



Self-control, parental crime, and discipline across three generations

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ABSTRACT

The objective of this study is to examine the relationships between self-control, parental crime, and use of discipline across three generations. Data spanning 30 years from the National Longitudinal Survey of Youth, are analyzed using Structural Equation Modeling. This study focuses on whether different types of discipline used by parents predict the self-control of each successive generation. We also examine whether self-control and criminal activities of parents are predictive of parenting and resulting self-control of children. We find that discipline has a weak relationship to self-control but that parental crime and self-control do relate to the self-control of later generations.

KEYWORDS

Self-control; discipline; spanking; parental crime

Introduction

Self-control theory, also known as the general theory of crime, posits that individuals engage in crime and similar activities when they lack sufficient self-control to resist the temptation for immediate gratification of desires that result from these acts. Those who lack self-control are likely to be “insensitive, physical, risk-seeking, short-sighted, and nonverbal” (Gottfredson and Hirschi 1990:90). These traits lead the individual to be more likely to engage in impulsive behaviors without considering the potential long-term negative outcomes of their acts. Poor self-control would therefore result in higher involvement in deviant, criminal, and a wide range of analogous behaviors.

A great deal of research has tested self-control theory and, as a whole, there is support for the central claim of the relationship between self-control and problem behaviors (see meta-analyses and reviews by Duckworth and Kern 2011; Pratt and Cullen 2000). However, there are also a number of questions and critiques that remain. One area that has drawn attention is the development or causes of self-control. In their initial description of the theory, Gottfredson and Hirschi (1990:97) argued that effective parenting is the necessary requirement for producing children with self-control. Thus, most research examining the development of self-control has focused on parenting, with some attention being given to other important sources of socialization, such as peers and schools. A second branch of research has focused on biological causes of self-control (Beaver et al. 2009; Meaney 2001; Rutter 2012), or heritable personality traits that are similar to self-control (Connolly and Beaver 2014; Kochanska, Philibert, and Barry 2009).

While there are disagreements on the causes of self-control, there is a fairly strong connection between the self-control of parents and the self-control of children. This pattern has been termed the intergenerational transmission of self-control (Boutwell and Beaver 2010). However, only a few studies have assessed how parental self-control influences their parenting and the subsequent self-control of children (Boutwell and Beaver 2010; Meldrum et al. 2016; Nofziger 2008). The current study seeks to extend this area by examining the connections between criminal behavior, self-control, and discipline through three generations. This work is intended to provide insight for how problems of crime and poor self-control persist within families.

This study examines three interrelated research questions. First, we ask if the criminality and self-control of parents influence the type of practices used to discipline their children. Second, we examine if the forms of discipline parents use affect the level of self-control in their children. We expect that parents with low self-control rely on forms of discipline that exact immediate compliance and require little effort on their part. The use of such practices would fail to provide guidance and an understanding of the long-term consequences of behavior, thus leading to lower self-control in their children. Our final question is whether the self-control of one generation operates directly on the self-control of the next generation or if the relationship is indirect through discipline.

Self-control theory

At its most basic, the general theory of crime (Gottfredson and Hirschi 1990) is based on classical assumptions of hedonistic individuals who act to maximize their own pleasure and avoid pain unless they are restrained from following these impulses. Self-control is identified as the key source of restraint that prevents individuals from acting in ways that may cause harm to themselves or others (Gottfredson and Hirschi 1990:90). While some have argued that self-control theory does not have the explanatory power that Gottfredson and Hirschi suggested it should (Grasmick, Tittle, Bursik Jr., and Arneklev 1993; Hay 2001; Pratt and Cullen 2000), the bulk of research substantiates the existence of the key relationship between self-control and a wide array of problematic behavior (see Duckworth and Kern 2011; Gottfredson 2008; Hay and Meldrum 2016; Pratt and Cullen 2000).

One study showing the diversity of negative outcomes that are predicted by self-control is by Moffitt, Poulton, and Caspi (2013). In their longitudinal study, children with low self-control were more likely to be at risk for substance use and addiction problems as adults, to have higher conviction rates, and also to have saved less money in adulthood compared to children with high self-control (Moffitt, Poulton, and Caspi 2013). Fergusson, Boden, and Horwood (2013) found similar results with self-control measured in middle childhood persisting as a strong predictor of later adult life outcomes including substance use, crime, and sexual risk-taking. Fergusson, Boden, and Horwood (2013) also found that those that had low self-control in middle childhood were more likely to have poorer educational attainment, lower income, and were more likely to be dependent on welfare. Thus, the central premise of the theory has continued to garner a great deal of support. This persistent backing has allowed researchers to shift attention to other pieces of the theory, including an examination of the causes of self-control.

Causes of self-control

Work that has focused on the causes of self-control ranges from biological and heritable personality traits to examinations of socialization practices. Studies have found a number of important sources of socialization, such as peers (Beaver et al. 2016; Hirtenlehner, Pauwels, and Mesko 2015; Holt, Bossler, and May 2012; Meldrum, Miller, and Flexon 2013; Nelson and Boisvert 2011) and schools (Duckworth et al. 2016; Erath, Bub, and Tu 2016; Honken and Ralston 2013; Kuhnle, Hofer, and Kilian 2012; Seibert et al. 2016). A few studies have even established that self-control is predicted by environmental characteristics in neighborhoods (Gibson et al. 2010; Pratt, Turner, and Piquero 2004). Most research on the development of self-control starts with the premise that parents are central in developing children's self-control, but the way in which the family and child self-control are connected has been studied from very different perspectives.

One approach is to examine biological or personality characteristics. Studies have shown that low self-control can be attributed to neuropsychological deficits and cognitive development (Beaver, Wright, and DeLisi 2007; Connolly and Beaver 2014). Others examined the potential biological and genetic origins of self-control. For example, Wright and Beaver (2005) used twin studies to examine the development of self-control. Their study revealed that parenting had only a small effect and argued that genetics should be examined when studying the development of self-control. Other

research on heritable personality traits as a key component of self-control has focused on the gene-environment interaction (Beaver and Belsky 2012; Boutwell and Beaver 2010; Kochanska, Philibert, and Barry 2009; Rutter 2012). That research examines both the genetic influences and environmental aspects that contribute to the development of self-control. This body of work concludes that self-control is not wholly caused by nature nor is it specifically developed through nurture; rather, it is a combination of both (Beaver and Belsky 2012; Boutwell and Beaver 2010; Kochanska, Philibert, and Barry 2009; Meaney 2001; Rutter 2012).

Stemming from the biological research on the development of self-control is the concept of the intergenerational transmission of self-control (Boutwell and Beaver 2010). This is the notion that parental self-control is passed on genetically to the child and that maternal and paternal self-control can predict the child's level of self-control. Most of the work on this question has not directly measured self-control but rather deviant behavior or parental personalities when they were adolescents and how these patterns are transmitted across multiple generations (Putkonen et al. 2007; Smith and Farrington 2004; Thornberry 2005). For example, Smith and Farrington (2004) found that parents who exhibit antisocial behavior as adults are more likely to have children who exhibited conduct problems and participated in antisocial behavior later in life. In a study of antisocial behavior through multiple generations, Thornberry (2005) found adolescent problem behaviors in the background of the parents had an indirect effect on their children's delinquency that operated through parenting styles. Thus, researchers that have studied an intergenerational transmission of deviance using multiple generations have found such a connection exists. However, most of these have not found direct relationships, or did not measure self-control.

For Gottfredson and Hirschi (1990), the primary cause of self-control is socialization, particularly that done by the parents in early childhood. According to Gottfredson and Hirschi (1990:97–100), successful development of self-control requires a parent or caregiver that is strongly attached to the child and who is both willing and able to carry out three specific tasks. The first task is to supervise the child consistently, second to recognize when the behaviors of the child are inappropriate, and third to respond to the problematic behavior by imposing an appropriate form of discipline. Several studies have used combined measures of parenting (Burt, Simons, and Simons 2006; Meldrum et al. 2016) that include a mix of monitoring, positive parenting, and discipline items. Others have divided specific elements, such as parental monitoring and supervision of children's activities, and different types of discipline practices (Gibbs and Giever 1995; Hay 2001; Higgins 2009; Hope, Grasmick, and Pointon 2003; Lucassen et al. 2015; Meldrum et al. 2012; Nofziger 2008; Polakowski 1994; Pratt, Turner, and Piquero 2004; Unnever, Cullen, and Pratt 2003; Verhoeven et al. 2007). As a whole, these studies indicate that the practices engaged in by parents do influence self-control. For example, Meldrum and colleagues (2016) found that a composite measure of ineffective parenting, including the use of harsh discipline and a lack of consistency or structure in parental interactions with their children, led to noticeably lower self-control in children as young as three years old. Hay (2001) found the use of non-physical discipline improved self-control of adolescents, and two different studies found spanking decreased self-control in children (Chapple, Tyler, and Bersani 2005; Nofziger 2008).

While this existing work has established the importance of parenting for building self-control, most have not directly examined how the self-control of the parent matters for this process. Gottfredson and Hirschi (1990:100) stated that their theory "focuses on the connection between the self-control of the parent and the subsequent self-control of the child." To date, only a handful of studies have actually measured self-control of parents, and assessed how this influences the parenting practices and resulting self-control of the children. Two of these studies focused on parenting of boys who were under two years old (Meldrum et al. 2016; Verhoeven et al. 2007). These authors found that parents with lower self-control are more likely to use ineffective and harsh discipline, leading to lower self-control in their children even at these young ages. A third study (Boutwell and Beaver 2010) found that both maternal and paternal self-control predicted the self-control of their children at age three. The final piece shifted to slightly older children, finding that parental self-control predicted the forms of parenting used when the child was aged 6 to 7, which in turn predicted their self-control at age 10 or 11 (Nofziger 2008).

The current study examines the last step in the suggested process for developing self-control to assess whether the intergenerational transmission of self-control operates through discipline practices. Specifically this work attempts to build on existing studies in three ways. First, two of the previous studies on parenting and self-control were done on the same relatively small sample of 117 boys in the Netherlands (Meldrum et al. 2016; Verhoeven et al. 2007). Eliminating girls from the samples may be practical, as past work has established persistent sex differences in self-control (Burton Jr., et al. 1998; Gibbs, Giever, and Martin 1998) but also fails to address criticism of feminist criminologists that this practice puts boys as the norm and ignores the experiences of girls (Messerschmidt 1993). Thus, by providing an analysis that includes both boys and girls, and is based on a larger, nationally representative sample from the United States, the current study provides a more generalizable test of the role of discipline in the transmission of self-control.

A second contribution is to assess the impacts not only of self-control but also deviance on parenting, and the resulting self-control of the next generation. We expect self-control to exert an influence on parenting and subsequent generations' self-control. But, previous studies find a wide range of effect sizes of self-control on outcomes. Two different meta-analyses find that the overall mean effect size of self-control on varied forms of deviant outcomes is less than .30 (De Ridder et al. 2012; Pratt and Cullen 2000). Therefore, it is also important to consider alternative predictors of children's self-control. One possibility is the criminality of parents. A long history of research has established that having criminal parents puts children at risk for delinquency (Farrington, Barnes, and Lambert 1996; Glueck and Glueck 1950; Putkonen et al. 2007; Smith and Farrington 2004; Thornberry 2005). In their discussion of this relationship, Gottfredson and Hirschi (1990:100–102), argue that crime is not passed on directly through any genetic link between parent and child. Instead, people with low self-control are more likely both to engage in crime and fail to adequately socialize their children. In addition to being less than ideal in how they raise their children, parents who are criminal are also likely to expose their children to a range of experiences that could result in lower self-control and deviance. For example, the incarceration of parents has been linked to a wide number of poor outcomes for children, including increased family poverty and living in communities with higher crime rates, depression and signs of stress or trauma, and of course higher deviance (Miller 2006; Murray and Farrington 2008). Therefore, the relationship between poor self-control in parents and children's self-control may not be due to parenting alone, but to a wide range of outcomes that result from parents' poor self-control, including parental criminality.

Finally, this study moves beyond existing work by examining these relationships across three generations. Parenting styles have been found to be correlated across generations and practices engaged in by one generation predict those used by their children (Brook et al. 1998; Thornberry et al. 2003). Therefore, we expect that parenting is largely learned by each generation by modeling the practices of their parents, which leads to a continuation of parenting that is ineffective in developing self-control. Thus, the intergenerational transmission of self-control may be due to the continuation of poor parenting. Without having data from multiple generations, past work has been unable to trace these relationships across any time frame longer than that between parent and child. This study begins to stretch the limits of past work by using data from three generations. This allows us to see how self-control and criminality in one generation influences their use of discipline and the resulting self-control in the next generation.

Data and methods

This study explores the patterns of self-control, parental crime, and the use of discipline across three generations by using data from the National Longitudinal Survey of Youth (NLSY), a nationally representative panel survey sponsored by the US Department of Labor. Beginning in 1979, the NLSY initially sampled 12,686 men and women between the ages of 14 and 21 years. This group, referred to as NLSY79, was interviewed annually from 1979 to 1994 and has since been interviewed on a biannual basis. The women from this cohort account for the Generation 1 (Gen1) respondents in the current study.

Beginning in 1986, additional interviews with these women have been conducted to obtain information on their children. These interviews are conducted every other year and collect data from the mothers about their own activities and those of their children. Self-report data from their children who are between 10 and 14 years old has also been collected since 1986 and beginning in 1994, children who are 15 years or older by the end of the survey year complete a self-report questionnaire. This group of surveys, including data from the original sample and their children, make up the NLSY79-Child and Young Adult (CYA). The children of the women in the original sample are the Generation 2 (Gen2) respondents in the current study.

The Generation 3 (Gen3) subjects in our study are identified using the household roster from the 2014 wave of the NLSY79-CYA. These are individuals who are listed in the roster provided by the Gen2 respondents as children who are “living in your household” at the time of the interview. The Gen3 cohort is not surveyed directly so all information related to this generation is provided by Gen2.

The final sample that was used in the analyses was restricted due to empirical and theoretical considerations. The primary restriction was based on how many Gen2 respondents actually had children by 2014. The Gen2 respondents were born between 1973 and 2011, and thus ranged in age from only three years old up to 41 years old by 2014. Clearly, many within this age range would be unlikely to have their own children, or only have children who are still infants. The age of Gen3 is important because the items that were used to develop the measures of discipline and self-control are asked about specific age groups. Thus, we restricted our sample to respondents that had Gen3 children who were at least 6 years old in 2014.

The second limitation was related to issues of missing data in our main measure of self-control. In most cases, respondents provided full information, but some had missing data on one or two indicators, and a small percent had no valid data points for any of the measures. While maximum likelihood estimates (MLE) could still have been used, we did not feel it would be appropriate to include these cases in the analyses. We therefore eliminated cases that had more than half of the indicators of self-control missing. These two restrictions left us with a final sample of 1,668 cases, with information on all three generations.

Analytic strategy

Due to the nature of the hypothesized relationships of interest, we employed a structural equation model (SEM) using the Analysis of Moment Structures (AMOS) statistical program. This program utilizes MLE, which creates full information models to adjust for missing data, and allows us to simultaneously measure the latent variables of self-control and criminality, and estimate the paths between the latent and observed variables. Prior to estimation of the full model, several steps were taken to establish the relationships between the observed and latent variables and assess the fit of the measures of parental crime and self-control.

A first step was to conduct bivariate analyses to assess the relationships between the potential measures of self-control for each generation. Specifically, we examined the zero-order Pearson correlations of items to determine if the observed variables we intended to utilize to measure self-control and criminality were statistically related. We also used this analysis as a starting point to indicate potential covariance in the errors of the variables that may influence the fit of confirmatory factor analyses (CFA) and the final structural model. As expected based on the correlation results, models that included no covariance between errors resulted in poor fit. We thus adjusted each model to allow covariance to exist between theoretically logical variables, as well as those that were highly correlated in the first set of analyses. The final measurement models (see [Appendix A](#)) indicated that the proposed measures provided at least acceptable fit between the model and data, allowing us to test the structural relationships between the variables.

There are a wide variety of model fit statistics generated by AMOS. The chi-square is often used to assess the level of fit of the model to the data, but it is dependent on the sample size and normally distributed data. Therefore, we use the following fit indexes and generally accepted levels to assess our models: Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), where greater than .95 indicates a good fit, .90 to .95 an acceptable fit, and less than .90 as unacceptable (see Bentler 1990;

Bentler and Bonett 1980; Bollen 1984; Fan, Thompson, and Wang 1999; Walters 2016). A third indicator is the RMSEA or root mean square error of approximation (Browne and Cudeck 1993). This measure is useful for estimating complex models, and is less sensitive to sample sizes (Fan, Thompson, and Wang 1999), with a value of .05 or less representing a good fit of the model to the data, and under .10 as an acceptable fit (Browne and Cudeck 1993; Steiger 1990).

Measures

Ideally, we would have liked to develop identical measures for all our key variables of self-control, criminality, and parenting for all generations. This was not possible due to the availability of different items across the 30 years of data. Therefore, measures of self-control are developed for Gen2 and Gen3 using the same set of items, but for Gen1 similar items were not available. Instead, measures of parental crime for Gen1 and Gen2 are included to assess this impact on both parenting and children's self-control. Each of the measures is described below.

Low self-control

For Gen2 and Gen3, low self-control is measured using a subset of items from the Behavior Problem Index (BPI; Peterson and Zill 1986). This scale is regularly administered both to parents and directly to children to assess children's characteristics and behaviors such as anxiety or depression, as well as aggression or other externalizing behaviors. For this study, Gen1 completed the BPI for each of their children (Gen2), and Gen2 provides this information for their children (Gen3). Since Gen3 are not directly interviewed, it would have been impossible to have self-report data from that generation.

There are studies to support the belief that using mother's reports may not only be acceptable but preferable to self-reports. One study that would support this argument (Meldrum, et al. 2013b) compares the relative effects of self-control on deviance using both self- and maternal reports from the BPI. Self-control, as measured by the adolescent self-report, was a stronger predictor of deviance than that produced by the mother's assessment using the same scale. However, both measures were significantly correlated and both predicted the child's involvement in deviance. Based on these findings, a parent's report is an acceptable way to measure children's self-control. In fact, it may be beneficial to use parent's assessments because a person's self-control may affect how they respond to different survey items (Hirschi and Gottfredson 1993). In a meta-analysis comparing measures of self-control, Walters (2016) concluded that self-reported behaviors are fairly poor measures of low self-control and a more useful approach is to have behavioral ratings provided by others, such as parents, teachers, or independent observers.

Thus, for the current study, low self-control for Gen2 and Gen3 is measured by the parental reports on a subset of the BPI items. For each item in the BPI scale, the parent indicates whether the description is often true, sometimes true, or not true in describing their child (reverse coded from three to one to indicate increasing problems or low self-control). Consistent with past studies using this scale to test self-control theory, (Chapple, Tyler, and Bersani 2005; Hay and Forrest 2006; Nofziger 2008; Pratt, Turner, and Piquero 2004; Turner and Piquero 2002), we identified items that are theoretically consistent with the concept of self-control and subjected them to correlation and CFA tests. Seven items were identified across both generations that focus primarily on the impulsive, short-sighted, and insensitive dimensions of self-control identified by Gottfredson and Hirschi (1990:89–90). The list of items is provided in [Appendix A](#), along with the fit statistics from the CFA's for both Gen2 and Gen3.

The BPI was completed by Gen1 respondents about their children in every survey wave starting in 1986. This scale was included for children in different age groups, depending on the year of the survey. Across all years, children as young as two were assessed, with most years capping the age at 14.¹ Of course, in various waves information on specific respondents was missing, either due to non-interview of

¹Exceptions to this are in 1986 and 1988 when mothers were asked to complete information about all their children, regardless of age. Thus in these waves, some older children were included.

the mother or due to the mother failing to answer individual items in this section. To minimize missing data, we identified the specific wave in the NLSY-CYA that each individual in Gen2 was closest to 14 years old and that had data on the BPI. Hirschi and Gottfredson (2001) argued that self-control would be fairly stable at approximately age 8 to 10, but other studies (Boutwell and Beaver 2010; Hay and Forrest 2006; Meldrum et al. 2016; Turner and Piquero 2002; Verhoeven et al. 2007) indicate stability can be reached earlier, and as young as two or three years old. Since we do use self-control of Gen2 to predict their discipline practices when they are themselves parents, we wanted to have a measure of self-control that was more likely to be reflective of their self-control when they were adults. Thus, we focused on the oldest age group available and set a lower limit of age eight. For this sample, self-control of Gen2 was collected between waves 1986 to 2006. Self-control for the majority of the respondents (83%) was measured at 13 or 14 years old, with 13% between 8 and 12, and only 4% being older than 14.

For Gen3, self-control is measured in 2014, the most recent wave of data available. This wave was used to maximize the number of respondents in this generation, and to allow for the measurement of discipline in both the previous wave and in 2014. Of the 1,668 cases in our sample, the children ranged in age from 6 to 14, with 30% being 6 or 7 years old and just under 15% being 13 or 14 years old. Therefore, the measure of self-control for Gen3 is slightly younger than Gen2 but includes a very similar age range, and does use identical indicators.

Parental crime

For Gen1, there was no available measure of self-control that was substantively similar to that used for Gen2 and Gen3. While various forms of deviant behavior could be used as a proxy for self-control, the fact that we consider both self-control and parental crime made such an option unacceptable. Thus, due to the established relationship between self-control and crime, and the hypothesized impact parental crime may have on children's self-control, we developed measures of crime for both Gen1 and Gen2. In 1980, the Gen1 respondents completed a module to assess their participation in criminal and deviant activities in the past year. A total of twelve items (see [Appendix A](#)) were examined with a zero-order Pearson correlation analysis.² Based on these results, a CFA estimated the significance of each indicator and possible significant covariance between individual indicators. In the final measurement model, all indicators and included covariances were significant ($p < .001$), and the fit indices indicate that the model is an acceptable fit to the data (see [Appendix A](#) for items and fit statistics).

For Gen2, we assessed parental crime in 2008. This is the wave after any of the Gen2 self-control measures were developed, and prior to the waves when Gen2 reported on their own use of discipline for their children. One reason to include this measure is that there is potentially a long period of time between the assessment of self-control and when Gen2 become parents. Therefore, the impact of childhood self-control on discipline may not be directly observed but instead operate indirectly through other characteristics, including criminal involvement. In addition, past work such as that by Murray and Farrington (2008) indicates that parental crime may have a direct impact on child outcomes, including that of self-control.

Discipline

The primary question of interest for this study is whether discipline practices influence the self-control of children. According to Gottfredson and Hirschi (1990:97–100), effective parenting requires that parents monitor children's behaviors, recognize when deviance occurs, and appropriately punish the child. The sequence of these events imply that in order to punish children for bad behavior, the parents would have had to first monitor the child and recognize the act as problematic. In the NLSY-CYA, there are measures of supervision or time spent with children, but none are consistent across the 30 years of data or for all the generations that are included in this analysis. However, parents in both Gen1 and Gen2 do indicate how they would respond to specific hypothetical situations of misbehavior of their children, and these

²Due to space constraints, these results are not shown but can be provided upon request.

Table 1. Descriptive statistics for discipline practices.

	Type of Discipline	Number Waves	N	%	Mean	StDev
Gen1	Physical	Zero	978	58.6	0.564	.739
		One	440	26.4		
		Two	250	15.0		
	Ignore	Zero	1487	89.1	0.122	.367
		One	158	9.5		
		Two	23	1.4		
	Other	Zero	534	32.0	1.047	.828
		One	521	31.2		
		Two	613	36.8		
Gen2	Physical	Zero	1347	80.8	0.238	.522
		One	245	14.7		
		Two	76	4.6		
	Ignore	Zero	1592	95.4	0.048	.225
		One	72	4.3		
		Two	4	.2		
	Other	Zero	221	13.2	1.169	.637
		One	945	56.7		
		Two	502	30.1		

questions are asked across multiple waves. Thus, although more complex measures of actual parenting would arguably be a better test of the general theory of crime, it is possible to examine parents' discipline preferences, and whether these influence the self-control of children.

Since we were interested in having measures that were consistent across the generations, we used two series of questions that were asked of both Gen1 and Gen2 respondents. The first series focused on young children up to five years old, and asked the parents: "If your child got so angry that he/she hit you, what would you do?" For children who were six or older, the prompt and options were slightly different. The prompt reads "Sometimes children get so angry at their parents that they say things like 'I hate you' or swear in a temper tantrum. Please check which action(s) you would take if this happened." Parents indicated whether or not they would use each action from a list of discipline practices that ranged from spanking or hitting the child, to ignoring the behavior.

Gottfredson and Hirschi (1990) do not just argue that all discipline is equal. Instead, they argue that "explicit disapproval of unwanted behavior" (p. 100) should be effective. However, as such a measure is unavailable in these data, we divide the responses into three types of discipline that may be indicative of more or less effort required by the parents: physical, ignoring, and other (see [Appendix B](#) for list of items). These are not mutually exclusive categories as respondents could select multiple types of discipline they would use in each proposed situation.

The "physical" option includes cases where the parent indicated they would "hit him/her back" or "spank him/her" for either of the two prompts. One option for each prompt indicated that the parent would just ignore the behavior. We expect that both these forms of discipline would lead to poor self-control as they are ones that do not make it clear what expectations are, and in the case of corporal punishment, serve as a model for potentially impulsive, violent behavior. There were a wide variety of other options parents could select beyond physical punishments or ignoring behavior. While these shifted slightly in different waves or between the prompts, most were related to long-term consequences of behavior, including sending children to their rooms or requiring a time out, taking away privileges from children (such as TV or allowances) or making the offending child complete a household chore. Positive responses to any of these options were combined into the variable "other discipline" for each respondent. Due to the fact that these require more thought and effort on the part of the parent, we expect that only those with higher self-control would report these

as their form of punishment. In addition, as these result in some longer term consequences of tantrums, they would be more likely to lead to higher self-control in children.

Since parenting may change as the parents themselves become more experienced as parents, and is specific to the ages of children, two waves of data were included for each type of discipline. Thus, each measure of discipline could be coded zero (did not select the type of discipline in either wave), one (selected the type of discipline in one wave), or two (selected the type of discipline in both waves). For the Gen2 discipline, we used waves 2012 and 2014 to measure discipline, as this series of parenting questions began in 2012 for this generation. To assess discipline used by Gen1, we selected the two waves of data that were immediately prior to the wave in which self-control of Gen2 was measured.³ As an example, if Gen2 self-control was measured in 2002, discipline was assessed in 1998 and 2000.

Findings

Prior to performing the SEM analysis, several descriptive and bivariate analyses were conducted. Table 1 provides descriptive information for each form of discipline examined in this study. The most common form of discipline for both generations was the “other” category.

This option was selected by 68% of Gen1 and 86.8% of Gen2 for at least one wave. Of course, it is likely the dominance of this form of discipline is at least partially related to the fact that this included a wider range of options compared to the physical and ignore categories. For both generations, they were least likely to ignore bad behavior (10.9% Gen1 and 4.6% Gen2). Corporal punishment shows the biggest difference between the generations. For Gen1, 41.4% indicated that they would use this form of discipline. Further, 15% responded that they would use this form of discipline in both waves. In contrast, physical discipline was selected by less than half that number for Gen2 parents. Only 19.3% indicated they would ever use physical discipline, and only 4.6% indicated they would use physical discipline in both the waves.

The remaining analysis is to examine the three research questions in this study. Specifically, we examine 1) whether low self-control and parental crime predict the type of discipline parents use, 2) if different types of discipline predict self-control in children, and 3) whether the direct relationship between self-control in successive generations is mediated by discipline practices. To answer our study questions, we utilized SEM to assess the proposed relationships. The model with all hypothesized relationships between key variables is displayed in Figure 1. The findings for the structural elements in the model is provided in Table 2. Figure 2 displays the final results of the SEM. For

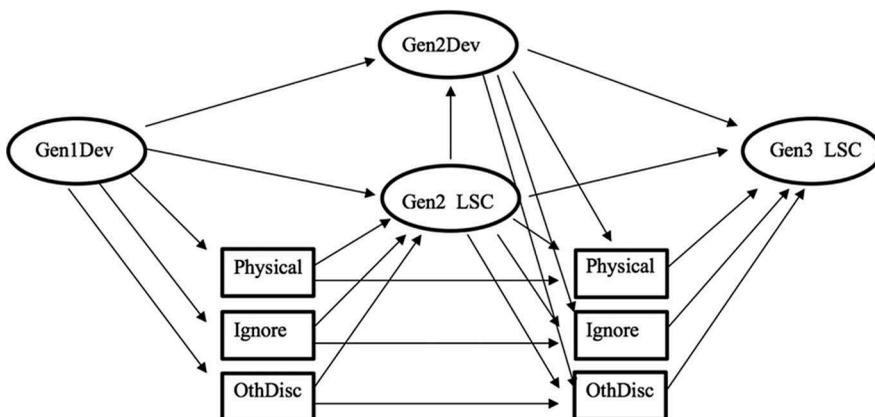


Figure 1. Full Hypothesized Structural Model.

³There were a few exceptions to this process. If self-control was measured in either 1986 or 1988, there were not two waves of data prior to these dates, as the NLSY-CYA only began in 1986. Thus, for Gen2 respondents whose self-control was measured in 1986, we used only one wave (1986) for discipline, and for 1998 self-control measures we used both 1996 and 1998.

Table 2. Standardized maximum likelihood estimates for structural elements of full model.

Predictor	Endogenous Variables								
	Gen 1			Gen 2			Gen 3		
	PhysD	Ignore	OthD	LSC	Crime	PhysD	Ignore	OthD	LSC
G1_Crime	.062*	.049	-.102***	.096**	.155***				
G1_PhysD				.097***		.142***			
G1_Ignore				.041			.009		
G1_OthD				.000				-.340***	
G2_LSC					.147***	-.046	-.010	-.005	.074*
G2_Crime						.095***	.012	-.103**	.092*
G2_PhysD									.042
G2_Ignore									.066*
G2_OthD									-.012

N = 1668

Chi-Square = 1654***

Df = 585

CFI = .92

TLI = .90

RMSEA = .03

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

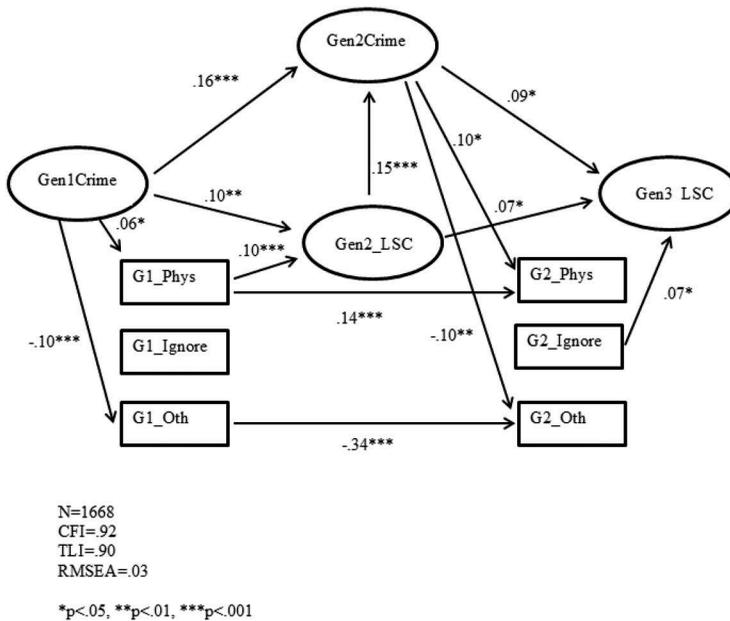


Figure 2. Significant paths in full model (standardized MLE).

clarity, the measurement components of the full model are not included in this figure but are provided in Table 3.

For our first question, whether self-control and parental crime predict the choice of discipline practices, the findings are mixed. Parental crime appears to have fairly consistent effects on parenting for both generations. For both generations, parental crime significantly increases the reported use of engaging in physical discipline ($p < .05$ for Gen1 and $p < .001$ for Gen2). In addition, parental crime also significantly and negatively predicts the use of other forms of discipline. Thus, parents with higher criminal involvement are less likely to engage in these “other” discipline practices. These findings are consistent with our expectations. However, the findings for self-control on parenting are not as predicted. Gen2 low self-control did not reach significant levels in predicting any of the discipline practices. However, it did significantly predict Gen2 criminality. Therefore, since Gen2 criminality did

Table 3. Standardized maximum likelihood estimates for measurement components in full model.

<i>Gen 1 Criminality</i>		MLE	Covariances	
1	Vandal	0.604***	e1<->e2	0.051***
2	Fight	0.384***	e1<->e12	0.019***
3	Shoplift	0.575***	e2<->e7	0.102***
4	StealSm	0.537***	e2<->e8	0.077***
5	StealBig	0.702***	e2<->e9	0.220***
6	Force	0.620***	e3<->e4	0.048***
7	HitThreat	0.445***	e4<->e5	0.017***
8	Attack	0.565***	e4<->e10	-0.093***
9	Marij	0.317***	e4<->e11	-0.021***
10	Con	0.502***	e5<->e6	0.018***
11	Car	0.530***	e5<->e11	-0.017***
12	Brokeln	0.503***	e5<->e12	0.031***
			e7<->e8	0.124***
<i>Gen 2 Criminality</i>				
13	Fight	0.505***	e16<->e17	0.021***
14	Steal	0.271***		
15	Threat	0.556***		
16	Convict	0.245***		
17	Probation	0.215***		
<i>Gen2 Self-Control</i>				
18	Temper	0.736***	e18<->e22	-0.064***
19	Stubborn	0.722***	e18<->e20	-0.019*
20	Restless	0.550***	e19<->e22	-0.064***
21	Impulsive	0.622***	e20<->e24	0.050***
22	DiffCon	0.645***		
23	Mood	0.537***		
24	Demands	0.498***		
<i>Gen3 Self-Control</i>				
25	Temper	0.619***	e25<->e26	0.055***
26	Stubborn	0.610***	e25<->e30	0.042***
27	Restless	0.641***	e25<->e29	-0.028***
28	Impulsive	0.733***	e26<->e30	0.044***
29	DiffCon	0.621***	e27<->e29	0.071***
30	Mood	0.517***		
31	Demands	0.528***		

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

predict two forms of discipline, it is possible that self-control of Gen2 is important for predicting parenting due to its impact on crime for this generation.

For our second question, we examine the relationships between parenting practices and resulting self-control. For both generations, discipline had only minimal effects on self-control. Physical discipline used by Gen1 is a strong predictor of poorer self-control in Gen2 ($p < .001$). However, ignoring the behavior or using other forms of punishment were not significantly related to Gen2 self-control. Similarly, only one form of discipline used by Gen2 was directly predicting low self-control of Gen3. In this case, ignoring the behavior increased lower self-control for Gen3 ($p < .05$). Therefore, there is not a strong case for the impact of the role of discipline practices on predicting children's self-control found in the current study.

Our final question focuses on whether the relationship between self-control across generations is mediated by discipline practices. It is clear in this model that this is not the case. Self-control and/or criminality of the previous generation remain as significant predictors of self-control in their children, even when accounting for discipline. In fact, it appears that the strongest predictors of self-control for each generation is the self-control and criminal activities of the parent, with discipline having very limited impact.

The final set of relationships in the model were between parenting practices in successive generations. It is logical to believe that if Gen1 practiced spanking their children would be more likely to use these discipline practices as well, as it is what they grew up with as a model for discipline. Thus, while not specifically part of our hypotheses, we did allow for this relationship in

the model. As expected, spanking by Gen1 predicted increased spanking by Gen2 ($p < .001$). However, the other two forms of parenting were not related as expected. First, ignoring behavior between the generations was not significant. Of course, this was the least common form of discipline used, with only 10.9% of Gen1 and 4.6% of Gen2 reporting that they would ignore tantrums in their child. However, using other forms discipline by Gen1 actually decreased the use of these practices in Gen2, in spite of nearly 87% of Gen2 parents reporting that they do use these behaviors.

It is important to note that the model is an acceptable fit to the data but cannot be considered a strong fit. This study focused only on discipline that parents report they would use in certain hypothetical situations. It is not a direct measure of how often they actually use these practices. They may therefore report they would use forms of discipline that they believe are more socially acceptable, rather than what they actually do. It is also likely that other elements of parenting, such as affection between parent and child, supervision, and the parenting provided by other adults in the household would all contribute to the self-control of the child. In spite of the lack of additional items in the model, the CFI is .92 and the TLI is .90, indicating an acceptable model fit. In addition, the RMSEA is strong, at only .03, indicating a good fit with the data. These findings indicate the proposed relationships in our model at least adequately represent the data.

Conclusion

This study examines the importance of discipline practices on self-control over three generations. While studies have examined the role of parenting practices in developing self-control (Baumrind 1991, 1996; Colman et al. 2006; Hay 2001; Higgins et al. 2011; Nofziger 2008; Perrone et al. 2004; Power and Chapieski 1986), to date, this is the only study to examine the relationship between self-control of parents, parental criminality, discipline practices, and resulting self-control of children across multiple generations. If self-control has lasting impacts, not only in the activities of the individual, but through multiple generations, it would be evidence that we need to find ways to improve self-control in children to prevent involvement in crime and deviance for generations to come. However, as Belsky and Jaffee (2006) noted, parenting techniques vary from person to person, and more broadly, what was considered to be effective parenting for one generation may be viewed as problematic for the next. For example, spanking has long been viewed as an acceptable form of discipline, but that has shifted quite dramatically over the last several decades, with an increasing percentage of the population viewing this as bad parenting. Because of the trends in parenting, it is difficult to predict how the next generation will parent. However, we argue that having parents with high self-control would result in the use of more effective parenting regardless of current cultural trends.

The first research question in this study is whether parental crime and self-control influence the specific discipline practices used by parents. This is the case only for parental crime. While parental criminality for both Gen1 and Gen2 increase the reported use of physical discipline, and decrease the use of other discipline forms, the low self-control of Gen2 does not have any direct significant effects on discipline. Thus, while self-control might be relevant in predicting parents' crime, and thus be related to discipline indirectly, this is not consistent across generations and is not a strong relationship in the current study.

Our second research question was whether the types of discipline used affect self-control in children. Similar to several past studies that found the use of corporal punishment, such as spanking, decreases self-control (Beaver, Wright, and Matt 2007; Chapple, Tyler, and Bersani 2005; Hay 2001; Nofziger 2008), we also found this to be a significant predictor for the self-control of Gen2, but this failed to reach significance for Gen3. Similarly, doing nothing by ignoring the behavior, perhaps the most passive and thus easiest form of discipline, decreases self-control in children, but only for Gen3. Thus, while some forms of discipline are important in predicting self-control, there is clearly a great deal that is predicting self-control other than the measures of discipline in the current study.

Our final question was whether the relationship between self-control across generations was mediated through discipline. In this study, this was not the case. These findings differ from those of

Meldrum et al. (2016) where only indirect effects between maternal self-control and early childhood self-control existed, with that relationship being mediated by ineffective parenting. We did find that some forms of discipline influenced self-control for each generation, indicating that parenting practices may be very important in predicting self-control. However, the limited forms of parenting that were consistent across the three generations in the current study may not allow us to examine all aspects of parenting adequately.

This study was a first attempt to establish if there are multi-generational effects of self-control on parenting and self-control in later generations. A great deal more work is needed and there were several limitations in the current analysis to consider. Future work that focuses on self-control parenting should include other elements, including supervision and the more challenging aspect of recognizing deviance. Gottfredson and Hirschi in fact indicated that it is extremely difficult for social scientists to agree which behaviors reflect low self-control, let alone for parents to understand this connection and thus recognize such behavior as problematic and in need of correction (1990:102). For this study, we were not able to include these other parenting elements that are crucial to developing self-control. Since we were dependent on secondary data, and to only using items that were consistent over a 30-year time frame across multiple generations, we were limited in our ability to measure parenting beyond specific discipline practices. It would be possible to create some measures of supervision and more complex understandings of the time parents spend with children, but only with a much smaller group that would target very specific waves of data. We hope that as the NLSY continues to be collected, the third generation will be included in self-report studies, making additional measures concerning the relationship between the parents and child available.

In addition, this study does not address the potential “child effect” on parenting (Bell 1968; Meunier, Roskam, and Browne 2010; Pettit and Loulis 1997). The child effect is the possibility that children are not just passive in the parent-child relationship but that their behaviors, even at extremely young ages, can affect parenting practices. For example, a parent who had previously tried without success to correct behavior using time outs, may have discovered that their child more quickly responded to being ignored during a tantrum. In contrast, a parent who has a child who never has tantrums, may not be able to imagine any situation where they would resort to hitting their child. The current study used measures of discipline that were not directly observed measures of what the parents actually do on a regular basis. Instead, they were hypothetical situations. Whether parents picked each type of discipline may have been influenced by social desirability, or by their own experiences with their child. Thus, we are not able to determine whether what parents actually do is consistent with what they claim they would do, let alone whether their parenting is subject to any reciprocal child effects.

A final limitation in this study was the lack of controls in our model that may explain differences in self-control or parenting practices. For example, it is likely that parents who were older at the time of their child’s birth, who have more education, or even who have previous experience parenting an older child, may engage in different forms of discipline than younger parents. However, such details were unavailable for the Gen3 individuals, and thus could not be assessed adequately.

In spite of these limitations, the current study adds to the literature in two ways. First, we offer evidence that provides additional support for the intergenerational transmission of self-control. It is very clear that self-control of parents predicts self-control of their children, and in addition that criminality of parents predicts not only crime in their children (as in the case between Gen1 and Gen2), but also the children’s self-control. The nature of these relationships however remains unclear, as most of the hypothesized relationships to explain the transmission of self-control across generations were not significant.

Second, we stretch the limits of past work examining the role of parents to assess how the relationship between self-control of parents and discipline can extend not just to their children’s self-control but to an additional generation. Understanding how crime and poor self-control is transmitted across multiple generations can lead to potential targets for intervention, and a wide range of better life outcomes associated with higher self-control.

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Appendix A: Standardized MLE and model Statistics from CFA for Parental Criminality and Self-Control

Parental Criminality		
Gen1	On this form are descriptions of types of activities that some young people can get into trouble for. I want you to read each item, and put a check mark after the category which best describes the number of times in the last year you have done the activities described.	
	Item Wording	MLE*
Brokeln	Broken in to a car or building to steal something or just to look around	0.638
Car	Taken a vehicle for a ride or drive without the owner's permission	0.432
Con	Tried to get something by lying to a person about what you would do for him, that is tried to con someone	0.468
Marij	Smoked Marijuana or Hashish ("Pot," "Grass," "Hash")	0.303
Attack	Attacked someone with the idea of seriously hurting or killing them	0.546
HitThreat	Hit or seriously threatened to hit someone	0.399
Force	Used force or strong arm methods to get money or things from a person	0.632
StealBig	Other than from a store, taken something not belonging to you worth \$50 or more	0.757
StealSm	Other than from a store, taken something not belonging to you worth under \$50	0.591
ShopLift	Taken something from a store without paying for it	0.587
Fight	Gotten into a physical fight at school or work	0.337
Vandal	Purposely damaged or destroyed property that did not belong to you	0.744
	CFI = .940, TLI = .888, RMSEA = .073	
Gen2	In the last year (last 12 months) have you...	MLE*
Fight	been in a physical fight at school or work	0.609
Steal	taken something worth \$50 or more	0.273
Threat	ever hit or seriously threatened to hit someone	0.465
	Since date of last interview/have you ever...	
Convicted	been convicted of any charges other than a minor traffic violation	0.243
Probation	been on probation	0.203
	CFI = 1.000, TLI = 1.000, RMSEA = .002	

Appendix A: Standardized MLE and model Statistics from CFA for Parental Criminality and Self-Control (continued)

		MLE ^a	
		Gen2	Gen3
Self-Control (Gen2 and Gen3)			
These statements are about behavior problems many children have. As you read each item, think about your child's behavior over the last three months. Then circle the number that goes best with each item.			
Temper	Child has a very strong temper and loses it easily	0.726	0.612
Impulsive	Child is impulsive, or acts without thinking	0.609	0.712
Demands	Child demands a lot of attention	0.496	0.553
Stubborn	Child is stubborn, sullen, or irritable	0.785	0.611
Restless	Child is restless or overly active, cannot sit still	0.526	0.630
DiffCon	Child has difficulty concentrating/paying attention	0.646	0.598
Mood	Child has sudden changes in mood or feeling	0.533	0.493
	Gen2: CFI = .987, TLI = .965, RMSEA = .047		
	Gen3: CFI = .995, TLI = .981, RMSEA = .035		

^a All significant at $p < .001$

Appendix B: Discipline Items

Over different waves and ages, specific options shifted slightly in the “other” category. The listed items below were included in the measure of “other discipline” every year they were available.

Sometimes children get so angry at their parents that they say things like “I hate you” or swear in a temper tantrum. Please check which action(s) you would take if this happened. (Circle all that apply.)

Asked of parents with children aged 6–9, 6–18, or in two sections including ages 6–9 and 10–14, or 10 and older depending on survey year

Physical	Spanking
Ignore	Ignore it
Other	Grounding
	Talk with child
	Give him or her household chore
	Send to room for more than 1 hour
	Take away his/her allowance
	Take away TV, phone, or other privilege

Most children get angry at their parents from time to time. If your child got so angry that he/she hit you, what would you do? (Circle all that apply)

Asked of parents with children aged 3 through 5

Physical	Hit her/him back
	Spank him/her
Ignore	Ignore it
Other	Send him/her to his/her room
	Talk to him/her
	Give him/her a household chore
	Take away his/her allowance
	Put child in a short “time out”

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