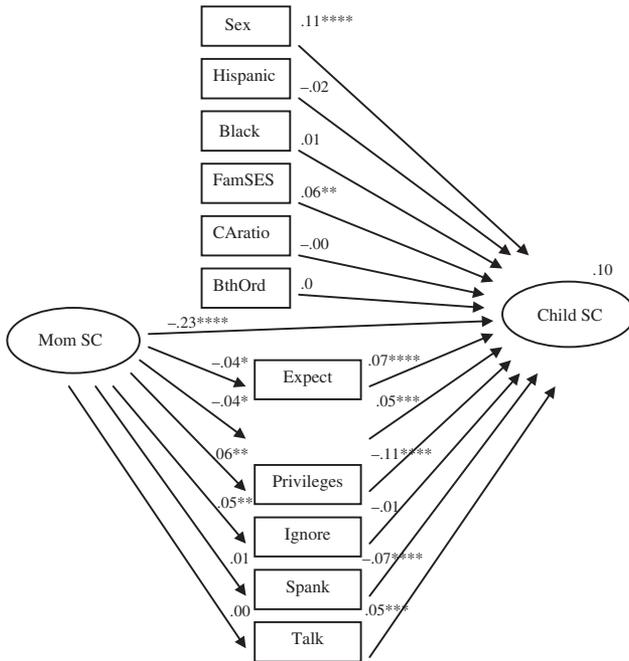
Note: Sample  $N = 3,627$ ,  $df = 166$ , chi-square =  $1,527^{***}$ ; relative fit index = .989, comparative fit index = .990, root mean square error of approximation = .047; SC = self-control.  $^{***}p < .001$ .

mother's self-control and child's self-control was run. The standardized MLE for the structural path between mothers' and children's self-control is displayed in Figure 1. As hypothesized (Hypothesis 1), mother's self-control did have a significant effect on the child's self-control. Mothers with low self-control produce lower self-control in their children. The magnitude of this effect is .23 ( $p < .001$ ) and this single predictor model explains 5.4 percent of the variation in the child's self-control. This first step in the analysis thus lends support to the claim in the general theory of crime that parental self-control does affect the development of self-control in children. The next steps examine the role of parenting to explain this association.

Figure 2 shows the structural relationships between the two measures of self-control and the parenting practices, as well as the paths from the exogenous control variables to the child's self-control. The standardized MLE for all the relationships in the model are displayed in Table 3 and the relevant covariations and correlations are provided in Table 4.

Hypothesis 2 predicts that the self-control of the mother will predict her choice of parenting practices. The first part of this hypothesis (Hypothesis 2a) involves the relationship between mother's self-control and her supervision of the child whereas the second part (Hypothesis 2b) examines the punishments used in the case of a tantrum. As these results indicate, the two variables related to how the mother supervises her child are marginally significant ( $p < .10$  in two-tailed test). Setting clear expectations and discussing the television that their children watch both require some level of consistent effort and thus, as expected, are less likely among mothers with poor self-control. Thus, although only significant at the  $p < .10$  level, there is some indication of support for Hypothesis 2a. The relationship between mother's self-control and punishment is not as clear. The choices to spank or talk to the child in response to a tantrum were not related to the mother's

**Figure 2**  
**Standardized Maximum Likelihood Estimates of Full Structural Model of the Effect of Mothers' Self-Control on Parenting Practices and the Subsequent Self-Control of the Child.<sup>a</sup>**



Note: Sample  $N = 3,627$ ,  $df = 447$ , chi-square = 4,363\*\*\*\*; relative fit index = .973, comparative fit index = .979, root mean square error of approximation = .049; SC = self-control, SES = socioeconomic status.

a. This model consists of a total of 113 parameters. This includes correlation estimates between the race of the child with the family socioeconomic status and adult-to-child ratio, a correlation between the child-to-adult ratio and the birth order of the child, and covariation between the error terms for various groupings of the indicators of mother's self-control.

\* $p < .10$  \*\* $p < .05$  \*\*\* $p < .01$  \*\*\*\* $p < .001$ .

self-control. However, lower self-control of the mother does increase the possibility that she will ignore a tantrum as well as that she will take away privileges or isolate her child ( $p < .05$ ). These results indicate support for only some of the expected relationships between the mother's self-control and parenting practices that are found in this analysis.

**Table 3**  
**Standardized Maximum Likelihood Estimates**  
**(MLE) of all Variables in Full Model**

Variable	MLE	Variable	MLE
Mother's self-control		Child's self-control	
Abortion	.28****	Argues	.64****
Spouses	.12***	DifConc	.55****
EarlySex	.39****	DisobH	.63****
Binge	.40****	NtSorry	.45****
Smoke	.58****	Impulsive	.66****
AlcWrk	.17****	Restless	.55****
AlcSch	.23****	Stubborn	.67****
QuitJob	.07***	Temper	.68****
FrdJob	.09 <sup>a</sup>	Attention	.50****
		DisobSch	.47****
Mother's self-control on parenting		Mood	.55 <sup>a</sup>
Expect	-.04*	Parenting on child's	
MonitorTV	-.04*	self-control	
Privileges	.06**	Expect	.07****
Ignore	.05**	Privileges	-.11****
MonitorTV	.05***	Ignore	-.01
Spank	.01	Spank	-.07****
Talk	.00	Talk	.05***
Mother's self-control on child's self-control			
Direct on child's self-control	-.23****	Controls on child's	
Total on child's self-control	-.24****	self-control	
		Sex Child	.11****
		Hispanic	-.02
		Black	.01
		FamilySES	.06****
		CAratio	.00
		BrthOrd	.00

Note: CA = child to adult; SES = socioeconomic status.

a. Regression weight set to 1 in the model so no significance level estimated.

\* $p < .10$  \*\* $p < .05$  \*\*\* $p < .01$  \*\*\*\* $p < .001$ .

The relationship between parenting practices and the child's self-control provides somewhat more support for the third set of hypotheses. Children are more likely to develop self-control when parents supervise their activities, as demonstrated by the significant coefficients for both expectations

**Table 4**  
**Estimates of Correlations or Measurement Error**  
**Covariances in Full Model**

Mother's Self-Control Demographics				
Covariation of errors	EarlySex	AlcWrk	QuitJob	
Abortions	.028***			
AlcSch		.003***		
Fired Job			.004***	
Correlations	Black	FamSES	CAratio	BrthOrd
Hispanic	-.335***	-.106***	-.013	
Black		-.099***	.168***	
FamSES			-.051**	
CAratio				.509***

Note: CA = child to adult; SES = socioeconomic status.

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

and monitoring television (Hypothesis 3a). Hypothesis 3b again has mixed support but more consistent findings than the relationship between the mother's self-control and punishments. The child's self-control is enhanced when the parents talk to a child who is throwing a tantrum. In contrast, removing privileges or isolating the child as well as spanking the child both decrease the self-control of the child. In this model, the only parenting variable that is not significantly related to the self-control of the child is having the mother ignore a tantrum. Therefore, the majority of the results indicate support for all of Hypothesis 3.

One additional set of relationships in this model is between the exogenous control variables and the self-control of the child. Only two of these relationships were significant. Being a girl was significantly and positively associated with higher self-control of the child and families with higher net income produce higher self-control in their children. Therefore, birth order, child-to-adult ratio, or the child's race had no impact on self-control.

These analyses indicate that the effect of mother's self-control is partially indirect through the types of punishments used. The direct effect of mother's self-control on child's self-control is  $-.227$  in the full model, and the indirect effect through the parenting items is  $-.012$ , for a total of  $-.239$ . Although the indirect effect is not large, it does indicate that understanding how mothers punish children adds to our understanding of how mothers' and children's self-control are related. In addition, because there is still a significant direct effect of mother's self-control, this indicates that the

forms of parenting examined in this study are not the only mechanisms that account for the intergenerational transmission of self-control.

Though the primary relationship of interest in this study is between maternal self-control, parenting practices, and child's self-control, as a last step in the analysis the criminal involvement of the child was examined. This model includes paths between the exogenous controls and the criminal activity of the child as well as between the child's self-control and criminal activity.<sup>2</sup> In this model, many of the structural relationships between the self-control of the mother, parenting, and the self-control of the child remained the same as the previous model. Mothers with lower self-control are significantly more likely to take away privileges, ignore tantrums ( $p < .05$ ), as well as marginally less likely to have clear expectations and discuss the child's television programs ( $p < .01$ ). Similarly, the child's self-control is still significantly predicted by all of the parenting practices other than ignoring tantrums. In addition to confirming these relationships, this analysis shows that the self-control of the child at age 10 or 11 years is a significant predictor of their criminal activity 4 to 12 years later. A 1-unit change in the child's self-control decreases his or her chance of being convicted of a crime by .105 ( $p < .001$ ) net of all other controls. The only other significant predictors of the respondent having a criminal conviction in 2004 is his or her sex and the child-to-adult ratio in the household at age 6 or 7 years. Being female decreases the respondent's chance of having a criminal conviction by .091 ( $p < .001$ ), and an increase in the ratio of children to adults by 1 unit increases having a reported conviction by .085 ( $p < .001$ ). The overall fit statistics indicates that this is a good model (RFI = .97, CFI = .98, RMSEA = .05).

## Discussion and Conclusion

The goal of this project was to provide a first test of a key component in the general theory of crime. This theory assumes that the self-control of the juvenile, and his or her subsequent offending, is dependent on parental self-control. However, this relationship has not been previously tested. The findings of this study demonstrate that low self-control in mothers does in fact significantly predict low self-control in their children. In addition, the parenting practices used by the mothers are, to some extent, both products of mothers' self-control and predictors of children's self-control. However, the relationship between mothers' self-control, parenting, and children's self-control predicted by the theory is not fully supported.

Consistent with past studies, several forms of supervision are shown to predict the juvenile's self-control. However, the relationship between the mothers' self-control and these same supervision practices is marginal. This could be in part due to the limited forms of monitoring available for examination. Whereas consistent expectations for helping around the house and discussing television with the child are important, more direct supervision items, such as knowing the child's friends and knowing where he or she is when he or she is away from home, may be more consistent with the concept of supervision. However, these types of monitoring items are not included in the NLSY-C until the 1996 wave of data. To maintain the causal order structure in this study, supervision needed to be assessed during the formative years of self-control and thus only two waves of data collection could be used that would include these alternative supervision items, leaving too few cases for the estimation of the proposed model. Use of such measures may demonstrate even stronger support for the relationship between parental self-control and how well mothers are able to supervise their children.

Beyond the effects of supervision, this study was also able to demonstrate the connection between mothers' self-control, punishments, and children's self-control. Gottfredson and Hirschi contend that "explicit disapproval of unwanted behavior" (1990:100) would be an effective form of punishment. Therefore, it was expected that talking with the child, as a means of expressing disapproval of the behavior, would significantly improve self-control. This in fact was the case in this study. However, it was also expected that a parent with low self-control would be significantly less likely to use this type of response to a tantrum. It is expected that those with low self-control respond to irritations or frustrations with physical rather than verbal means (Gottfredson and Hirschi 1990), so talking to a child requires the parent to exercise a substantial level of control. However, there was no significant relationship between the mother's self-control and whether she would talk to a child who is throwing a tantrum in these analyses.

In contrast to the effects of talking with the child, the use of corporal punishment in the form of giving a spanking is expected to result in negative outcomes, and hence lower self-control. Use of physical punishment at home is argued to serve as a model for violence, and the "preponderance of empirical evidence supports the claim that all spanking, under all conditions, has harmful consequences" (Benjet and Kazdin 2003, pp. 200-201). In this study, the negative effects of spanking were again demonstrated. Children who were spanked at age 6 or 7 years had lower self-control at age 10 and 11 years. In spite of such findings, mothers with low self-control may turn to spanking due to the immediate gratification it produces. One of

the most consistent findings in the literature is that this form of punishment does exact immediate compliance (Benjet and Kazdin 2003; Gershoff 2002; Larzelere 2000). In spite of this logical expectation, the mothers' self-control was not related to this form of dealing with a tantrum.

A final finding in this study that was unexpected was related to the mother ignoring a tantrum. Although it was predicted that mothers with low self-control would ignore such behavior, because it is clearly easier to ignore bad behavior than take any form of action, it was also expected that the failure to respond would decrease self-control. Ignoring the tantrum would fail to instill self-control in the child because no clear message that the behavior is unacceptable is being given and there are no consequences for the action. However, ignoring tantrums did not predict the self-control of the child. One possible reason for this lack of association is due to the fact that only 9 percent of the sample reported using this as a form of punishment.

One possible reason why these forms of parenting did not always have the effects as predicted is the nature of how these items were asked. First, these are not mutually exclusive categories. Therefore, the use of multiple forms of punishments may mask the independent effects of each of these acts. For example, the parent with low self-control who reports he or she may ignore the behavior may also indicate he or she would spank the child. The larger effect of spanking may hide any effect that ignoring the behavior may have on the child's self-control. Second, the different types of punishment are hypothetical rather than an actual report of what the parent has done. The parent may believe that he or she would respond to such a tantrum rationally, with calm discussion or an action such as grounding the child, but at the time of the event, actually do something else entirely.

An additional issue is the potential difficulty obtaining accurate reports for the measure for spanking. The literature on spanking indicates it more often considered appropriate, and actually used, on very young children, typically age 4 and under (Flynn 1998; Straus 1994; Straus and Mouradian 1998), and when used on older children, it is more detrimental (Larzelere 2000). Therefore, because the children are 6 or 7 years old at the time the punishment variables are measured, they are older than the normative use of spanking. The mothers with low self-control may have used spanking much more frequently in earlier periods of the child's life but have now moved to what may be considered more age appropriate punishments. In spite of this possibility, 32 percent of the mothers indicated they would spank a child who is 6 or 7 in the event of a tantrum. In addition to the possibility that spanking is not used on this age of children as often as it was at earlier ages, the use of spanking is something that substantially dropped

across the years included in this survey. For this sample, whereas 44 percent of the mothers responding in 1986 said they would spank their child if they threw a tantrum, this dropped to 35 percent by 1994, and to only 26 percent by 2004. Therefore, spanking appears to be used less commonly in more recent years and is thus potentially less influenced by the self-control of the mother than changes in the acceptability of corporal punishments. The other alternative of course is that spanking is used as much as ever, but the impression that spanking is undesirable may cause these mothers to say they would not spank their child even if they still do employ this practice.

A final problem with these punishment variables is that there is no information about the context of the use of these punishments. Whereas one mother may indicate that she talks to the child, she may in reality be yelling at the child. A parent who spansks the child out of frustration in the heat of the moment may be teaching a different lesson than one who uses a spanking in a less impulsive manner. Spanking on impulse versus in a controlled manner does have different outcomes for children's impulsiveness and anti-social behavior (Straus and Mouradian 1998). Therefore, it may be necessary to understand in greater depth the context of the choice of punishments to fully explicate the relationship between punishments and self-control.

The remaining direct effect of mothers' self-control on the self-control of children found in this study indicates that additional mechanisms, beyond the parenting items included here, need to be studied. Though some may argue this demonstrates a biological or inheritable self-control, I would suggest a further investigation into other forms of parenting not included in this model is warranted. In particular, an examination of the parenting practices at earlier, and later, points in the children's lives may be very important in explaining this relationship. Mothers who employed very poor practices early in their children's lives may have already set the pattern for the self-control of their child and be unable to modify it substantially in these later years. In addition, the self-control of the mother may influence her reports of her child's self-control, even though these items separate into their own unique factors in a principal components analysis. Therefore, alternative measures of the child's self-control that are independent of the mother may be desirable in further examining this relationship.

Although this study provides a vital first test of the relationship between parental self-control and the development of self-control in children, there are some important limitations. First, these data are limited to only mothers and their children. There is no corresponding information on fathers and their children or other adults in the household. Although primary care-taking is often the responsibility of mothers, the self-control of other adults involved

in the care of the child, or even who may be temporary or short-lived presences, may also play an important role in the development of self-control. In addition, it is possible that, even though self-control is considered to be relatively stable, the impact of specific parenting practices may vary at different ages. Not only may spanking be an age-specific punishment, but grounding a child or talking to a child may have different consequences at different ages, thus contributing differentially to self-control. Continuing to examine these parenting practices across different ages may further our understanding of how self-control develops in children.

Finally, this study does not test the relationship between the exogenous variables and the different parenting practices. Existing studies indicate the use and approval of corporal punishment varies across racial groups (Flynn 1996, 1998), which could in turn have an influence on the development of self-control. Similarly, a long history of research on gender socialization establishes very different parenting practices are used for boys and girls, and that gender differences in parenting do have consequences for delinquency (Blackwell and Piquero 2005; Hastings, Rubin, and DeRose 2005). If parents continue to excuse the behaviors of boys while restricting similar activities of girls, there will continue to be substantial gender impacts on self-control. In addition to these potential differences in parenting by race or sex, there are indications that this is an interactive process, with parenting differences for boys and girls varying by the race of the children (Hill and Sprague 1999). Although an examination of the complex relationships between various demographic and family structure characteristics with parenting is possible with the NLSY data, such an undertaking was beyond the scope of this project. However, it is expected that such an inclusion would not substantially influence the primary findings of the relationship between mothers' and children's self-control.

Although these limitations indicate some interesting future areas of research, they do not negate the importance of the findings in these analyses and the contribution this study makes to testing one of the core pieces of the general theory of crime. This study has provided the first confirmation that the self-control of parents does in fact influence the development of self-control in children.

## Appendix A

### Items Measuring Self-Control of Mother and Children

#### *Mother's Self-Control—Items from 1984 Wave*

Abortion	How many times had an abortion?
Spouses	Number of spouses/partners reported
EarlySex	Age first had sex
QuitJob	Number of times quit job in past year
FiredJob	Number of times fired from job in past year
Binge	Number of times binge drink in past month
AlcSch	Drinking ever interfered with school?
AlcWrk	Drinking ever interfered with job?
Smoke	Smoking status

#### *Child's Self-Control—Waves 1992–2002, Age 10 or 11*

Which statement describes the child's actions over the past three months?

1 = *often true*, 2 = *sometimes true*, 3 = *not true*

Mood	Child has sudden changes in mood or feeling
Argues	Child argues too much
DifCon	Child has difficulty concentrating, can not pay attention
Disobednt	Child is disobedient at home
NotSorry	Child does not seem to feel sorry after she or he misbehaves
Impulsive	Child is impulsive, or acts without thinking
Restless	Child is restless or overly active, cannot sit still
Stubborn	Child is stubborn, sullen or irritable
Temper	Child has a very strong temper and loses it easily
Breaks	Child breaks things on purpose or destroys his/her own or another's things
Attention	Child demands a lot of attention

## Appendix B

### Items Measuring Parenting

#### *Parenting—Waves 1988–1998, Age 6 or 7*

MonitorTV	When your family watches TV together, do you or your child's father (or stepfather or father figure) discuss the TV programs with him or her?
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*(continued)*

## Appendix B (continued)

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Expectations	(additive scale) How often is your child expected to... (1 = almost never, 2 = less than 1/2 the time, 3 = 1/2 the time, 4 = more than 1/2 the time, 5 = almost always) Make his or her own bed? Clean his or her own room? Clean up after spills? Pick up after himself or herself?
Sometimes children get so angry with their parents that they say things like "I hate you" or swear in a temper. Which action(s) would you take if this happened?	
Talk	Respond to temper tantrum by talking with the child
Spank	Respond to temper tantrum with spanking
Ignore	Respond to temper tantrum by ignoring it
Privileges	Respond to temper tantrum by the following: grounding give him or her a household chore sent to room for more than one hour take away his or her allowance take away TV or other privileges put child in a short "time out"

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## Notes

1. Recently, Hirschi has somewhat modified his position on the measurement of self-control. In a discussion of the relative merits of social and self-control theories, he argues that social bonds, and the inhibitions they create, are potentially the preferred ways to measure self-control (Hirschi 2004).

2. Due to space constraints, the figure and full estimates of this final model are not shown. However, they are available from the author upon request.

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