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VIOLENT SOCIALIZATION PROCESSES AND CRIMINAL BEHAVIOR:
AN INTERNATIONAL PERSPECTIVE ON VARIATIONS IN SOCIAL CONTROL
DURING LATE ADOLESCENCE AND EMERGING ADULTHOOD

BY

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DISSERTATION

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in

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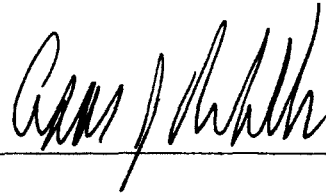
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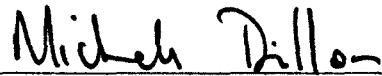
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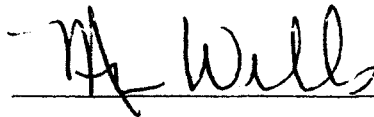
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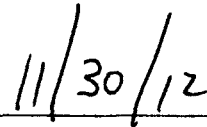
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Date

Dedication

I dedicate this dissertation to those who have supported me through this most challenging endeavor. Thank you, Kathy, for being there when I needed you to listen. Thank you, Sean and Tanner, for your love and many sacrifices. I would never have been able to finish this without you!

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ABSTRACT

VIOLENT SOCIALIZATION PROCESSES AND CRIMINAL BEHAVIOR: AN INTERNATIONAL PERSPECTIVE ON VARIATIONS IN SOCIAL CONTROL DURING LATE ADOLESCENCE AND EMERGING ADULTHOOD

by

Aimée Delaney Lutz

University of New Hampshire, December, 2012

Using Gottfredson and Hirschi's parental socialization thesis as a theoretical framework, the present study explores whether or not violent socialization processes are associated with criminal behavior, both at the micro-level and macro-level, across 32 different nations. Analyses were conducted on data from the International Dating Violence Study (Straus & Members of the International Dating Violence Research Consortium, 2004). Bivariate statistical analyses show that violent socialization tends to be more prevalent among nations with indicators of violence (e.g., laws supporting the death penalty) compared to nations without such indicators. The results of ordinary least squares regression analysis indicate that violent familial socialization processes are associated with individual criminal behavior within some nations, but not all nations. The results of multilevel modeling regression analysis reveal that criminal behavior significantly varies across the 32 different nations and violent socialization can explain a significant proportion of this variation.

The findings from this exploratory study mostly supported the two main hypotheses: youth from families that use violent socialization processes tend to engage in significantly more criminal behavior, compared to youth from families that use non-violent familial socialization processes (H₁) and criminal behavior significantly varies nation to nation as part of a context of norms of violence (i.e., violent socialization processes (H₂). While these findings are preliminary, this dissertation project provides a reference point for future comparative research on how norms may influence socialization processes within different nations and the ultimately the effects on criminal behavior.

CHAPTER I

INTRODUCTION

According to social control theories, criminal behavior is influenced by various familial socialization processes. Specifically, familial socialization processes are the methods the family uses to control youth behavior. Self-control theory (*cf.* Gottfredson & Hirschi, 1990), in the revised version (Gottfredson, 2005; Hirschi, 2004), argues that attachments to children assist parents with recognizing and disciplining deviant behavior. Attachments and discipline, then, are important dimensions of familial socialization processes used to control youth's behavior (see e.g., Boyd & Higgins, 2006; De Li, 2004; Johnson, Giordano, Manning, & Longmore, 2011).

The key components of self-control theory are often referred to as the parental socialization thesis (Beaver, Wright, & Delisi, 2007; Boyd & Higgins, 2006; De Li, 2004). The parental socialization thesis discusses, in part, recognition of (Gottfredson & Hirschi, 1990) and punishment for deviant behavior (Gibbs, Giever, & Martin, 1998). Within the revised self-control theory, the parental socialization thesis also discusses bonding with youth to inculcate consideration towards others (Gottfredson, 2005; Hirschi, 2004; Piquero & Bouffard, 2007). These are methods of control parents exert over youth behavior (Beaver, Wright, & Delisi, 2007).

But some familial socialization processes may constitute risk factors for criminal behavior. Risk may be especially salient for youth from families that possess multiple risk factors (Loeber & Stouthamer-Loeber, 1986; Rutter, Quinton, & Hill, 1990), such as parents unable to recognize violence as deviant behavior and discipline involving violence. For instance, violence occurring within familial socialization processes may be ineffective at controlling criminal behavior among youth. From a control perspective, violent socialization does not provide a model of deviance or actively promotes deviance. Instead, from a control theory perspective, violent socialization involves methods of control that are ineffective in promoting self-control among youth. Violent familial socialization processes include violent discipline (i.e., the use of excessive physical discipline), exposure to violence, and violent communication (advising youth to use violence to resolve conflict). Despite a large body of research on family violence, there appear to be no published international studies that have examined a relationship between violent familial socialization processes and criminal behavior. What the literature leaves unanswered is whether or not violent familial socialization processes prevent self-reported criminal behavior.

Some violent familial socialization processes occur at the individual level (i.e., family). Disciplinary techniques, used to instill self-control in youth, could be unique within each individual family. But violent familial socialization processes may also be part of the norms of violence among groups of families within any given nation. Gottfredson and Hirschi argue that the development of self-control, one of the key factors in preventing criminal behavior, is the result of both effective socialization and life

circumstances (1990: 179). While they seem to refer to the circumstances of life that may increase likelihood of youth committing crime, Gottfredson and Hirschi fail to clearly explain the meaning of 'life circumstances.' Instead, Gottfredson and Hirschi explain that 'life circumstances' can only impact the development of self-control, and consequently the degree to which youth engage in criminal behavior, when life circumstances are random (1990: 236). For example, the location in which children reside is mostly random. Children do not self-select into the nation in which they live; they reside in the nation of their ancestors or a nation of their parents' choosing.

Given that youth's nation of origin qualifies as one important life circumstance, it is important to recognize that each nation embraces very different norms surrounding the acceptability of violence. Specifically, violence may be more common within some nations. Violent socialization processes, then, could be conceptualized as occurring within a context in which violence may be part of norms of any given nation (e.g., see Straus, 2001; 2004). Specifically, research has shown that violence tends to occur within a context influenced by social norms (O'Keefe, 2007; Palmeri, Sams & Turcotte, 2004; Rosario, Salzinger, Feldman, & Ng-Mak, 2003). For example, male youth violence has been associated with violence occurring within the context of violent neighborhoods (Reed, Silverman, & Raj, 2008) and norms for neighborhood violence (Reed, 2008). Norms of violence within a nation, then, may occur within a national context effect. In this sense, the contextual effect refers to conditions of violence within nations that shape methods of social control used by aggregates of families within that nation.

For example, in one section of the literature that discusses national context effects, Kelley and De Graaf (1997) conceptualized national religiosity as similar religious beliefs among groups of people within the same nation, and these religious beliefs are strongly tied to a specific nation. Their research found that national religiosity was a stronger influence on children's religious beliefs than individual parental socialization around religion (Kelley & De Graaf, 1997). In this sense, an argument can be made extending self-control theory in that, despite Gottfredson and Hirschi's (1990) original contention that correlates of criminal behavior are invariant across different societies. Societal norms of violence may influence socialization processes over and above the methods of socialization used within individual families in such a way that criminal behavior is *not* effectively controlled. Yet, there appear to be no published studies that examine the degree to which violent familial socialization processes ineffectively control criminal behavior across different nations. Hence, the current criminological literature has yet to examine whether criminal behavior varies as a function of norms of violence, such as violent familial socialization processes, in different nations.

Because Gottfredson and Hirschi argue the importance of the family in properly socializing youth in order to prevent criminal behavior, the present study uses the parental socialization thesis, in part, to guide an examination of the degree to which violent familial socialization processes are ineffective in controlling criminal behavior even in the presence of attachments within the family and individual self-control. More specifically, violent familial socialization will be examined as 'processes,' multiple

dimensions of violence that occur within the family as part of the socialization of youth. Further, the present study examines violent familial socialization processes both at the individual family level and as a context of norms of violence within 32 different nations located in the following regions: North America (3), South America (3), Europe (13), Africa (2), the Middle East (2), Asia (7), and Australia (2). (For a full list of each country, see Table 1 on page 66).

Social control through familial socialization processes

Since the family is responsible for instilling within youth the necessary self-control to conform to “moral standards and society’s laws” (Schmallegger & Bartollas, 2008: 248), the family serves to control youth behavior. There have been many published studies examining the effect of familial socialization processes, as laid out through the parental socialization thesis, on youth’s development of self-control (e.g., see Cochran et al., 1998; Feldman & Weinberger, 1994; Gibbs et al. 1998; Hay, 2001; Polakowski, 1994). But families provide varying levels of control over youth behavior (Brown & Rinelli, 2010), such that not all familial socialization processes offer equal control over youth behavior. When familial socialization processes involve violence, such ineffective socialization fails to control youth aggression (Cooper, Masi, & Vick, 2009), which can include criminal behavior.

Violent socialization within the family

Violent familial socialization processes include physical discipline (i.e., violent discipline), witnessing violence between family members (i.e., exposure to violence) and advising youth to engage violence to resolve conflict (i.e., violent communication). These violent familial socialization processes involve both harsh discipline and parents' failure to recognize violence as deviant behavior.

Gottfredson and Hirschi (1990) argue, in part, that to prevent criminal behavior, deviant behavior must be recognized and immediately corrected through effective discipline. In their discussion of the factors that contribute to criminal behavior, Gottfredson and Hirschi indicate that “too harsh” punishment may not effectively control youth behavior (1990: 100-101). The theory seems to imply that violent familial socialization processes could be ineffective at controlling youth behavior. Yet, Gottfredson and Hirschi do not specifically define what constitutes ineffective familial socialization processes within either the original self-control theory (1990) or the revised self-control theory (Gottfredson, 2005; Hirschi, 2004).

But since “research confirms this simple truth: less parental behavioral control equals more problem behavior” (Vazsonyi & Flannery, 1997: 98), the failure of parents to *effectively* control youth's behavior could lead to criminal behavior (*cf.* Gottfredson & Hirschi, 1990). Because violent familial socialization processes involves violent discipline, which could be considered harsh, and an inability to recognize deviant behavior (e.g., using violence to respond to conflict), violent socialization processes

within the family would be, theoretically, ineffective at controlling youth behavior. As such, youth who experience violent socialization may not be prevented from engaging in criminal behavior. Rather, violent familial socialization processes could fail to control youth criminal behavior.

Violent socialization as a norm of violence

Risk for criminal behavior may not result exclusively from socialization within the individual's family. Under Bronfenbrenner's (1986) bio-ecological systems model, familial socialization processes do not operate independently; that is, families do not socialize youth in isolation. Rather, societal norms of violence within any given nation could shape the socialization of youth independent of familial socialization processes. For example, Shaw (2010) argues that the social change currently occurring in some Asian and Pacific nations impacts the ability of that nation to exert control over youth behavior, including criminal behavior. This suggests commonalities in the methods used to contain youth behavior within the same nation.

Just as the context of social change within a nation may be associated with an inability to control criminal behavior, aggregates of families within some nations may be less able to adequately control the behavior of youth due to societal norms of violence within a specific nation. Aggregates of families within the same nation may embrace similar methods of control over youth behavior and these methods coincide within a context of violence unique to that nation. Forjuoh and Zwi (1998) argue that wide-spread

societal views on discipline influence the methods of control over youth behavior used by the family. Specifically, the argument seems to be that violence occurs within a context specific to some nations. This context of violence includes violent disciplinary techniques occurring among aggregates of families across the same nation. Knowles (1996) argues that physical discipline is one familial socialization process in which there is no discerned consensus, but is instead part of a universal context within the same nation. Hence, aggregates of families within the same nation may similarly engage in violent socialization processes. Violent familial socialization processes may not necessarily be isolated methods of control within each individual family but instead a function of the norms of violence for multiple families within the same nation.

Social control during late adolescence and emerging adulthood

Norms of violence may vary not only across different nations, but also with the different stages of the life course. Emerging adulthood is a developmental period between youths' minority, when they are completely dependent on the family in a socio-legal context, and young adulthood, when people begin to be pulled toward law abiding behaviors due to entry into conventional social institutions, such as careers and committed partnerships (Arnett, 1994; Arnett, 2000). As a new stage in the life course, the concept of 'emerging adulthood' is necessary to explain the extended transition to adulthood distinct in modern society (Johnson et al., 2011). During this stage, traditional

life goals, such as careers, marriage and child bearing, tend to be put off in favor of 'lifestyle,' which connotes the development of personal identity (Giddens, 1991).

The study of criminal behavior among late adolescents and emerging adults is important because, traditionally, the likelihood of engaging in certain criminal behaviors tends to increase during this period in the life course (Piquero, Brame, Mazerolle, & Hapaanen, 2002). For example, in reviewing variability in the age-crime relationship for eight different time periods between 1952 and 1988, Greenberg (1994) consistently found that the peak age for committing assault within the United States was 21 years and the peak age for theft was 17 years. Variation in the peak ages for different criminal behavior has been supported outside the United States. Fagan and Western (2005) found variability in peak ages depending on the specific criminal behavior and the social position of the offender (e.g., students compared to disadvantaged youth) among a sample of youth and emerging adults in Australia. While Gottfreson and Hirschi (1990) originally argued that familial socialization processes are only important for the first 7 years of life (i.e., childhood), others have argued that familial socialization processes remain important during late adolescence and emerging adulthood in order to control youth behavior (Johnson et al., 2011). Hence, studying criminal behavior during late adolescence and emerging adulthood is particularly important for criminological study.

Social control and criminal behavior across different nations

Using the parental socialization thesis, in part, as a theoretical framework, the present study examines the extent to which violent familial socialization processes should be ineffective in controlling criminal behavior across 32 nations. Sellers, Kübler, Walter-Rogg, and Walks (2012) recently argued that the social sciences cannot advance understanding of nation-based processes unless there is more international research. Specifically, they discuss the need to examine social phenomenon through national context effects that identify similarities within the same nation, while also recognizing variation both within the same nation and across different nations (Sellers, Kübler, Walter-Rogg, & Walks, 2012). Some research has already identified the unique context in which certain nations shape socialization processes (e.g., Greenfield, Flores, Davis & Salimkhan, 2008; Keller, Otto, Lamm, Yovsi & Kartner, 2008; Runyan et. al., 2008). Recently, Lee and Kim (2011) found that many of the participants in their survey of youth ages 18 to 24 years in Korea were unable to recall any experiences with physical abuse. Among those who did report experiences with physical abuse, most of the participants viewed the physical abuse they endured in multiple different settings (e.g., family, school) as 'discipline' rather than 'violence.' Lee and Kim (2011) attributed this finding to the unique context of Korea, in that violence towards children, particularly under the guise of discipline, is more tolerated in Korea compared to other nations. Lee and Kim argue that, because their study was limited to one nation, more research is needed to explore if violence against children occurs within a context specific to a nation.

Hence, the degree to which violent socialization processes are ineffective at controlling criminal behavior could vary across different nations.

Building upon this current literature, the present study seeks to answer two research questions. First, are violent familial socialization processes associated with self-reported criminal behavior among emerging adults, even in the presence of effective familial socialization processes, within 32 different nations? The answer to this research question should begin to fill the gap in the current international literature on family violence by exploring a preliminary understanding of the effects of violent family socialization processes on criminal behavior within different nations. Second, does criminal behavior vary as a function of violent socialization processes within and between 32 different nations? The answer to this second research question should begin to offer some initial data indicating the need to extend the conceptual framework of self-control theory. Specifically, norms of violence within any given nation *are* important for understanding the reasons some youth engage in criminal behavior despite Gottfredson and Hirschi's argument that norms¹ "are *not* important in the causation of crime" (1990: 175 [emphasis in original]). These two research questions will be analyzed through a multi-level perspective, looking at effects of individual experiences of violent familial socialization processes within each of 32 nations and also comparing mean levels of the aggregate of experiences with violent familial socialization processes across these same nations.

¹ In their original conceptualization of self-control theory, Gottfredson and Hirschi (1990) use the word "culture" and "cultural variability" to refer to nations and norms within a nation.

CHAPTER II

SOCIALIZATION PROCESSES AS SOCIAL CONTROL

Social control theories, in general, contend that it is the extent to which the family controls youth behavior, and encourages self-regulation in the absence of that external control, that prevents criminal behavior (e.g., see Nye & Weeks, 1956; Reiss, 1951; Reckless, 1967; Hirschi, 1969; Gottfredson & Hirschi, 1990; Hirschi 2004). The family, as a social institution, should develop conditions in which youth are obligated to conform to normative expectations for social behavior, including adherence to the law (*cf.* Durkheim, 1977 [1914]). Without such conditions, youth would succumb to their impulses, violating social norms and laws (Hirschi, 1969). These conditions include socialization processes, which should be the “molding and controlling influences” (Nye & Weeks, 1956: 291) that prevent undesirable behavior. When socialization processes are not effective at controlling youth behavior, such as familial socialization processes involving violence, then these processes may be associated with increased criminal behavior. The following literature review examines current research that explores the association between socialization processes, including violent familial socialization processes, and self-reported criminal behavior.

Social control through familial socialization processes

Methods of social control have been conceptualized as connected processes (Hirschi, 2004; Vold, Bernard, & Snipes, 2002), in which interdependent relationships between multiple social factors best explain the degree to which youth are involved in criminal behavior (Baker, 2010). The core thesis argued in the revised self-control theory involve two connected processes associated with control over youth behavior: the inculcation of self-control and attachments (*cf.* Hirschi, 2004). Hence, the revised self-control theory provides a strong theoretical framework in which to examine the degree to which familial socialization processes are either effective or ineffective at controlling youth behavior. Specifically, Gottfredson and Hirschi (1990) seem to recognize the possibility of variation within the degree to which familial socialization can control youth behavior, arguing that parents recognize children's deviant behavior and correct for their deviant behavior in different ways. For example, Hirschi (2004) believes that, to fully understand correlates of criminal behavior, there are certain parental 'acts' that contribute to criminal behavior. These parental 'acts' are better measures associated with criminal behavior than youth's attitudes or youth's prior behavior (Morris, Gerber, & Menard, 2011). Such 'acts' may include the various methods families use to control youth behavior, i.e., familial socialization processes.

Differences in familial socialization processes may be due to the presence of effective or ineffective methods used by the family to control youth behavior. Gottfredson and Hirschi argue that it is the degree to which parents exert "adequate

control” (1990: 96) over children’s behavior that instills the ability for youth to self-regulate their own behavior. More recently, Gottfredson (2005) also argues that youth will engage in criminal behavior if there are no restraints present to prevent such behavior. What if restraints are present, but such restraints are ineffective at controlling criminal behavior? The lack of attachment to youth in order to effectuate adequate control, as well as the presence of violent methods of control, could be associated with criminal behavior.

Criminological research has consistently identified a number of variables associated with the interdependent relationship of familial socialization. Specifically, these variables include attachments (e.g., Barnes et al., 2006; Bjarnason, Thorlindsson, Sigfusdottir & Welch, 2005; Bui, 2009; Goetting, 1994; Herrenkohl, Huang, Tajima & Whitney, 2003; Luthar & Goldstein, 2008; Matherne & Thomas, 2001; Parker & Benson, 2004; Turner, Hartman & Bishop, 2007) and self-control (e.g., Gibson, Morris & Beaver, 2009; Grasmick, Tittle, Bursik & Arneklev, 1993; Piquero & Bouffard, 2007; Rebellon, Straus & Medeiros, 2008). As stated previously, this has been referred to as the parental socialization thesis (Beaver Wright, & Delisi, 2007; Boyd & Higgins, 2006; De Li, 2004). Under the conceptual framework of social control theories, these variables are hypothesized to effectively control criminal behavior.

Attachment

Attachments are the supportive relationships families create with youth as one method in which to control youth behavior. Attachments within the family are formed

through the socialization process (e.g., Bowlby, 1969; Bowlby, 1973). Under the parental socialization thesis, attachments within the family have been operationalized as parent-child bonds (Morris, Gerber, & Menard, 2011). According to the revised self-control theory, this bond makes youth less likely to be drawn towards criminal behavior (*cf.* Hirschi, 2004). In other words, attachments may be a method of effective familial socialization. As an example, one familial socialization process that should effectively develop attachments is parental affection. Parental affection can include help and nurturance towards youth. If the family, and particularly parents, displays affection and support towards youth, this should create a bond. Youth may want to maintain the affection and support of the family. Consequently, youth do not engage in behavior that might disappoint their family and weaken the bond. Hence, cohesive familial relationships are integral for the effective functioning of the family (Erikson, 1950) and an important aspect of familial socialization that serves to control youth behavior.

Current research, regardless of design, sample, or type of analysis, has shown that low levels of parental nurturance towards youth increase the likelihood of youth engaging in criminal behavior (Hurrelman, 1990; Johnson & Pandina, 1991; Pittman & Chase-Lansdale, 2001; Sokol-Katz, Dunham & Zimmerman, 1997). However, conceptualizations of family attachments vary, from closeness of relationship and warmth (i.e., relational measures) to parental supervision and discipline (i.e., behavioral measures). In an early study examining the relationship between attachments within the family and criminal behavior, researchers looked at both relational measures and behavior measures of attachments between parents and their incarcerated youth

(Aichhorn, 1963). The study found that the incarcerated youth may have been supervised by their parents and punished for unacceptable behaviors but the lack of both nurturance and love from their parents directly contributed to their criminal behavior. Over time, criminological research has consistently shown that increased family support, such as closeness, love, and attachment, is associated with less criminal behavior (e.g., Bao, Haas & Pi, 2007; Bjarnason, Thorlindsson, Sigfusdottir & Welch, 2005; Matherne & Thomas, 2001; Parker & Benson, 2004). Consistent with these other studies, the present study conceptualizes attachments within the family as both relational measures (e.g., providing comfort towards youth) and behavioral measures (e.g., parents helping youth with homework).

Some research has shown that attachments do not decrease criminal behavior. The findings from these studies may actually be the result of deficient indicators for attachment. For example, Matherne and Thomas (2001) examined the association between family relationships and self-reporting criminal behavior among adolescents. They measured attachment as the level of closeness and loyalty within the family, but failed to define these 'levels' or how these relational measures of attachment were operationalized. And, it should be noted that there was no specific mention of attachments within the findings (Matherne & Thomas, 2001). In their study, they seem to focus more on the structure of the family, such as who lives in the household with the youth, rather than the parent-child bond. To ensure the validity of measuring the parent-child bond, the present study explicitly measures the degree to which youth report a supportive relationship within their family.

Research has also found that attachments *alone* are not necessarily associated with the prevention of criminal behavior (Brezina, 1998). Other social factors may also contribute to methods of control over youth behavior. The revised self-control theory does not explain control over criminal behavior via attachments alone. Rather, the theory specifically discusses measures associated with youth's ability to self-regulate their behavior. Thus, the present study also includes measures of self-control in order to examine the overall parental socialization thesis.

Self-control

According to the original self-control theory, criminal behavior results from an individual lack of self-control (*cf.* Gottfredson & Hirschi, 1990). In the absence of self-control, youth may engage in criminal behavior, pursuing "immediate, certain, easy benefits" (Gottfredson & Hirschi, 1990: 42), seeking instant gratification, pleasure and excitement (Gibson, Morris & Beaver, 2009) by engaging in risk-taking behavior (Rebellon, Straus & Medeiros, 2008).

The family is responsible to instill youth's ability to self-regulate behavior (Johnson et al., 2011). Specifically, Gottfredson and Hirschi (1990) argue, in part, that to prevent criminal behavior, deviant behavior must be recognized and parents must immediately discipline the deviant behavior observed in the child. To accomplish these tasks of socialization, parents must (1) set clear rules, (2) recognize rule violations, and (3) immediately discipline youth when rules are violated in order to inculcate self-control

(Gottfredson & Hirschi, 1990). These familial socialization processes should be effective in controlling youth behavior, by instilling self-control within youth.

When families fail to effectively socialize youth, youth may be unable to self-regulate their behavior (Nye & Weeks, 1956) and be more likely to engage in criminal behavior. A myriad of studies have empirically supported the theoretical premises that a lack of self-control over one's behavior later manifests as criminal behavior (e.g., Bjarnason, et al., 2005; Brezina, 1998; Gibson, Morris & Beaver, 2009; Grasmick, Tittle, Bursik & Arneklev, 1993; Luthar & Goldstein, 2008; Parker & Benson, 2004; Piquero & Bouffard, 2007; Robertson, Baird-Thomas & Stein, 2008; Vazsonyi & Flannery, 1997). In a meta-analysis, Pratt and Cullen (2000) found, after analyzing 21 studies using 17 different datasets, that varying measures of low self-control were the strongest empirical explanation for criminal behavior. Regardless of the type of measurement, whether attitudinal or behavioral, the majority of studies they examined supported self-control theory. In fact, their analysis revealed that in order to refute the empirical relationship between low self-control and criminal behavior results from approximately 428 studies countering the effects of low self-control would be needed (Pratt & Cullen, 2000). Given these findings, self-control theory has become a dominant paradigm in modern criminological theory for explaining predictors associated with individual criminal behavior.

The revised self-control theory and criminal behavior

In the revised self-control theory, Gottfredson (2005) and Hirschi (2004) argue that self-control and attachments are conceptually equal. This equivalency was their main reason for revising the original self-control theory. Yet, there have been few published studies empirically testing this newly conceptualized “self-control/ social bonds” thesis (Morris, Gerber & Menard, 2011), particularly as the re-conceptualization relates to the parental socialization thesis. When Hirschi (2004) tested the revised self-control theory, he used nine different measures of attachments to represent self-control. In other words, Hirschi measured self-control by the number of attachments the youth reported having. Of these nine different types of attachments, most measures were comprised of school-based indicators. He did not focus on attachments within the family. He did not separate the family based measures from the school-based attachment measures. Since Hirschi argues, in both the original self-control theory (Gottfredson & Hirschi, 1990) and the revised version (Hirschi, 2004), that *parental* discipline instills self-control, his study should have separated the effects of the family-based measures from the school-based measures. Separating family based and school based measures is important for examining the separate effects of primary socialization (family-based measures) and secondary socialization (school-based measures) on criminal behavior. Further, Hirschi’s four family-based measures of attachment focused exclusively on the youth’s mother, and did not test attachments to the father. To expand upon Hirschi’s research, the present study includes measures of attachments relative to *both* parents. These measures attempt to capture *youth’s* level of self-control.

There are published studies that have tested the effects of both self-control and attachments on criminal behavior (e.g., Beaver, Wright & Delisi, 2007; Chapple, Hope & Whitford, 2005; De Li, 2004; Morris, Gerber, & Menard, 2011). In a recent study conducted by Morris, Gerber and Menard (2011), adults between the ages of 36 and 44 were asked to report their criminal behavior (property and violent crime, and fraudulent behaviors), the number and salience of various attachments both within their family and in the community, and attitudinal measures of self-control (see Grasmick, Tittle, Bursik, & Arneklev's [1993] self-control scale). What they found was that each individual predictor separately had the expected impact on criminal behavior, such that more attachments predicted less involvement in criminal behavior and lower levels of self-control predicted higher involvement in criminal behavior. When each of these predictors was included in the same model, the effects of attachments and self-control on criminal behavior were about the same. However, Morris, Gerber and Menard (2011) did not make clear the time frame in which these adults were reporting their criminal behavior: did the criminal behavior occur recently, during their adult years, which is the period in the life course when criminal behavior typically declines or ceases all together (Steffensmeier & Streifel, 1991), or were these adults reporting criminal behavior during adolescence/ emerging adulthood, a time period for which over 10 years had passed and memory recall would be a concern?

Time frames for self-reported criminal behavior are important. The degree to which individuals engage in criminal behavior tends to vary over the life course (Laub & Sampson, 2003). The present study took such considerations into account, and limited

the time frame for offending behavior between age 15 years and age 25 years (i.e., late adolescence and emerging adulthood).

In a different study using the same measures for self-control and attachments, Piquero and Bouffard (2007) surveyed 212 emerging adults at a post-secondary educational institution in the mid-west of the United States. Their measures for criminal behavior included hypothetical scenarios of drunk driving and, for the male youth only, sexual coercion. While Hirschi (2004) re-conceptualized self-control as the salience and strength of youth's attachment to others, Piquero and Bouffard measured Hirschi's (2004) redefined self-control as the youth fore-seeing possible consequences of their predicted behavior. The purpose of their study was to determine which measures of self-control were better predictors for criminal behavior: Hirschi's revised operationalization of self-control (2004) or the attitudinal measures of self-control developed by Grasmick and colleagues (1993). Piquero and Bouffard (2007) found that attachments did not significantly predict either of their hypothetical scenarios. The attitudinal measure of self-control, however, did significantly predict criminal behavior even when accounting for the effects of attachments. Piquero and Bouffard's study may be among one of the first published research projects to demonstrate the salience of self-control, over attachments, in controlling youth behavior.

There were a few limitations to Piquero and Bouffard's study. First, their interpretation of Hirschi's revised self-control is only a partial definition of the revised self-control theory, and perhaps not the emphasis of the definition. Hirschi seemed clear in re-conceptualizing and re-operationalizing self-control as youth being concerned with

the opinions of others to whom the youth is attached (2004) rather than solely contemplating long term benefits or consequences alone. Piquero and Bouffard outlined this mistake. Second, these youth were asked about hypothetical scenarios, not actual behavior. In reality, these youth may or may not actually engage in the proposed hypothetical behaviors. Because the scenarios are not included with the article, the actual behaviors these youth are reporting may not be criminal in nature. For example, a male youth convincing a female dating partner to have sexual relations may be part of coercive behaviors, but does not necessarily constitute a crime. As such, these offending measures may not be valid representations of criminal behavior. This second limitation was also noted by Piquero and Bouffard, and they called for future studies to use different measures of criminal behavior. The present study focused on *actual* criminal behavior and used a more universal measure of criminal behavior: violent crime, in terms of assaultive behavior, and property crime defined as theft.

Based on this literature, the strong theoretical association between self-control theory and criminal behavior seems to hold true for both the original theory and the revised theory. Cretacci's studies on the conceptual differences between the original and revised self-control theories exemplify this area of criminology. He deliberately included measures of both attachments and self-control within the same model in order to test which predictor had a stronger empirical association with criminal behavior. Cretacci (2009a) found that low self-control was a stronger explanation for property crime than weak attachments to others. But, weak attachments to others better explained violent crime compared to low self-control. In another study, Cretacci (2009b) found that low

self-control was an important predictor for some criminal behavior (e.g., property crime), but not *the* most important determinant for all criminal behavior. So while low self-control may clearly be a strong correlate of criminal behavior, not all research has supported the notion that low self-control *alone* fully explains all criminal behavior. Ongoing research is still needed to continue to test the components of the revised self-control theory.

Summary

Overall, the current research demonstrates the efficacy of self-control theory in explaining the impact of familial socialization processes on preventing criminal behavior (e.g., Boyd & Higgins, 2006; Gibbs, Giever, & Martin, 1998; Johnson et al., 2011; Piquero & Bouffard, 2007). Yet, these studies do not necessarily take the position that the parental socialization thesis also discusses ineffective familial socialization processes that may fail to prevent criminal behavior. Specifically, in their discussions of the ‘parental socialization thesis, Gottfredson and Hirschi (1990) seem to take the position that criminal behavior is a product of the *absence* of effective socialization, the result of negative factors within the family. Gottfredson and Hirschi recognized that “not all [parents] punish effectively” (1990: 100), and some families do not develop strong attachments with their children (Hirschi, 2004). It has been argued elsewhere that ineffective familial socialization processes are one of the best predictors associated with involvement in criminal behavior (Loeber & Dishion 1983). Specifically, familial socialization processes that are overly punitive and do not provide comfort or care

towards youth may contribute to youth's inability to self-regulate their criminal behavior (Wright & Cullen, 2001). Therefore, some familial socialization processes could be considered counter-productive. Violent familial socialization processes may be one example of ineffective familial socialization processes that may fail to instill the ability of youth to control their criminal behavior.

Violent socialization within the family

As discussed previously, violent familial socialization processes include three components: violent discipline, exposure to violence, and violent communication. These violent familial socialization processes are conceptualized as the combination of interdependent, violent methods of control used by the family that are ineffective at controlling youth behavior. In other words, violent familial socialization processes include multiple different violence-based behaviors within the family that fail to socialize youth towards developing the ability to self-regulate their behavior. Ultimately these violent based methods of socialization may offer little to no control over youth's behavior.

In their discussion of the 'negative factors' that influence a "defective upbringing," and hence reduce the ability for youth to self-regulate their behavior, Gottfredson and Hirschi do not provide a detailed description of ineffective familial socialization processes. They limit their discussion to "yelling and screaming, slapping and hitting" (Gottfredson & Hirschi, 1990: 100-101). As such, the use of physical

discipline could be interpreted as an ineffective familial socialization process under their definition. Self-control theory, therefore, appears to differentiate dysfunctional familial socialization processes that would not serve to instill self-control from effective socialization processes that inculcate youth with the ability to control their own behavior. This would indicate that studying the association between violent familial socialization processes and criminal behavior is instrumental to understand the extent to which some familial socialization processes, such as violent familial socialization processes, may not prevent criminal behavior.

There has been some research that identifies singular aspects of violent familial socialization processes failing to control criminal behavior (e.g., Brezina, 1998; Robertson, Baird-Thomas & Stein, 2008). Specifically, in a review of the published research on the physical discipline of children during the past 100 years, Gershoff (2008) shows that youth who experienced physical discipline frequently or severely are more likely to use physical violence as an adult against a dating partner, spouse, or other family member. This literature review was focused solely on the use of physical discipline towards youth and did not include the other aspects of violent familial socialization processes. In this sense, few published studies have examined violent familial socialization processes *as a whole* failing to prevent criminal behavior. Filling this gap in the literature, the present study explores all three dimensions of violent familial socialization processes and the degree to which these processes are ineffective at controlling youth behavior.

Violent Discipline

Violent discipline involves physical discipline that is frequent and occurs during both childhood and adolescence. Some have suggested that the purpose of physical discipline is to prevent youth from overreaching the boundaries of acceptable behavior, to correct unacceptable or change undesirable behavior (Gagné, et al., 2007; Socolar & Stein, 1995). Gottfredson and Hirschi (1990) argue that ‘slapping’ and ‘hitting’ are “unloving forms of punishment” (Gottfredson, 2005: 86). Theoretically, then, physical discipline would be ineffective at disciplining youth and at preventing youth from engaging in criminal behavior.

Many experts have come to see physical discipline as ineffective (e.g., Capaldi, Chamberlain, & Patterson, 1997; Gershoff, & Bitensky, 2007), including being ineffective at controlling youth behavior. There is a fine line between what constitutes as physical discipline and the physical abuse of youth. Some experts have defined extreme or violent discipline as excessive physical discipline of children (e.g., see Greven, 1992; Payne, Higgins, & Blackwell, 2010; Taylor, Hamvas, & Paris, 2011; Zolotor et al., 2008). Other experts argue that physical discipline should be considered abusive (e.g., Bauman & Friedman, 1998; Crosson-Tower, 2008; Lee & Kim, 2011; Straus & Donnelly, 1994; Taylor, Hamvas, & Paris, 2011; Zolotor, et al., 2008). In fact, the United Nations now includes in their definition of violence against children the use of physical discipline (Pinheiro, 2006). Hence, excessive physical discipline, engaged consistently by parents, may actually be violence rather than a method to control youth behavior.

The current literature suggests a general relationship between violent discipline and criminal behavior (e.g., Goddard, Goff, Melancon, & Huebner, 2000; Teague, Mazerolle, Legosz & Sanderson, 2008). One study examining the relationship between violent discipline and criminal behavior used data from the 1970's National Youth Study to examine the relationship between self-control and criminal behavior (Rebellion & Van Gundy, 2005). Specifically, the study tested the effect of physical abuse from a parent on self-reported delinquency (i.e., criminal behavior by a minor). Physical abuse was defined as 'being beaten by a parent.' The study found that adolescents who reported experiencing physical abuse by a parent tended to report more involvement in delinquency, including property and violent crime (Rebellion & Van Gundy, 2005). This result remained consistent when measures of attachments were included in the model.

While these results could suggest that physical abuse promotes delinquency for reasons other than self-control theory (Rebellion & Van Gundy, 2005), the goodness of fit statistics (i.e., log likelihood) indicates that including the attachment variables within the model provides a better overall fit. One measure of attachments was significantly associated with criminal behavior, in that higher quality relationships between youth and parents significantly reduced criminal behavior. As such, these results could also be interpreted as consistent with the revised self-control theory. As stated previously, Gottfredson (2005) and Hirschi (2004) argue that measures of self-control and attachments (i.e., social bonding) are equivalent. Higher levels of attachments should effectively prevent criminal behavior while measures of violent discipline should increase criminal behavior.

But overall, the results of the Rebellion and Van Gundy study may not fully represent violent discipline among youth. The study used a single, severe measure of physical abuse. While physical abuse can be extreme, not all physical punishment involves the extremity of being 'beaten up' by a parent. The item could have been misinterpreted by the respondents to the survey, as only 6% of the sample provided affirmative answers for this measure. As outlined previously, excessive physical discipline can also be considered abuse. Instead, the youth in the Rebellion and Van Gundy study should have been asked about their experiences with physical discipline and the degree in which physical discipline occurred over time. Therefore, the present study examines physical discipline over time rather than a single, extreme measure of physical abuse.

A more recently published study examining the relationship between violent discipline and delinquency among adolescents was conducted by Robertson, Baird-Thomas and Stein (2008). This study measured a range of physical abuse by a parent, from hitting to using an object or weapon to injuries requiring hospitalization. While physical abuse significantly predicted delinquent behavior, the measure of delinquency was not necessarily criminal behavior. Robertson, Baird-Thomas and Stein (2008) measured delinquency as (1) school suspensions, without clarifying the reason for the suspension, (2) gang membership, and (3) prior detentions. Youth can be suspended from school or sent to detention for status offenses, non-criminal violations specific to youth's age. Gang membership in and of itself does not always connote involvement in criminal behavior. Robertson, Baird-Thomas and Stein's study cannot draw a correlation

between physical abuse and delinquency with confidence. Rather, delinquency should have been measured as crime, particularly given that the sample is described as youth who were incarcerated. The present study explicitly measures criminal behavior as property and violent crime, offenses that would be considered crime regardless of the youth's age, in order to avoid validity issues with definitions of crime.

Given the position, within the current literature, that physical discipline could be considered a violent method of control, physical discipline may fail to properly socialize youth in a manner that develops youth's ability to self-regulate their behavior. Physical discipline, ultimately, may offer little to no control over youth's behavior.

Exposure to Violence

Another dimension of violent familial socialization processes involves consistent exposure to violence within the family. When parents are unable to "subordinate" their own behavior in order to meet the welfare of their child, these parents are failing to effectively socialize their children (Gottfredson, 2005: 87). In fact, witnessing violence amongst family members may expose youth to adults with a lack of self-control. Specifically, Gover et al. (2011) studied the association between low self-control and the presence of dating violence within an intimate relationship among college-aged youth. They found that, among the American sample, low self-control was a risk factor for perpetrating physical violence against an intimate dating partner. While not conclusive, such findings seem to support the idea that family members who perpetrate violence against other family members lack self-control. Those who lack self-control may not be

able to recognize their behavior as deviant. Gottfredson and Hirschi's argue that one's level of self-control influences their judgment, a factor "affecting calculation of the consequences of one's acts" (1990: 95). More importantly, parents who cannot recognize the lack of control in their own behavior may not recognize their own deviant behavior. By extension, these parents may not be able to recognize deviant within youth.

Parents who fail to control violent behavior within their family would, under the theoretical argument of self-control theory, also fail to instill self-control within youth. Violence may be the acceptable means in which to resolve conflict (Straus & Donnelly, 1994) and not viewed as a behavior that needs to be self-regulated. Argued by Hirschi, "belief in the moral validity of social rules" is a necessary part of familial socialization processes (1969: 26), and effective familial socialization processes should instill within children a sense of others' "feelings and personal rights" (Gottfredson & Hirschi, 1990: 97). This includes the right to live without violence. The family has a responsibility to instill a sense of personal limitations for unacceptable behavior (Kendall, 2010). Youth should be socialized to know violence against others is wrong, and violent behavior must be controlled. The perpetration of family violence is not conducive to socialization that effectively inculcates self-control among the youthful members of the family.

Research supports this hypothesis. Exposure to violence, in general, may interfere with youth's development of self-control and increase criminal behavior. Spano, Rivera, & Bolland (2010) found that youth chronically exposed to violence were more likely to engage in violent behavior later in life than those youth who were not exposed to violence. Youth who are consistently exposed to violence within their family

may be socialized by parents who lack self-control themselves and fail to recognize deviant behavior. The argument is not that exposure to violence is a sort of modeling process that teaches youth to be violent, but rather the failure by parents to recognize deviant behavior, in terms of violence, may contribute to the inadequate development of self-control within youth. As outlined previously, socialization must include recognition that violence is wrong. These specific findings may be limited in explaining the relationship between violent familial socialization processes and criminal behavior, as other social factors might have confounded the results: the sample focused solely on minority American youth residing in extreme poverty within urban centers. Nonetheless, familial socialization processes that include consistent exposure to violence may contribute to the ineffective control of youth behavior.

Violence within the family often manifests concurrently and in multiple different ways (Crosson-Tower, 2008). While research has shown that youth who are exposed to violence within their family may later act out violently towards others (e.g., Forbes & Adams-Curtis, 2001; Margolin & Gordis, 2000), and there is a direct link between exposure to family violence and delinquency (Hamby, Finkelhor, Turner, & Ormrod, 2011; Herrenkohl, et al., 2008; Smith & Thornberry, 1995), many of these studies examined exposure to violence within the family without examining other manifestations of violence. In a recent study that looked at the combined effects of physical abuse and exposure to family violence, Sousa and colleagues (2011) found that (1) physical abuse alone was not associated with either criminal behavior or violent behavior by youth, and (2) exposure to family violence was associated with violent behavior by youth but not

necessarily criminal behavior. However, the combined effects of physical abuse *and* exposure to family violence were significantly associated with both criminal behavior and violent behavior by youth (Sousa et al., 2011). But, the sample from Sousa and colleagues' study derived from a limited group of young children in the Lehigh Longitudinal Study (see Herrenkohl, Herrenkohl, Egolf, & Wu, 1991). Most of these children were from the child welfare programs in two counties within Pennsylvania already at high risk for criminal behavior. Given the limited scope of their sample, the present study uses a more general population compared to high risk youth to examine the degree to which physical discipline and exposure to family violence fail to control criminal behavior.

Violent Communication

Violent communication is the third dimension of violent familial socialization processes, in addition to excessive physical discipline and exposure to family violence. Violent communication involves parents telling youth to respond to violence with their own violence. In general, parental communications that tell youth to respond to violence with their own violence tends to be deviant within contemporary mainstream society (Ohene, Ireland, McNeely, & Borowsky, 2006). Communication within the family needs to demonstrate the recognition of norms of society rather than support deviance (Gorman-Smith & Tolan, 1998). Again, Gottfredson and Hirschi (1990) argue that parents who do not recognize deviant behavior do not engage in effective socialization processes, and, in particular, fail to instill self-control within youth. Communication, then, is important in

understanding the control of deviant behavior (Ellickson & Morton, 1999), including criminal behavior. Violent communication, then, may not effectively control youth behavior, by failing to inculcate the ability for youth to self-regulate their behavior.

While there were no published studies located that examine the relationship between violent communication and criminal behavior specifically, there were some analogous studies related to parental recognition of deviant behavior and violent behavior among youth. In a study to determine parental attitudes towards youth's use of violence, Ojo, Akintomide, and Omoyemiju (2011) surveyed 500 parents of school children within a school district for one Nigerian state. Out of the 500 parents, 131 (26.2%) parents answered that they would advise their child to use violence to retaliate against another youth hitting or teasing them at school (i.e., bullying). While the study reported parents from this area of Nigeria are known, traditionally, to advise youth to use violence in response to bullying at school and this type of violent communication has occurred repeatedly over multiple generations, Ojo, Akintomide, & Omoyemiju (2011) report that this type of violent communication is considered deviant. For example, only one-fourth of the sampled parents reported they engaged in violent communication with their youth. Thus, parent responses to this survey may be subject to under-reporting due to social desirability. The results of the research clearly do not match the 'common knowledge' of this specific area within Africa. Parents may not want to admit openly that they tell youth to engage in violence, including bullying, as a means of resolving conflict at school. Ojo, Akintomide, and Omoyemiju's study did not control for social desirability. Perhaps a better approach to capturing such sensitive information is to inquire *of the*

youth if they were told by their parents to engage violence if another youth insults or hits them. The present study uses data that asked youth directly about receiving such violent communication from their parents, as well as including a measure of social desirability to control for the degree to which youth may have answered in a perceived favorable manner.

In another study, 134 parents of youth seen at eight out-patient pediatric practices in a major metropolitan area of the United States were surveyed to ascertain what actions they would take if their child faced a potentially violent situation (Ohene, Ireland, McNeely, & Borowsky, 2006). Among the parents who participated in the survey, 38.1% of the parents reported that they would tell youth to use violence if their child was hit by another youth (Ohene, Ireland, McNeely, & Borowsky, 2006). In other words, Ohene and colleagues found more than one-third of these parents failed to recognize deviant behavior, in the form of violence, because they would use violent communication with youth.

Telling youth to use violence to resolve conflict could be more of a reactive behavior rather than actively teaching youth to engage in violence. There may be long standing norms in which youth are expected to defend themselves against other youths' violent behavior. These norms may be perpetuated through communications with youth, such as telling youth to engage in violence when confronted with violence. Such violent communications may not be pre-planned. Instead, the violent communication may occur within the moment that parents become aware that their child is being confronted with violence. As such, parents' emotional reactions to youth being confronted with violence

may supersede their ability to recognize that their violent communication is deviant behavior. After all, parents who tell youth to use violence to resolve conflict are advising those youth to engage in at least one type of criminal behavior (i.e., assault). These parents are not necessarily showing youth the techniques for committing crime or telling youth specific motives and rationalizations for engaging in violence, nor are these youth developing an affinity for violating the law (*cf.* differential associated theory [Sutherland, 1974]). Parents may not even be consciously aware that they are telling youth to engage in deviant behavior within the moment. As such, violent communication is not an issue of learning deviant behavior but rather an issue of failure to control youth behavior via a failure to recognize deviant behavior.

The chance of the youth within Ohene and colleagues' study engaging in violent behavior towards other youth was probably present prior to the research, given that this study sampled only youth who had been identified as having psychosocial behavioral problems prior to administration of the survey. As such, the results could possibly be linked to factors other than parents' failure to instill self-control within their youth (i.e., using violent communication). To address this concern, the present study uses a more general sample compared to a purposive sample of youth who may be predisposed to violent behavior.

Violent Familial Socialization Processes and Self-Control Theory

These three dimensions, violent discipline, exposure to violence and violent communication, constitute violent familial socialization processes. These processes

cannot be separated out into singular dimensions, such as examining the effects of physical discipline alone on criminal behavior. Again, violent familial socialization processes are interdependent, violent methods of control used by the family that hinder the ability of the family to instill self-control among youth.

In Gottfredson and Hirschi's (1990) discussion of the parental socialization thesis, familial socialization used to control youth behavior seems to be described as processes. They combine several different dimensions of socialization to explain control over youth behavior, including attachments within the family, the recognition of deviant behavior, and punishment of deviant behavior. While a combination of processes comprises the socialization of youth, not all familial socialization processes are effective. Criminal behavior can become the standard of behavior among youth (Fonagy et al., 1997), if familial socialization processes are ineffective due to violence.

The main difference between the original self-control theory and the revised self-control theory is the concept of attachments. Specifically, they argue that self-control is instilled, in part, through effective discipline, and positive attachments within the family (Gottfredson, 2005; Hirschi, 2004). But, attachments may occur within violent familial socialization. The family can be supportive of the youth, providing understanding to the youth and helping the youth with problems they experience, while failing to support the development of self-control because parents fail to recognize deviant behavior or use violent discipline.

Any study examining the parental socialization thesis, within the revised self-control theory, would need to test the concepts of this thesis in conjunction with both

attachments within the family and individual self-control. But there appears to be limited research examining the parental socialization thesis through the revised self-control theory. As outlined in this literature review, many studies focus on either dimensions of violent familial socialization processes or attachments.

A recently published study empirically tested both of these components of the revised self-control theory. Conceptualized as nurturance, attachments were measured as parental support, affection, and closeness towards youth (Johnson et al., 2011). Although not quite the same as violent familial socialization processes, this study also included a measure of violent discipline (e.g., hitting or slapping the youth) by the youth's parent as a control variable. The study found that while parental support was associated with less criminal behavior among the youth sampled, this relationship was mediated by youths' associations with criminal peers when accounting for the effects of violent discipline towards youth (Johnson et al., 2011). These results might indicate that while parents who engage in violent familial socialization processes probably do form some type of attachment with youth, these attachments may not necessarily be effective at controlling youth behavior.

However, studies conducted previous to Johnson and colleagues' research have found that physical abuse, in combination with low parent-child bonding, significantly increases the risk of criminal behavior (Teague, Mazerolle, Legosz & Sanderson, 2008). So while the argument could be made that overly punitive parental control can contribute to increased criminal behavior, as violent conflict between youth and parents did significantly increase criminal behavior among the youth sampled in the Johnson and

colleagues' study (2011) and other studies have shown that poor parent–child interactions are associated with various types of criminal behavior (e.g. Goetting, 1994; Herrenkohl, Huang, Tajima & Whitney, 2003), these previous studies did not fully examine the parental socialization thesis. The studies did not include measures of self-control. Therefore, the present study examines the parental socialization thesis within the conceptual framework of the revised self-control theory, by exploring the association between violent familial socialization processes, in conjunction with both attachments and self-control, and criminal behavior.

Violent Familial Socialization Processes: Social Control or Social Learning?

From a social control theory perspective, violent familial socialization processes are not the equivalent of teaching youth deviant behaviors or youth learning violent behavior. Violent familial socialization processes are the absence of effective socialization by the family. Social learning theories argue that youth learn to be violent from observing their family engage in violent behavior then modeling this behavior (*cf.* Bandura, 1977). Youth may learn unacceptable behavior by mimicking their parents repeatedly (Ormrod, 1999), including the modeling of discipline during play (Midlarsky, Bryan, & Brickman, 1973). According to social learning theories, these learned behaviors are then either positively reinforced (i.e., rewards) or negatively punished (i.e., sanctions), motivating future engagement in or avoidance of the learned behaviors (Akers, 2009). Discipline, according to self-control theory, is a familial socialization process intended to instill in youth the ability to self-regulate their behavior (Gottfredson

& Hirschi, 1990). The argument is that discipline is necessary to correct and control undesirable behavior, not necessarily to model socially approved behavior for children. Violent discipline, in conjunction with the failure to recognize deviant behavior due to other dimensions of violent familial socialization processes, may be ineffective at controlling youth behavior.

Further, the main argument of social control theories of crime is that motivation is constant for all youth. These theories argue that all youth are prone to engage in criminal behavior. In fact, criminal behavior is a natural type of behavior that needs to be controlled by the family. Increasing motivation is *not* a necessary condition for engaging in criminal behavior. Rather motivation for criminal behavior is constant among youth (Gottfredson, 2005). Thus, any theory of crime that operates under the premise of motivated behavior, e.g., Ryan and Deci's (2000) self-determinate theory arguing that youth tend to be motivated to learn to behave in effective and healthy ways, including self-regulation over their own behavior, is inconsistent with social control theories of crime. This includes the revised self-control theory.

Summary

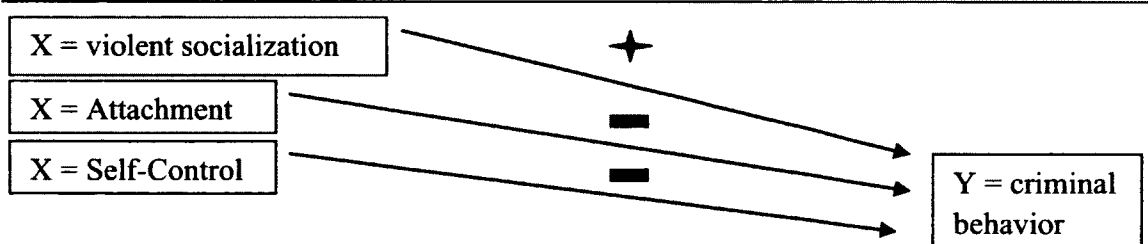
The re-conceptualized self-control theory (*cf.* Hirschi, 2004) supports the need to explore the association between violent familial socialization processes and criminal behavior under the parental socialization thesis. Gottfredson and Hirschi's self-control theory argues, in essence, that children must be effectively socialized to instill self-control and prevent criminal behavior. As discussed previously, the focus of the theory is

the idea that self-regulation results from the specific familial socialization processes (Buker, 2011), e.g., discipline and attachments, referred to as the parental socialization thesis.

The current literature has established that a combination of familial socialization processes is widely associated with criminal behavior (Schmallegger & Bartollas, 2008) and that criminal behavior is associated with diverse and complex factors (Church, Wharton & Taylor, 2009; Edwards, 1996). Violent familial socialization processes could arguably be a combination of processes contributing to the defective upbringing of youth and therefore ineffective at controlling youth behavior. This assumption needs to be empirically tested to determine if it is true. As such, the present study tests the hypothesis that (H₁) *youth from families that use violent socialization processes will engage in more criminal behavior, compared to youth from families that do not use violent familial socialization processes, even in the presence of effective familial socialization processes (i.e., high self-control and strong family attachments)*. Figure 1 shows this hypothesized relationship.

Figure 1.

Causal diagram for the relationship between violent familial socialization processes and criminal behavior



Yet, the currently published literature tends to neglect the multiple dimensions of violent socialization within the family as ineffective methods to control youth behavior when examining the parental socialization thesis of the revised self-control theory. The present study expands upon the current literature by examining the *multiple* dimensions of violent familial socialization processes that *together* fail to control criminal behavior, while also testing for the effects of attachments and self-control, on criminal behavior.

Violent socialization as part of a norm of violence

Research has consistently demonstrated that socialization processes within individual families are associated with criminal behavior (Goddard, Goff, Melancon & Huebner, 2000). Yet, individual-level variables (i.e., family) do not capture the full degree to which socialization processes may prevent criminal behavior (Morrongiello, Corbett, & Bellissimo, 2008). Gottfredson and Hirschi specifically state “self-control is presumably a product of socialization and the *current circumstance of life*” [emphasis added] (1990: 179).

Current life circumstances

As stated previously, Gottfredson and Hirschi argue that life circumstances contribute to crime only when the life circumstances are random (1990: 236). They argue that individuals do not sort themselves randomly into peer relationships or marriages, given that individuals choose their peers or their marriage partners. Yet children do not self-select into the nation in which they live; they reside in the nation of

their ancestors or a nation of their parents' choosing. Children also do not self-select into a family. Children are born, or otherwise chosen by others, into a family. Under such 'random' conditions, children are subject to the circumstances of both their individual families and the conditions common to a nation. Random life circumstances involve the location in which children reside. Placement into either the family or a nation is more by chance than the child's choice.

Conditions common to a nation may include group practices of socialization among aggregates of families. Others have argued that socializing youth to have self-control is part of 'collective socialization,' a context in which socialization occurs above and beyond the socialization of youth by their individual families (Pratt, Turner, & Piquero, 2004). Gottfredson and Hirschi claim that the "conditions under which life events affect criminal behavior" are not "random" or "accidental" (1990: 236). But, could there not be 'random' life circumstances that may be associated with criminal behavior.

Gottfredson and Hirschi seemed to have taken the position within their original argument that self-control theory applies universally across groups, such that "important correlates of crime do not vary across cultures" (1990: 178). Therefore, under this argument, norms within a nation would not contribute to criminal behavior. However, Hirschi explicitly states in the revised self-control theory, that he "abandon[ed] the instability assumption of social control theory" (Hirschi, 2004: 543). Hirschi seems to suggest, instead, that correlates of criminal behavior may occur within a context, that "the behavior of individuals is a function of the strength of 'societies' " (2004: 540). Might

then norms of violence, i.e., violent conditions present in any given nation, be more or less conducive, overall, to control over youth behavior? Before answering this question, the literature discussing contexts specific to a nation in which violence could affect criminal behavior among the youth living within that nation is explored.

The context of aggregate socialization processes

The social practices of aggregates of families within a given nation can constitute a context for the socialization of youth within that nation. Knowles (1996) argues there are multiple different regulatory forces within a nation, including formal laws and informal social norms, which can shape the behaviors for aggregates of families. Each society establishes a “spectrum of acceptable behavior in family” through a “web of social practices” (Knowles, 1996: 33) used to control behavior. For example, despite the use of physical discipline being considered violent behavior (Straus & Donnelly, 1994), the use of physical discipline to correct youth’s behavior is still considered a norm within the United States (Zolotor et al., 2011). Yet, physical discipline has been legally prohibited in Sweden (Gumbrecht, 2011) because physical discipline is considered violent behavior in Sweden (Eriksson, 2010; Janson, Långberg, & Svensson, 2011). Therefore, the norms surrounding aggregates of families within any given nation may create a context which “shapes the strategies of parenting” used to control youth behavior (Furstenburg, 1993:255) among the aggregates of families within that nation.

Some research has helped to shape theoretical arguments for variation in socialization processes across different groups of families. For example, Annette Lareau

explored contextual effects that influenced the socialization processes of different families. Through her research, she claims there may be distinct forms of socialization processes among groups of families based on socio-economic status. In particular, Lareau (2002, 2003) argues that families of lower social class tend to use physical discipline as the primary method to control youth behavior, while families of higher social class tend to engage in methods of communication (e.g., negotiation) when controlling youth behavior. While Lareau's specific findings are not related to the purpose of the present study, the overall implications of her studies suggesting that methods of control used by families to control youth behavior were not individual decisions, or marked by individual influences, illustrates the concept of socialization processes occurring within a context. Lareau's research demonstrates that entire communities of families may consistently engage in similar methods to control youth behavior, including the presence or absence of physical discipline.

Rutter (1981) argues that cross-national research is one of the most important areas in which to continue research that examines aspects of community life that may have bearing on the socialization processes of families. He found that the community creates a context which influences the ability of individual families to function either effectively or ineffectively (Rutter, 1981). Aggregates of families engaging in ineffective familial socialization processes may simply be groups of vulnerable families residing within the same community (Bronfenbrenner, 1986). When familial socialization processes are violent, this violence may be part of the norms of any given nation.

Socialization processes, then, becomes part of a social context, a context beyond the socialization processes of individual families.

Contextual effect of living within a specific nation

The conditions specific within any nation could create a context of acceptable boundaries for socialization processes, such as the extent to which violence is used within socialization processes. Violence may be more common within socialization processes among the aggregates of families living in the same nation. Specifically, the location of a family, including the nation in which they reside, can influence socialization processes (Furstenburg, 1993). Violent methods of social control may be part of a greater context in which violence, in general, is part of the conditions of a nation. For example, Mackie and LeJeune (2009) argue that violence against youth within individual families is influenced by the behaviors that occur within other individual families. This lends support to the argument that violent methods of socialization may not be confined to individual families. Rather, there may be a normalizing effect to violence because aggregates of families within any given nation engage in violent socialization processes.

The results of Mackie and LeJeune's (2009) research favor this argument. They found that when groups of families *all* disapprove violence against youth, an individual family tends to be less likely to engage in violence against youth. They concluded that this decrease in the likelihood of violence among individual families may be due to social disapproval within the community of families (Mackie & LeJeune, 2009). Based off these findings, the argument could be made that aggregates of families within any given

nation may be more likely to engage violent socialization processes towards youth if violent socialization processes are part of a norm of violence within the nation. In other words, while violent socialization can occur within individual families, violent socialization could also be part of 'norms of violence' within a nation.

Norms of violence

Different nations embrace different norms surrounding the acceptability of violence. This is not a new argument, per se. Straus (2001, 2004) has argued elsewhere that when physical discipline is frequently used on youth, other forms of violence tend to be more acceptable. Straus (2010) refers to this context of violence as a criminogenic effect: a context in which one form of violence may produce other forms of violence, including criminal behavior. Thus, violence may occur within individual familial socialization processes, but the methods of socialization within individual families may be associated with violent socialization occurring at the societal level (see Lansford & Dodge [2008]). This includes the degree to which violent socialization processes occur within a nation above and beyond the socialization processes individual families use to control youth behavior.

The current research provides examples of socialization occurring within a context of social norms, and specifically norms of violence. One area of socialization specific to norms of violence is the degree to which individuals tolerate violence within any given nation. Individual acceptance of violence against children tends to be influenced by national views that tolerate violence against children (e.g., see Gabarino,

1997; Lansford et al., 2005; Tang, 2006; Whipple & Richey, 1997). More specifically, Cappa and Kahn (2011) found that, while aggregates of mothers in the majority of nations (94%) reported disapproval for the use of physical discipline on children, mothers in all but two of the 34 nations studied consistently engaged in some form of physical discipline on their children to correct their behaviors (Cappa & Kahn, 2011). In some nations, the discipline used by aggregates of mothers was so severe that it could be considered physical abuse (e.g., hitting the child with an object). Runyan and colleagues (2008) found that while more than half the mothers (55%) used physical discipline on their children in each of the 6 nations studied, the type of physical discipline these mothers used varied nation to nation. For example, harsh physical discipline, such as hitting a child over and over again with a closed fist, ranged from 'rarely ever' used by the mothers in some nations to being used by about one-quarter (29%) of the mothers in other nations. Both of these studies found variation in the use of physical discipline across different nations.

More importantly, the international research is beginning to show contextual effects in socialization processes specific to each individual nation. Runyan and colleagues (2009) and Cappa and Kahn (2011) both attributed variation in the use of physical discipline among the aggregates of mother they studied to nation specific contexts. Specifically, this context in which physical discipline occurred was the socio-economic status of the *nation*, with families living in low- and middle-income nations engaging in more harsh corporal discipline than families living in high-income nations. These two studies describe a contextual effect for the use of physical discipline within the

nation as a whole: socio-economic conditions of nations influencing the group-level methods of social control used within that nation.

There are several other published international studies that specifically examine physical discipline/ abuse across different nations (e.g., Gagné, Tourigny, Joly, & Pouliot-Lapointe, 2007; Jackson, et al., 1999; Qasem, Mustafa, Kazem, & Shah, 1998; Roberts, 2000). The results seem to reflect a pattern of inconsistency in the use of physical discipline, including extreme forms (i.e., physical abuse). Physical discipline of youth does not occur equally across different nations, indicating a possible national context effect. Ultimately, violent familial socialization processes may occur within a context where the tendency towards violent behavior may be nation specific, and one aspect of norms for aggregates of families within that nation. To determine the veracity of this claim, the present study extends Straus' thesis of criminogenic effects, by arguing that violence may be more common within some nations and, in fact, part of the norms of any given nation. Violent socialization processes as the methods used to control youth behavior may be one aspect of 'norms of violence.' Research is needed to examine this hypothesized relationship between violent socialization processes and criminal behavior across different nations.

Analyzing norms of violence

Despite the aforementioned studies finding variation in socialization processes, and specifically the use of physical discipline, across different nations, none of these studies specifically analyzed data to determine if there was significant variation nation to

nation. Most studies use descriptive statistics to compare differences in the use of physical discipline by nation. These analyses, in essence, look only at differences in individual behavior within each nation rather than conduct an analysis that examines the context compares differences among aggregates of families nation to nation. For example, Cappa and Kahn used cross-tabulation to compare (1) attitudes towards physical discipline by nation, and (2) the use of physical discipline by nation. But, in order to examine similarities and differences among aggregates of families across different nations, analyses must include tests for interdependence (Bicchieri & Chavez, 2010). As outlined previously, the socialization processes used by individual families within the same nation to control youth behavior may not be independent of each other.

To account for the degree to which group level similarities in familial socialization processes may occur within the same nation (i.e., clustering of youth via socialization processes), as well as differences across nations, multilevel modeling regression analysis is necessary (Bickle, 2007; Luke, 2004; Raudenbush & Bryk, 2002). Multilevel modeling regression analysis accounts for the effects of clustering within the same nation while estimating a relationship across different nations. In order to determine if there is significant variation in violent familial socialization processes across different nations and if this variation significantly contributes to differences in criminal behavior cross-nationally, the present study uses multilevel modeling regression analysis in addition to offering basic descriptive statistics. For example, multi-level modeling tests for significant variation in violent familial socialization process among *individual* families within the same nation, through the self-reports of youth, while at same time

testing for significant variation in the mean level of violent socialization processes among *aggregates* of families across the same nation.

Hence, research is needed to examine the possibility that cross-national variation occurs within the familial socialization processes, consistent with the revised self-control theory, and the extent to which these socialization processes prevent or predict criminal behavior. Gottfredson himself discusses the need to “constantly question” theories of crime, including self-control theory, in order to remain consistent with current literature (2005: 78). Violent familial socialization processes could vary across different nations, and, therefore, the effects of violent familial socialization processes could be associated with variation in criminal behavior. The current literature shows that familial socialization processes, in general, *do* vary across different nations (e.g., Keller, Otto, Lamm, Yovsi & Kartner, 2008; Urquiza & Goodlin-Jones, 1994) and this variation in familial socialization processes has been associated with influencing the degree to which youth may engage in criminal behavior (Maughan & Gardner, 2010).

Summary

Since characteristics that occur at a higher level (i.e., national-level attributes), such as aggregates of families engaging in similar socialization processes to control youth behavior, can influence individual level characteristics (Luke, 2004), perhaps Gottfredson and Hirschi exaggerated a bit in their discussion of the original self-control theory when they made claims of generalization across all nations. As argued elsewhere (Kobayashi,

et al., 2010), it cannot be assumed that the revised self-control theory can be generalized across all nations.

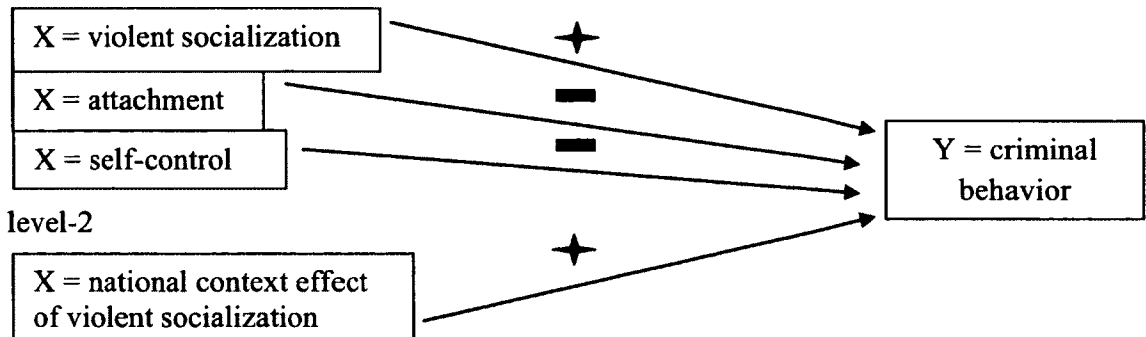
Gottfredson and Hirschi have argued for the necessity of cross-national research in the area of what they call ‘culture dependent variables’, variables that “affect the ease with which events occur” (1990: 179). Yet, there appears to be no published studies that specifically examine an association between socialization processes and criminal behavior across different nations. This seems particularly important because Gottfredson argues that “a general cause should explain crime in different cultural settings” (2005: 84), yet current research is beginning to demonstrate that norms of violence could influence socialization processes within specific nations to be violent. Yet, while there is literature that explores cross-national socialization (e.g., Douglas & Straus, 2006; Montague, 1978), the current literature does not appear to have examined specifically whether or not criminal behavior varies when violent socialization processes are part of norms of violence cross-nationally.

Given there is still the need to examine socialization processes across different nations to understand if norms of violence, as part of the overall context of violence within a nation, could have an impact on controlling criminal behavior within a nation, the present study will test the hypothesis (H₂) that: *criminal behavior will significantly vary nation to nation as a function of violent socialization processes, serving within a context of norms of violence*. Figure 2 shows this second hypothesized relationship.

Figure 2.

Criminal behavior regressed on violent socialization within individual families, attachments within individual families, and individual self-control (level-1) and national context effect of violent familial socialization processes (level 2)

level-1



Social control during late adolescence and emerging adulthood

The concept of 'youth' has traditionally been defined as adolescence, and can encompass ages 10 years to 25 years. Late adolescence has typically been referred to as the period in the life course between ages 18 years and 25 years. A new conceptualization of 'youth' focuses on a transition period between adolescence (up to age 18 years) and adulthood (after age 25 years), known as 'emerging adulthood' (Arnett, 1994; Arnett, 2000) rather than late adolescence.

Late adolescence and emerging adulthood are the stages during the life course when youth are expected to exert independence and begin the transition to adulthood (Arnett, 2000). This independence could include testing the limits of social expectations when youth have more independence and live semi-autonomously. This can include criminal behavior. Youth at these ages may get into physical fights with peers or engage

in physical altercations with their family members. These youth may also test the limits of the law, by stealing, to see if they will get caught.

The currently published literature tends to neglect the importance of familial socialization processes in controlling youth behavior during late adolescence and emerging adulthood by failing to disentangle the effects of the family from other socializing agents. For example, some studies have categorized measures of socialization as a combination of peer groups, school systems and the family (e.g., Morris, Gerber & Menard, 2011; Thompson & Dodder, 1983), focusing exclusively on community factors (see e.g., Beaver, 2010) or focusing exclusively on peers (see e.g., Schoepfer & Piquero, 2006). As the primary socialization agent, the family continues to exert control over youth behavior and this control continues into adolescence and other stages of the life course (Van Doorn, Branje, & Meeus, 2011). Since the family provides the cornerstone of youth development (Erikson, 1950), the *family's* ability to constrain criminal behavior should be explicitly tested when examining social control during late adolescence and emerging adulthood rather than combining the effects of the family and community together. The present study fills this gap in the literature, by using explicit measures of *familial* socialization processes rather than socialization processes from a combination of sources.

While, as a concept, emerging adulthood should apply equally across different nations, in reality this new role for youth is currently debatable. Youth become socially responsible at different ages in different nations (Arnett, 2010). For example, the mean age of women to marry for the first time in the Democratic Republic of Congo is 17 years

old and the mean age in Libya is 29 years, an age span ranging 12 years between these two African nations (United Nations, 2000). Within European nations, the mean age of women to marry for the first time ranges between ages 21 to 29 years old (United Nations, 2000). This age range is consistent with emerging adulthood and may indicate that marriage is delayed, even slightly, in these European nations compared to the two African nations. However, among college students, the role of emerging adulthood may possibly be more universal across different nations. The transition to adulthood is an extended phase of the life-course in modern society (Arnett, 2004). College students living away from home tend to rely on their parents for financial support and living arrangements during college breaks (Johnson et al., 2011; Kenny 1987; Schoeni & Ross, 2005) rather than live completely independently. Johnson and his colleagues (2011) argue that this on-going support during late adolescence and emerging adulthood is an adapted means of controlling youth behavior even when the youth lives semi-autonomously. To create some degree of consistency across nations, the present study only uses data from the IDVS youth ranging in age from 18 years to 25 years.

Self-control during late adolescence and emerging adulthood

Gottfredson and Hirschi (1990) argue that youth in this age group may have more opportunity to engage in criminal behavior. The ability to self-regulate behavior may be reduced during late adolescence and emerging adulthood. Parents may not be physically present in their children's lives as much as during the earlier stages of adolescence and, therefore, cannot exert control over youth (Osgood et al., 1996). When parents are no

longer present, such as among college students living away from home, criminal behavior could be more likely due to a lack of self-control among these youth.

One of the central arguments of the original self-control theory (*cf.* Gottfredson & Hirschi, 1990; Hirschi, 2004) is that after approximately age 7 years interpersonal differences in self-control remain constant throughout the life course (Gottfredson & Hirschi, 1990), including the lack of self-control. This argument seems to suggest that socialization processes do not serve to control youth behavior beyond “the age of responsibility for crime” (1990: 90). This age-related ‘stability thesis’ (Hay & Forrest, 2006; Piquero et al., 2001) within the original self-control theory has been questioned by criminologists who have argued, based on empirical findings, that differences in personal circumstances may create variation in youth’s ability to self-regulate their behavior (Piquero & Bouffard, 2007) including changes within the family throughout the life course (Laub & Sampson, 2003; Sampson & Laub, 1993). For example, attachments may vary during the different developmental stages of the family (e.g., child growth, familial structural changes) over time (Nelson et al., 2011), and the attachments that were used to initially control youth’s behavior may continue to be exerted into late adolescence and emerging adulthood. In fact, strong attachments during late adolescence and emerging adulthood, as opposed to other development stages in the child’s life course, may prevent deviant behavior (e.g., Kenny, 1987; Thornton, Orbuch, & Axinn, 1995), including criminal behavior. Hence, the concepts of the parental socialization thesis of self-control theory could be extended to explain social control of youth behavior during late adolescence or emerging adulthood.

Gottfredson seems to change his position in the revised self-control theory by stating that an “important contemporary question” now asks if “later changes in social control affect the social bond, either due to increased attachments [or] self-control” (2005: 91). This statement in the revised self-control theory seems to indicate that variation in self-control may be possible during later stages in the life course. Arnett (2007), for one, argues that familial socialization processes continue to exert control over youth behavior during emerging adulthood, and this control can impact youth’s ability to self-regulate their behavior. This argument is well supported by empirical research that shows familial socialization processes continue to influence youth behavior during late adolescence and emerging adulthood (e.g., see Aquilino 1997; Nelson et al., 2011; Renk et al. 2006; Schulenberg & Zarrett 2006). Gottfredson himself states that this is “the key question,” asking “whether, and to what extent, the self-control/ social control bond varies after childhood or early adolescence” (2005: 88). While Gottfredson asks this question, he does not provide an answer.

Criminological research that has attempted to answer this question seems to focus on the relationship between familial socialization processes and criminal behavior during childhood and early adolescence (e.g., De Li, 2010). More recent research has begun to explore the association between familial relationships (Aquilino, 1997; Thornton, Orbuch, & Axinn, 1995), and the controlling effects of the family during late adolescence and emerging adulthood (Baker, 2010; Higgins & Boyd, 2008; Johnson et al., 2011; Padilla-Walker, Nelson, Madsen, & Barry, 2008; Schoeni & Ross, 2005), and crime (e.g., Clodfelter, Turner, Hartman, & Kuhns, 2010; Payne & Salotti, 2007; Schreck, 1999).

This research has shown that ineffective familial socialization processes are associated with increased criminal behaviors during late adolescence (e.g., see Loeber & Stouthamer-Loeber, 1986) and emerging adulthood (e.g., see Nelson et al., 2011; Piquero, Brame, Mazzerolle, & Hapaanen, 2002). These studies have limited their research mostly to criminal behavior occurring within the United States and other western nations. In order to better understand criminal behavior occurring across different nations during late adolescence and emerging adulthood, criminological studies need to take an international perspective in the study of criminal behavior for late adolescence and emerging adulthood. To fill this gap in the current literature, the present study examines the extent to which the ineffective socialization of youth, due to violent familial socialization processes, is associated with criminal behavior during late adolescence and emerging adulthood within and between 32 different nations.

Late adolescence and emerging adulthood: Self-control or age graded theory?

The more modern social control theory, age-graded theory (*cf.* Laub & Sampson, 1993; 2003), seems to recognize that individual levels of control *do* vary throughout the life course. According to age-graded theory, attachments to social institutions, particularly marriage and regular employment, limit involvement in criminal behavior during late adolescence and emerging adulthood. Several published studies support age-graded theory, in that criminal behavior tends to desist during emerging adulthood due to attachments with a spouse (e.g., see Horney, Osgood, & Marshall, 1995) or attachments within professional adult social networks that discourage criminal behavior (e.g., see

Sommers, Baskin & Gagan, 1994). For example, Savolainen and colleagues (2010) conducted an empirical analysis of Sampson and Laub's age-graded theory on 5,010 youth ages 15 years to 20 years to determine if the life circumstances of youth were associated with their criminal behavior. They found support for the theory in that correlates of criminal behavior do vary over the life course rather than center on one stage in child development. Following the lines of this research, the present study seeks to examine whether or not the effects of violent socialization occurring from childhood through late adolescence fails to control criminal behavior during late adolescence and emerging adulthood.

The conventional attachments of marriage and career that once occurred during emerging adulthood seem to no longer be the normative experiences within contemporary society, especially among college students. Traditional social institutions, such as marriage, tend to be postponed (Arnett, 2000) in favor of a 'lifestyle' in which youth seek to develop a personal identity (Giddens, 1991) during late adolescence and emerging adulthood. While some youth may attend post-secondary education institutions as part of their preparation for future 'lifestyle' choices, such as meeting a life-long partner, the influence of the family of origin continues well into late adolescent and emerging adulthood (Johnson et al., 2011). Thus, age-graded theory does not truly reflect the current circumstances of late adolescence and emerging adulthood, particularly among late adolescence and emerging adulthood, as control from the family of origin seems to continue to have influence over youth behavior during this life stage.

Summary

Self-control theory appears to omit a discussion of familial socialization processes controlling youth behavior during late adolescence or emerging adulthood, suggesting this theory assumes that familial socialization processes no longer serve to control youth behavior during late adolescence and emerging adulthood. Broadening the scope of Gottfredson and Hirschi's parental socialization thesis to include late adolescence and emerging adulthood, the revised self-control theory (*cf.* Gottfredson, 2005; Hirschi, 2004) could provide a more complete theoretical framework for understanding the impact of ineffective familial socialization processes on criminal behavior during late adolescence and emerging adulthood. This is particularly important considering Gottfredson and Hirschi have argued a need to better understand "deviant" behavior within the family that contributes to ineffective familial socialization processes (1990: 102). The present study seeks to expand the parental socialization thesis of revised self-control theory in order to examine if violent familial socialization processes fail to control youth criminal behavior during late adolescence and emerging adulthood.

Social control and criminal behavior across different nations

Since "parental support and control have been found to be critically important in the family socialization/ parenting process" (Barnes et al., 2006: 1085) and the causes of criminal behavior are diverse and complex (Church, Wharton & Taylor, 2009; Edwards, 1996), a combination of systemic dysfunction in the family may best predict criminal

behavior (Dillon, Pantin, Robbins & Szapocznik, 2008). This includes violent familial socialization processes. More importantly, violence occurs within every nation (Felitti, et al., 1998; Reza, Mercy & Krug 2002; World Health Organization, 2002). And violent familial socialization processes may occur within a context in which violence is part of the norms within a nation. Hence, to truly understand the degree to which violent socialization processes may be associated with criminal behavior across different nations, the literature needs to expand. This expansion includes the need to explore whether or not criminal behavior varies as a function of violent socialization processes across different nations.

Further, self-control theory, both original and revised, takes the position of individual causality, in that criminal behavior results from personal factors (Johnson et al., 2011). If the central arguments of the parental socialization thesis are correct, such that socialization and life circumstances develop self-control within youth, variation in socialization processes, including violent socialization processes, would have differential effects on criminal behavior. There *would* be differences in criminal behavior across different nations. This literature review outlines research showing that socialization processes, in general, vary across different nations (e.g., Keller, Otto, Lamm, Yovsi & Kartner, 2008; Levinson, 1989; Urquiza & Goodlin-Jones, 1994). Some specific violent familial socialization processes (e.g., violent discipline) also vary nation to nation. Socialization of youth may occur within a context and that context may be part of the norms specific to any given nation, including violence. Lyndon, White, Kadlec and Kelly (2007) found that certain nation-level characteristics, such as family-based violence

across aggregates of families, tends to influence the use of violence in resolving sexual conflict with an unwilling sexual partner. Gámez-Guadix, Straus and Hershberger (2011) found that experiences with childhood violence (e.g., corporal punishment) were associated with the perpetration of sexual violence towards a dating partner later in life. Violent socialization processes may vary nation to nation, and these differences across nations may predict the degree to which youth engage in criminal behavior. So while there appears to be emerging literature examining differences in socialization processes internationally, there is still sparse published research testing Gottfredson and Hirschi's parental socialization thesis through an international comparison.

Familial socialization processes as social control

While all youth may be prone to engage in criminal behavior, not all youth *do* engage in criminal behavior. The difference between those youth who do engage in criminal behavior, compared to those youth who do not, is the effectiveness of socialization processes in securing youth's conformist behavior with society's rules and regulations through different socialization processes. The current literature shows that when socialization processes are ineffective, such as violent socialization processes, the degree to which youth may engage in criminal behavior may increase because parents have failed to instill in youth an ability to control their own behavior.

As one of the most widely tested theories (e.g., Geis, 2000; Gibbs, Giever & Martin, 1998; Rebellón, Straus & Medeiros, 2008), self-control theory has been found

empirically to be one of the strongest theoretical explanations for criminal behavior (Pratt & Cullen, 2000). These explanations use measures of familial socialization processes to explain why some youth do not engage in criminal behavior. Control over youth behavior, both external and internal, is developed through socialization processes, most often familial socialization processes (Boyd & Higgins, 2006; De Li, 2004; Morris, Gerber, & Menard, 2011; Schoepfer & Piquero, 2006). The family serves to regulate youth behavior through attachments and discipline that inculcate self-control. When youth develop a sense of belonging within the family, one which reasonably reinforces the norms of society rather than deviant behavior, the youth experiences integration into a social group (*c.f.* Durkheim, 1966 [1933]) and would be less likely to engage in criminal behavior. But ineffective socialization processes, such as violent familial socialization processes, can counteract this protective factor and fail to prevent criminal behavior.

The violent socialization processes outlined in this review have consistently predicted criminal behavior (Goddard, Goff, Melancon & Huebner, 2000). But, examining singular variables cannot capture the full effects of violent familial socialization processes on criminal behavior (Morrongiello, Corbett, & Bellissimo, 2008). Poor parenting manifests in multiple domains of socialization processes, often inter-dispersed and inter-connected, and different techniques engaged by the family during the socialization process may produce varying results on youth's behavior. Failure to account for the multiple familial socialization processes of youth provides misleading findings in the study of criminal behavior. The current literature, and lack thereof, supports the need to explore the degree to which violent familial socialization

processes may be associated with criminal behavior among late adolescents and emerging adults. Expanding upon the literature connecting familial socialization processes and criminal behavior, as well as family violence, the present study explores both the effects of the multiple dimensions of violent familial socialization processes on criminal behavior through an international perspective, using the parental socialization thesis from the revised self-control theory, in part, and if variation in criminal behavior is a function of these violent socialization processes across different nations.

None of the studies in this literature review, nor the present study, seek to answer the issue of causal order in examining the relationship between violent socialization processes and criminal behavior among late adolescents and emerging adults. If the causes of criminal behavior were known, then there would be no further need to examine theories of criminal behavior, nor risk factors for criminal behavior. Criminology is still strongly influenced by theoretical explanations of criminal behavior and empirical studies designed to support or disprove these theories. As such, the present study contributes to the study of criminology by beginning a preliminary analysis of a context in norms of violence within any given nation may be associated with variation in criminal behavior.

CHAPTER III

METHODOLOGY

To test the hypotheses outlined in chapter 2, an analysis using archived data, i.e., statistical analyses on an existing data set (Creswell, 2003), was conducted on data from the International Dating Violence Study (Straus & Members of the International Dating Violence Research Consortium, 2004).

Dataset

The International Dating Violence Study (IDVS) dataset is a cross-sectional, international convenience sample of over 17,000 college and university students in thirty-two (32) different nations. Table 1 lists each of the nations included in the dataset, and the number and percentage of respondents within each of these nations. Conducted between 2001 and 2006, this dataset contains anonymous demographic and descriptive self-reported information about students enrolled in a variety of classes in various social science departments (e.g., criminology, family studies, psychology, sociology) from different post-secondary educational institutions (i.e., colleges and universities) where members of the International Dating Violence Research Consortium were employed. IRB approval was granted at each site. The IRB at the University of New Hampshire

Table 1.

Number and percent of respondents from each nation (IDVS)

country	abbreviation code	n	% of respondents
Australia	(AST)	210	0.3
Belgium	(BEL)	574	0.7
Brazil	(BRZ)	275	0.8
Canada	(CND)	1199	0.7
China	(CHN)	2502	1.0
England	(ENG)	218	1.4
Germany	(GER)	471	3.5
Greece	(GRC)	286	1.8
Guatemala	(GTL)	249	1.6
Hungary	(HUN)	176	1.1
India	(IND)	190	1.2
Iran	(IRN)	99	0.6
Israel	(ISR)	153	1.0
Japan	(JPN)	207	1.3
Lithuania	(LTH)	448	2.9
Malta	(MLT)	112	0.7
Mexico	(MEX)	235	0.7
Netherlands	(NTL)	410	1.5
New Zealand	(NZL)	137	0.9
Portugal	(PGL)	424	2.7
Romania	(ROM)	271	1.7
Russia	(RSS)	450	2.9
Scotland	(SCT)	213	1.4
Singapore	(SNG)	231	1.5
S. Africa	(SAF)	124	0.8
S. Korea	(SKR)	243	1.6
Sweden	(SWD)	433	2.8
Switzerland	(SWZ)	161	3.4
Taiwan	(TWN)	258	1.6
Tanzania	(TAN)	208	1.3
United States	(USA)	4236	27.1
Venezuela	(VNZ)	249	1.6

granted approval for this dissertation project (IRB #4802); see letter of approval in Appendix A.

Theoretical concepts of the IDVS

The IDVS was intended to measure prevalence and chronicity of dating violence and the risk factors associated with dating partner violence internationally (Straus & Members of the International Dating Violence Research Consortium, 2004). In addition to information related to a range of behaviors, including criminal behavior, this dataset includes variables measuring respondents' attitudes and values. The IDVS also includes measures to test specific criminological theories, one of which includes self-control theory (M. Straus, personal communication, January 22, 2010).

Other international datasets, including representative samples, fail to measure the full array of variables necessary to explore the relationship between violent familial socialization process and criminal behavior under the theoretical framework of self-control theory (revised). For example, data from the International Social Survey Program (i.e., International Social Science Survey) provides family-based information in the most recent 'Family and Changing Gender Roles III (ISSP 2002)' dataset. But the data do not include information about respondents' familial socialization processes or experiences with violent socialization. Rather, the data focus on topics related to employment, motherhood, and responsibility for child rearing; alternative family forms; and division of household labor and decision making surrounding child rearing (see

<http://zacat.gesis.org/webview/index.jsp?object=http://zacat.gesis.org/obj/fStudy/ZA3880%20>). Therefore, the IDVS provides the most accessible data set for capturing various different variables representing key components of violent socialization processes under the conceptual framework of social control theories.

Sample

Although the original dataset contains 17,404 cases, some of the respondents were older than the age-frame consistent with late adolescence and emerging adulthood. After filtering the data for cases ranging in age from 17 years to 25 years and removing any cases due to non-response (i.e. missing data), as deleting cases tends to produce the least biased parameter estimates and standard errors compared to imputation (Allison, 2002), the final sample size is 15,652 respondents from 32 nations.

Some criminologists have argued that using samples of college and university students to study crime do not produce valid results (e.g., see Hagan & McCarthy, 1997; Payne & Chappell, 2009). However, other criminologists argue that self-reported criminal behavior among samples of college students tend to be similar to the self-reported criminal behavior among comparable youth not in college. For example, to examine the validity of this comparable result argument, Wiecko (2010) compared responses for college students and non-college students between ages 17 and 26 years on several different items measuring criminal behavior. He found almost no statistically significant differences in self-reported criminal behavior between the groups, and only minor

differences in frequency of criminal behavior between college students and youth of the same age frame not in college. Wiecko (2010) concluded that samples of college students, while perhaps unique in extending and maintaining their adolescence (Moffatt, 1991) as well as other aspects of social identity (Payne & Chappell, 2009) compared to other youth populations, do not produce invalid results in the study of crime. And specific to the IDVS data, Straus (2009) found that samples not nationally representative of the general population can still provide valid results. Using the theoretical concept of a national context effect, Straus analyzed the validity of the IDVS data by comparing the correlation between the results of the IDVS measures to independent measures from different international samples. He tested concurrent validity, using national level data and measures associated with violence and crime, and construct validity, to compare the results from forty-one studies to the IDVS data. Straus (2009) found all the IDVS measures to have concurrent validity. Further, the IDVS measures were consistent with the results from each of the forty-one comparative studies, which supported construct validity. Despite the IDVS data being a convenience sample of college students across 32 different nations, valid empirical conclusions can be drawn about international variation in criminal behavior using data from the IDVS. So although the use of convenience samples tend to be a limitation, the present study may still present valid information about the extent to which violent socialization processes predict criminal behavior, and if criminal behavior varies as a function of norms of violence internationally, at least for this sample of youth.

Variables

The main predictor and outcome variables originate from the core questionnaire of the IDVS. These variables were derived from the Personal Relationship Profile scales (PRP), included within the IDVS. Some control variables also derive from the PRP scales. Table 2 lists each scale used and the individual items comprising each of these scales. Given that the present study examines socialization through an international perspective, there is the possibility that these variables may be interpreted differently across the nations. To mitigate for this possibility, each survey item was translated from a member of the Consortium at the institution in which the survey was administered then back-translated to ensure conceptual equivalence (Gàmez-Guadix, Straus, & Hershberger, 2011) across each nation. More details of the IDVS study can be located at <http://pubpages.unh.edu/~mas2>.

The main predictor and dependent variables were measured within constructed scales to increase precision in measuring various dimensions (Singleton & Straits, 1984) of violent familial socialization processes, and to minimize measurement error (Shadish, Cook, & Campbell, 2002). One of the limitations of conducting an analysis using archived data is an inability to manage the performance of the measures, as the measures for each of the predictor and dependent variables were created by someone else. Therefore, to determine the psychometric properties of the scales, Principle Components Analysis (i.e. Factor Analysis [Carmines & Zeller, 1979 was used with Varimax rotation and Kaiser normalization. Several other methods were used to test for reliability and

Table 2.

Items from the Personal Relationships Profile (PRP) scales

Concept	PRP scale
Criminal Behavior	criminal history, late onset sub-scale
	Since age 15, I have stolen or tried to steal something worth more than \$50
	Since age 15, I have stolen money (from anyone, including family)
	Since age 15, I have physically attacked someone with the idea of seriously hurting them
	Since age 15, I hit or threatened to hit someone who is not a member of my family
Violent Socialization	violent socialization, family sub-scale
	When I was less than 12 years old, I was spanked or hit a lot by my mother or father
	When I was a teenager, I was hit a lot by my mother or father
	When I was a kid, I saw an adult in my family push, shove, slap, or throw something at someone
	When I was a kid, I saw my mother or father kick, punch, or beat up their partner
	My father or mother told me to hit back if someone hit me or insulted me
Self-Control	self-control
	I don't think about how what I do will affect other people (R)
	I often do things that other people think are dangerous (R)
	I have trouble following the rules at work or in school (R)
	I often get hurt by things that I do (R)
	I have goals in life that I try to reach
Attachment	positive parenting
	My parents did not help me to do my best in school (R)
	My parents did not care if I got into trouble in school (R)
	My parents did not comfort me when I was upset (R)
	My parents helped me when I had problems
Violent Socialization	violent socialization, non-family sub-scale
	When I was a kid, I often saw kids who were not in my family get into fights and hit each other
	When I was a kid, people not part of my family pushed, shoved or slapped me, or threw things at me
	When I was a kid, people not part of my family told me to hit back if someone hit me or insulted me.
Prior Criminal Behavior	criminal history, early onset sub-scale
	Before age 15, I stole or tried to steal something worth more than \$50.00
	Before age 15, I stole money (from anyone, including family)
	Before age 15, I physically attacked someone with the idea of seriously hurting them
	Before age 15, I hit or threatened to hit my parents
Social Desirability	limited disclosure scale
	I sometimes try to get even rather than forgive and forget (R)
	There have been occasions when I took advantage of someone (R)
	There have been times when I was quite jealous of the good fortune of others (R)
	I sometimes feel resentful when I don't get my way (R)
	I am sometimes irritated by people who ask favors of me (R)
	There have been times when I have felt like rebelling against people in authority even though I knew they were right (R)
	I have never deliberately said something that hurt someone's feelings
	No matter who I am talking to I am always a good listener
	On a few occasions, I have given up doing something because I thought too little of my ability(R)
	I have never been irked when people expressed ideas very different from my own
	It is sometimes hard for me to go on with my work if I am not encouraged (R)
	I am always courteous, even to people who are disagreeable
	<u>I'm always willing to admit it when I make a mistake</u>

(R) indicates the item was reverse coded.

validity of each of the scales, including cronbach's alpha coefficient and inter-item correlations.

Reliability

The purpose of Principle Components Analysis was to determine the degree to which factor loadings for each item in the scale converge on a single dimension for each individual concept (Carmines & Zeller, 1979). Principle Components Analysis was also used to test the reliability of these scales (DeVellis, 2003). Cronbach's alpha coefficient was used to test the internal consistency reliability for each scale (Cronbach, 1951) to determine if the correlations between items represent a single latent dimension (Singleton & Straits, 1988).

Validity

Inter-item correlations were calculated to determine the extent to which each item contributes to the overall construct for each scale representing the concepts (i.e., violent socialization, violent familial socialization, attachment, and self-control). Since fully valid and reliable measures tend to be elusive in social science (Maxfield, 1999), there is no current system that accurately and dependably records *all* social phenomenon. Therefore, some level of professional judgment was necessary to measure for the validity of these constructs.

Measures

Combining measures into scales serves to limit mono-operation bias; i.e., variables operationalized through several different items and multivariate characteristics tend to have less measurement bias (Shadish, Cook, and Campbell, 2002). Together, these three analyses are expected to demonstrate that the different items in the scales are related to each other (Schreiner & Louis, 2006) in measuring each individual dimension (Singleton & Straits, 1988) and thus warrant the creation of each scale. Table 3 lists the descriptive statistics for all of the variables used in this study (listed below).

Criminal behavior. Criminal behavior, the dependent variable, was measured by self-reported answers to items inquiring about property crime and violent crime (i.e., assault) occurring since the respondent turned age 15 years. Example items include “I stole or tried to steal something worth more than \$50.00²” and “I physically attacked someone with the idea of seriously hurting them.” Using the late onset sub-scale of the criminal history scale, scores for these items are based on the respondent’s level of agreement that they had engaged in property crime or violent crime, ranging from strongly disagree (1) to strongly agree (4). Due to positive skew, this scale was transformed by the natural log which produced a normal distribution.

The inter-item correlations, shown in table 13 in Appendix B, shows each of the items in the late onset sub-scale are significantly correlated, indicating these items are inter-related and valid measures (Hamilton, 1992) of criminal behavior during late

² This measure was translated for each country as one days’ wage for skilled manual labor (Straus, personal communication, December 13, 2011).

Table 3.
Descriptive Statistics

	Minimum	Maximum	Mean	Standard Deviation
level-1 (n=15,652)				
<i>Violent Family Socialization</i>	5.00	20.00	8.38	2.68
<i>Violent Family Socialization (c)</i>	-3.38	11.62	0	2.68
<i>Attachments</i>	4.00	16.00	13.43	2.22
<i>Attachments (c)</i>	-9.43	2.57	0	2.22
<i>Self-Control</i>	9.00	24.00	19.47	2.61
<i>Self-Control (c)</i>	-10.47	4.53	0	2.61
<i>Sex</i>	0	1.00	0.30	0.46
<i>Age</i>	18.00	27.00	21.11	2.50
<i>Age (c)</i>	-3.11	5.89	0	2.50
<i>Peer criminal behavior</i>	0	1.00	0.54	0.50
<i>Prior criminal behavior</i>	4.00	16.00	5.71	2.03
<i>Prior criminal behavior (c)</i>	-1.71	10.29	0	2.03
<i>Social Desirability</i>	13.00	44.00	28.36	3.93
<i>Social Desirability (c)</i>	-15.36	15.64	0	3.93
<i>Criminal Behavior scale</i>	4.00	16.00	6.02	2.22
level-2 (n=32)				
<i>Violent Socialization</i>	6.56	10.02	8.26	0.87
<i>Violent Socialization (c)</i>	-1.81	1.64	0	0.87
<i>Gross Domestic Product</i>	0.32	1.00	0.88	0.14
<i>Gross Domestic Product (c)</i>	-0.56	0.12	0	0.14
<i>Discipline</i>	0	1.00	0.75	0.44
<i>Death Penalty</i>	0	1.00	0.61	0.50
<i>Crime Rate</i>	0	49.56	7.11	12.13
<i>Criminal Behavior scale</i>	4.93	7.10	5.85	2.22

adolescence and emerging adulthood. The results of confirmatory Principle Components Analysis shows a reliable single latent dimension, due to high factor loadings that converged from a single unrotated factor (Carmines & Zeller, 1979). The four items in the late onset sub-scale were combined into an additive scale to create a criminal behavior score. Higher scores on this criminal behavior scale represent more criminal

behavior. The results of the Principle Components Analysis are located in table 4. The internal consistency reliability score for this scale was $\alpha = .643$.

Violent socialization within the family. This main predictor variable was measured using the family sub-scale for the violent socialization scale (Straus, Hamby, Boney-McCoy, & Sugarman, 2010). This sub-scale has five items, measuring the degree to which the individual respondents agree that they experienced direct or vicarious victimization within the family, as well as being counseled by family to engage in violence to resolve conflict, on a 4-point Likert scale. These items include being hit frequently by parents both prior to age 12 (1) and as a teenager (2), witnessing violence by both a parent (3) and other non-parent family member (4), and being advised by a parent to use violence to resolve conflict (either violent or verbal) (5). An example item includes “My father or mother told me to hit back if someone hit me or insulted me.” Other studies testing social control theories, as related to familial socialization processes, have used similar measures, including excessive corporal discipline (Teague, Mazerolle, Legosz, & Sanderson, 2008) and parental physical abuse (Rebellion & Van Gundy, 2005).

To test the psychometric properties of this scale, Principle Components Analysis (Carmines & Zeller, 1979) was used with Varimax rotation and Kaiser normalization. See table 4. The scale contained at least three or more significant factor loadings and only one component was extracted from the five factors, which indicates a single latent dimension (Carmines & Zeller, 1979). The inter-item correlations, shown in table 13 in Appendix B, shows each of the items in the family sub-scale of the violent socialization

scale are significantly correlated, indicating these items are inter-related and valid measures (Hamilton, 1992) of violent socializing within the family. The five items in the family sub-scale were then combined into an additive scale with scores ranging from less violent socialization experiences (5) to more violent socialization experiences (20). The internal consistency reliability score for this scale was $\alpha = .623$.

This *violent family socialization* scale indicates the degree to which respondents experience violent socialization processes within their individual families (i.e., a level-1 predictor for MLM regression). *Violent family socialization* was then centered on the grand-mean of all individual cases in order to provide meaningful interpretation of true values for the dependent variable (Singer & Willett, 2003), since the intercept from the level-1 analysis becomes an outcome in the level-2 analysis of multilevel modeling regression analysis (Luke, 2004). This variable will also be used in ordinary least squares regression analysis. See the ‘analysis’ section below.

Attachment. The second main predictor variable was measured using the positive parenting scale. This scale was designed to measure parental affection and support, by reverse coding some of the response categories for six items in the PRP neglect scale³ in order to represent positive parenting practices rather than parental neglect (Straus, Hamby, Boney-McCoy, & Sugarman, 2010). Example measures include “my parents comforted me when I was upset” and “my parents helped me with problems.”

³ Two measures in this scale, “my parents helped me when I had trouble understanding something” (under helping) and “my parents did not care if I did things like shoplifting (under supervising), were not available in the original data of the IDVS (see Straus, Hamby, Boney-McCoy, & Sugarman, 2010) and therefore were not used in this study.

The inter-item correlations, shown in table 13 in Appendix B, shows each of the items in the positive parenting scale are significantly correlated, indicating these items are inter-related and valid measures (Hamilton, 1992) of attachments within the family. Confirmatory Principle Components Analysis (see table 4) shows the scale converged on one distinct underlying concept (Carmines & Zeller, 1979). The internal consistency reliability score for this scale was $\alpha = .688$. Scores range from low (a weak sense of attachment) to high (a strong sense of attachment). For multilevel modeling regression analysis, described in ‘analysis’ section below, *attachment* is a level-1 variable that will function as an individual level predictor of criminal behavior, and therefore was centered on the grand-mean of all individual cases for meaningful interpretation in multilevel modeling regression analysis. This predictor variable will also be used in ordinary least squares regression analysis.

This positive parenting scale has been used in previous studies to represent ‘good parenting’ (Rebellon, Straus & Medeiros, 2008). Previous studies have used similar measures to represent ‘attachment’ within the family, including parental emotional support (Jensen, 1973), parental affection (Thompson & Dodder, 1983; Thompson & Dodder, 1986), relationship quality (Rebellon & Van Gundy, 2005), and parental praise (Beaver & Wright, 2007).

Self-control. Self-control was measured using the self-control scale in the PRP. This scale includes six items measuring the elements of Gottfredson and Hirschi’s General Theory of Crime (1990): self-centeredness, risk-taking, temper, physicality,

impulsivity, ignoring; and long-term consequences. Some variables were reverse coded to retain measurement consistency across the scale. Example items include “I don’t think about how what I do will affect other people” and “I often do things that other people think are dangerous.” However, one item, “there is nothing I can do to control my feelings when my partner hassles me,” was not included because this item was asked only of the respondents who reported being in an intimate relationship rather than all respondents. Exclusion criteria are sometimes necessary to ensure construct validity (Grimes & Schutz, 2005) in order to increase the likelihood that the construct self-control adequately reflects each individual respondent’s ability to self-regulate their own behavior. Therefore, because this one item reflects anger in relation to an intimate partner and not all respondents were involved in an intimate relationship, the item was removed from the scale instead of removing 3,012 cases from the dataset. This exclusion criterion should assist with limiting the chances of construct validity threat and instead identify the correct construct (Shadish, Cook & Campbell, 2002).

The inter-item correlations, shown in table 13 in Appendix B, shows each of the items in the self-control scale are significantly correlated, indicating these items are inter-related and valid measures (Hamilton, 1992) of individual self-control. To test the psychometric properties of this scale, Principle Components Analysis was used (with Varimax rotation and Kaiser normalization). The scale contained at least three or more significant factor loadings. Table 4 shows the results, a single reliable latent dimension because Varimax converged high loadings for the four items on the first unrotated factor, (Carmines & Zeller, 1979). The four items in the self-control scale were then combined

into an additive scale with scores ranging from less individual self-control (5) to more individual self-control (20). The internal consistency reliability score for this scale was $\alpha = .624$. Self-control, which is used as a level-1 predictor for multilevel modeling regression analysis, was then centered on the grand-mean of all individual cases. This predictor variable will also be used in ordinary least squares regression analysis. See the 'analysis' section below.

This self-control scale was used in a previous study to specifically test Gottfredson and Hirschi's General Theory of Crime (Rebellon, Straus, and Medeiros 2008). Other studies testing self-control used similar measures of self-control (e.g., see Grasmick, Tittle, Bursik, & Arneklev, 1993).

Violent socialization as norms of violence. This group level indicator measures aggregates of youth responses, within each nation, about experiences within their family and community. This is a proxy measure for groups of families, within each nation, for which violent socialization processes are part of the normative experiences within each nation. While this proxy is not representative of all families within any of the 32 nations overall, this is an aggregate indicator used to explore the presence of variation in violent socialization processes within and between the different nations. To create the level-2 variable (*violent socialization*) for multilevel modeling regression analysis, individual responses to the five items from the family sub-scale were combined with three items in the non-family sub-scale of the violent socialization scale then aggregated within each

nation by averaging the responses for all respondents within each nation. The result is a group level mean of violent socialization processes for each of the 32 nations.

The inter-item correlations, shown in table 13 in Appendix B, shows that the items in this aggregated family sub-scale of the violent socialization scale are significantly correlated indicating that the items are inter-related and valid measures (Hamilton, 1992) of violent socialization occurring within a context of norms of violence. Principle Components Analysis was necessary to confirm the individual items in the aggregated scale also converged on one distinct underlying concept (Carmines & Zeller, 1979). Analysis of Principle Components Analysis (see table 4) shows a reliable single latent dimension, due to high factor loadings that converged from a single unrotated factor. The five items were then combined into a single additive scale representing an approximation of the degree to which each nation has its own unique structural characteristics surrounding violent socialization process (i.e., a 'context effect'). The internal consistency reliability score for this scale was $\alpha = .758$.

Violent socialization was then centered on the grand mean of all nations, so that scores range from less violent socialization (-3.38) to more violent socialization (11.62) with an average of zero (0). This centering was necessary in order to provide meaningful interpretation of true values for the dependent variable (Singer & Willett, 2003), since the intercept from the level-1 analysis becomes an outcome in the level-2 analysis of multilevel modeling regression analysis (Luke, 2004). This predictor variable will also be used in ordinary least squares regression analysis. See the 'analysis' section below. To create graphs showing the relationship between this variable and criminal behavior,

descriptive statistics for *violent socialization* were separated in to the 25th, 40th 60th and 75th percentiles values.

To test the ‘norms of violence’ thesis, *violent socialization* became the outcome variable for different bivariate statistical tests. See the ‘analysis’ section below. This dependent variable was measured as the aggregated responses for all respondents within each nation, i.e., the group level mean of violent socialization processes for each of the 32 nations.

Legal status of physical discipline. This indicator measures whether or not each nation has laws prohibiting the use of physical discipline on children. This aggregate measure (*discipline*) was used to explore one aspect of violence occurring within nations: legal support for the use of violence against others. As outlined in the previous chapter, the physical discipline of children is considered violence in some nations, while considered a norm in other nations. The laws of a nation can reflect the social climate of a nation. Laws are part of social processes that, over long periods of time, become part of the normative experiences within each nation. In other words, laws may capture the general social conditions within a nation. For example, around the late 1800’s, the citizenry in Sweden began to question the social climate of the nation that allowed the use of physical discipline on children, leading to the first law in 1902 that legally prohibited the severe physical maltreatment of children (Janson, Långberg, & Svensson, 2011). While the debates on the use of physical discipline continued, Sweden officially banned the use of physical discipline on children within schools in 1957 (Janson,

Långberg, & Svensson, 2011). As the citizenry continued to view violence against children as non-normative, the law eventually prohibited the use of physical discipline within families in 1979 (Gumbrecht, 2011). Processes for creating laws that reflect the social conditions within a nation, in this instance, Sweden, may take long periods of time in order to capture changes in norms within the nation. But, in general, nations may pass laws prohibiting the use of physical discipline on children because the general social conditions within the nation, over time, have evolved such that the majority of citizenry desire a social climate in which violence should not be a normative experience.

Data for this indicator were derived from the Global Initiative to End All Corporal Punishment of Children (2012) organization's website. This website lists the legal status of corporal discipline across 172 nations. Some countries have prohibited the use of physical discipline within schools, while other countries have prohibited the use of physical discipline both within schools and by families. This variable was coded such that nations that have any laws prohibiting physical discipline were coded 1, and nations without these laws were coded 0. It should be noted that some of these nations passed anti-physical punishment laws prior to data collection for the IDVS. Other nations passed the laws during data collection (e.g., Hungary's law was enacted in 2004). Five nations passed anti-physical punishment laws after data had been collected for the IDVS. This does not mean that collective public sentiment towards the use of physical discipline on children was established in close relation to the date these laws were enacted. Rather, as discussed above, laws may take years to create due to changing norms within a nation.

This predictor variable was used in bivariate statistical tests to assess the ‘norms of violence’ thesis. See the ‘analysis’ section below.

Legal status of the death penalty. This indicator measures whether or not each nation has laws prohibiting the use of death penalty on those who are convicted of violent crimes. This aggregate measure (*death penalty*) was used to explore another separate aspect of violence occurring within nations: state sanctioned and administrated violent punishment. As stated above, the laws of a nation may take years to create due to changing norms within a nation.

Data were derived from the Death Penalty Information Center (2012). This website lists the legal status of corporal punishment across 198 nations. All of the nations in the IDVS prohibiting the use of the death penalty enacted the legal ban prior to or during data collection for the IDVS (e.g., Hungary’s law was enacted in 2004). This variable was coded such that nations that have legally abolished the death penalty for violent crimes were coded 1, and nations still having laws allowing for the use of the death penalty were coded 0. Only one of the 32 nations was not listed on the website. This missing data, for South Korea, was coded as missing. This predictor variable was used in bivariate statistical tests to assess the ‘norms of violence’ thesis. See the ‘analysis’ section below.

Crime rates. The rate of intentional homicide in each nation was used to explore a third unique aspect of violence occurring within nations: violent crime. Intentional

homicide is defined, internationally, as the intended illegal killing of an individual by another individual (United Nations, 2012). Given that the laws defining crime vary nation to nation, homicide data tends to be the most valid crime measure across different nations (LaFree, 2005).

Data were derived from the *United Nations Office on Drugs and Crime's* website (<http://www.unodc.org/unodc/en/data-and-analysis/homicide.html>). This website lists the rate of intentional homicides, per 100,000 in the population, for each of 207 nations in the world between 1995 and 2011. To create the variable (*crime rate*), the intentional homicide rate for each nation was averaged over a period of 10 years: 1996-2006. These years encompass five years prior to data collection for the IDVS and the five years in which data was collected for the IDVS. This predictor variable was used in bivariate statistical tests to assess the 'norms of violence' thesis. See the 'analysis' section below.

Controls

Several control variables typical for criminological research were included to rule out spurious relationships between the predictor variables and criminal behavior.

Gross Domestic Product. Gross domestic product is a level-2 variable in multilevel modeling regression analysis controlling for international economic inequality. This variable, an original IDVS variable, was created using data from the United Nations Development Programme's Human development report of 1999, measuring the percent of national monies spent on the military compared to national monies spent on education

and human services (Straus & Ramirez, 2000). Since violent familial socialization processes, particularly harsh punishment of children, may be reflective of different socio-economic standings across different nations (Runyan et al., 2008) and economic disadvantage may positively influence criminal behavior (Farrington, 2003; Lipsey & Derzon, 1998), this suggests the possibility of variation in criminal behavior that could be explained through social class differences. Because the present study examines national context effects, GDP was used to control for the effect of national socio-economic influences on criminal behavior. This variable will be used in both ordinary least squares and multilevel modeling regression analyses.

Age. Individual level controls include the age of the respondent. This variable was included within the IDVS, but it was filtered to include the youth ages 18 years-old to 25 years-old (as described above in the sample section above). Age, a level-1 predictor for multilevel modeling regression analysis, was then centered on the grand-mean of all individual cases in order to provide meaningful interpretation of true values for the dependent variable. This variable will be used in both ordinary least squares and multilevel modeling regression analyses. Given the filtering of the data to limit variability, focusing solely on the 'emerging adults' in the dataset, there should not be statistically significant differences in criminal behavior by age, regardless of the predictor.

Gender. Controls also include the sex of the respondent. The original variable in the IDVS was re-coded to males (1) and females (0). This variable will be used in both ordinary least squares and multilevel modeling regression analyses.

Peer involvement in criminal behavior. The importance of peer relationships may be particularly salient during late adolescence and emerging adulthood. Some may argue that peers, particularly during late adolescence and emerging adulthood, provide more support and group cohesion than the family. Hence, to control for the effect of peer group influence on criminal behavior and rule out arguments that peers with criminal behavior might pose more influence over behaviors at this stage of the life course than the family (*cf.* differential association theory [Sutherland & Cressey, 1978]), this variable was measured as whether or not the respondent associates with peers who engage in criminal behavior. Two variables, “I have friends who committed crimes” and “I spend time with criminal friends,” will be dichotomized from four response categories (i.e., strongly disagree, disagree, agree, strongly agree) to two response categories (i.e., disagree or agree). This new variable represents respondents’ agreement that their friends have criminal behavior or they associate with friends that engage in criminal behavior. This variable will be used in both ordinary least squares and multilevel modeling regression analyses.

Prior criminal behavior. Because research has shown that prior criminal behavior tends to predict future criminal behavior (Hirschi, 2004; Nagin & Paternoster, 2000),

prior criminal behavior was included as a control variable. Prior criminal behavior was measured using the early onset sub-scale of the criminal history scale (Straus, Hamby, Boney-McCoy, & Sugarman, 2010). This scale is comprised of four items measuring self-reported property crime and violent crime (i.e., assault) occurring before age 15 years. Example items include “I stole or tried to steal something worth more than \$50.00” and “I physically attacked someone with the idea of seriously hurting them.” Scores for these measures are based on the respondent’s level of agreement that they had engaged in property crime or violent crime prior to age 15 years-old, ranging from strongly disagree to strongly agree.

The inter-item correlations, shown in table 13 in Appendix B, shows each of the items in the early onset sub-scale of the criminal history scale are significantly correlated, indicating these items are inter-related and valid measures (Hamilton, 1992) of prior criminal behavior. To test the psychometric properties of this scale, Principle Components Analysis was used (with Varimax rotation and Kaiser normalization). The scale contained at least three or more significant factor loadings. Table 4 shows the results, that a single reliable latent dimension as Varimax converged high loadings for the four items on the first unrotated factor (Carmines & Zeller, 1979). The four items in the early onset sub-scale of the criminal history scale were then combined into an additive scale. The internal consistency reliability score for this scale was $\alpha = .650$. Higher scores represent more criminal behavior prior to late adolescence/ emerging adulthood (i.e., before age 15 years-old). Because prior criminal behavior is used as a level-1 predictor for MLM regression analysis, the scale was centered on the grand-mean of all

individual cases. See the 'analysis' section below. This variable will be used in both ordinary least squares and multilevel modeling regression analyses.

Social Desirability. Another control variable included the limited disclosure scale to control for socially desirable responses. This scale was based on an adaptation of Reynolds' short form of the Crowne-Marlow scale (Straus, Hamby, Boney-McCoy, & Sugarman, 2010). It is possible that some of the respondents may have answered questions in a manner that might make them look favorable rather than answering truthfully. Research has shown that questionnaires inquiring about both personal (Reynolds, 1982) and sensitive information (Lee, 1993) are subject to social desirability bias (Crowne & Marlowe, 1960). Therefore, the limited disclosure scale included items that measure for the possibility of respondents providing false answers about sensitive information for a more favorable personal image, such as underreporting criminal behavior.

All thirteen (13) items from the limited disclosure scale were used for the social desirability scale. Example items include 'I have never deliberately said something that hurt someone's feelings,' and "I'm always willing to admit it when I make a mistake.' The inter-item correlations, shown in table 14 in Appendix B, shows each of the items in the limited disclosure scale are significantly correlated, indicating these items are interrelated and valid measures (Hamilton, 1992) of prior criminal behavior. Principle Components Analysis shows the scale contains at least three or more significant factor loadings (Carmines & Zeller, 1979). The items in the limited disclosure scale were then

Table 4.
 Rotated components loadings for items from the Personal and Relationship Profile scales
 (n=15,652)

<u>late onset, criminal history scale (criminal behavior)</u>						
assault	.737					
hit/ threaten	.704					
stole something	.682					
stole money	.671					
<u>violent socialization, family scale</u>						
hit as teen	.751					
Spanked	.728					
parent violence	.581					
family violence	.622					
advised	.489					
<u>violent socialization as a national context effect</u>						
hit as teen	.862					
Spanked	.807					
parent violence	.761					
family violence	.682					
advised	.439					
<u>positive parenting scale (attachments)</u>						
Help				.765		
Caring				.715		
Help problems				.708		
Comfort				.697		
<u>self-control scale</u>						
ignoring					.729	
physicality					.687	
impulsivity					.650	
self-centeredness					.539	
long-term consequences					.410	
<u>early onset, criminal history scale (prior criminal behavior)</u>						
stole money						.721
assault						.716
stole something						.701
hit parents						.665
Eigenvalues	1.955	2.058	2.631	2.082	1.886	1.968
% of total variance	48.885	41.154	52.622	52.048	37.714	49.200
α	.643	.623	.758	.688	.624	.650

Table 5.

Rotated components loadings for items in the limited disclosure scale (n=15,652)

jealous	.576	-.285
not forgive	.556	.015
resentful	.530	-.202
took advantage	.520	-.050
rebellng	.501	-.124
thought little of ability	.498	-.403
irritated	.482	.014
hard to work	.463	-.405
willing admit mistakes	.381	.438
always good listener	.355	.386
irked	.332	.490
always courteous	.316	.503
deliberately hurt feelings	.289	.361
Eigenvalues	2.702	1.430
% of total variance	49.200	11.003
α	.674	

combined into an additive scale. The internal consistency reliability score for this scale was $\alpha = .674$. Higher scores represent more socially desirable responses. Because this variable was used as a level-1 predictor for MLM regression analysis, the scale was centered on the grand-mean of all individual cases. This variable will be used in both ordinary least squares and multilevel modeling regression analyses.

Analyses

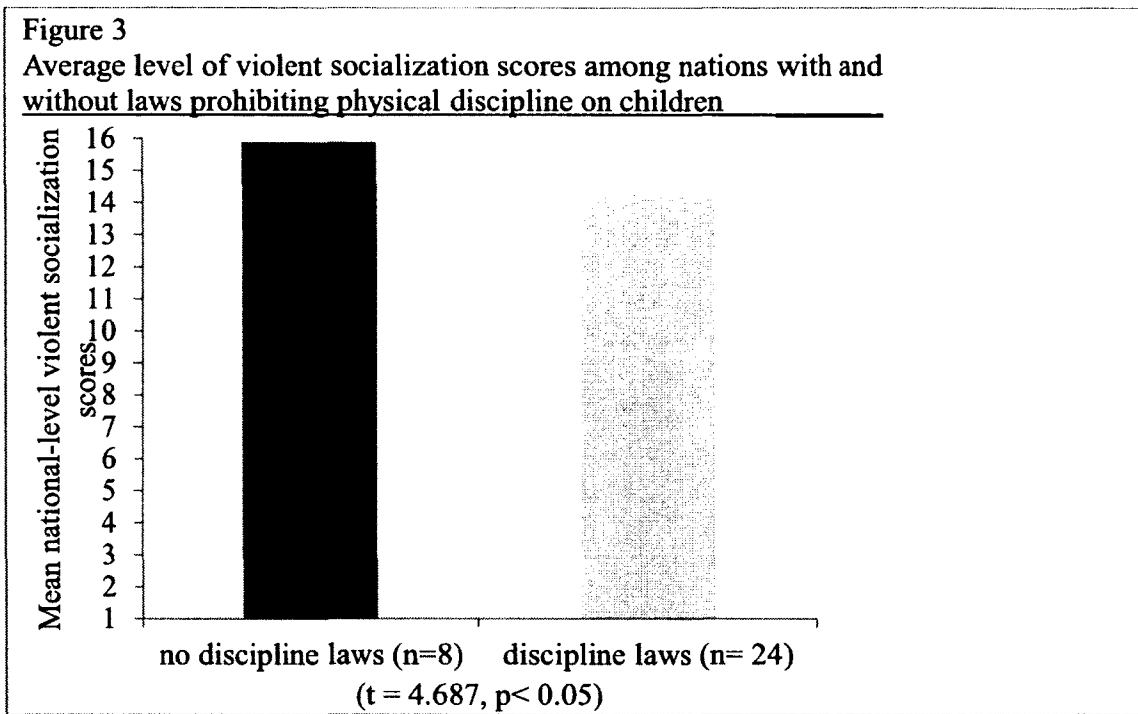
Before conducting regression analyses to test the two main hypotheses, two types of statistical tests were performed to examine the ‘norms of violence’ thesis. Specifically, T-tests were used to examine the extent to which *violent socialization*

differs among nations with (1) laws prohibiting the use of physical discipline, and (2) laws prohibiting the use of the death penalty. Bivariate correlations were used to examine the degree to which violent crime rates were associated with *violent socialization*.

T-tests

An independent samples *t*-test was used to test whether or not national-level violent socialization processes are part of violent norms within a nation. The results of the *t*-test will show the average level of violent socialization processes by nations with anti-physical discipline laws and nations without anti-physical discipline laws (see Global Initiative to End All Corporal Punishment of Children [2012]). The results will also show whether or not these averages significantly differ. If violent socialization processes do significantly differ among the nations within the IDVS that have prohibited the use of physical discipline on children compared to the nations with no such prohibition, then the results of the *t*-test will provide some support in favor of this thesis.

Figure 3 below provides a graphical display of the results of the first *t*-test. Among the 24 nations with laws prohibiting the use of physical discipline on children, the average national violent socialization score was 14.25, while the average national violent socialization score among the 8 nations with no such legal prohibitions on the use of physical discipline was 15.875. More importantly, the results of this *t*-test indicate there are significant differences in national-level violent socialization processes according to the presence or absence of anti-physical discipline laws ($t=4.687, p<0.05$).

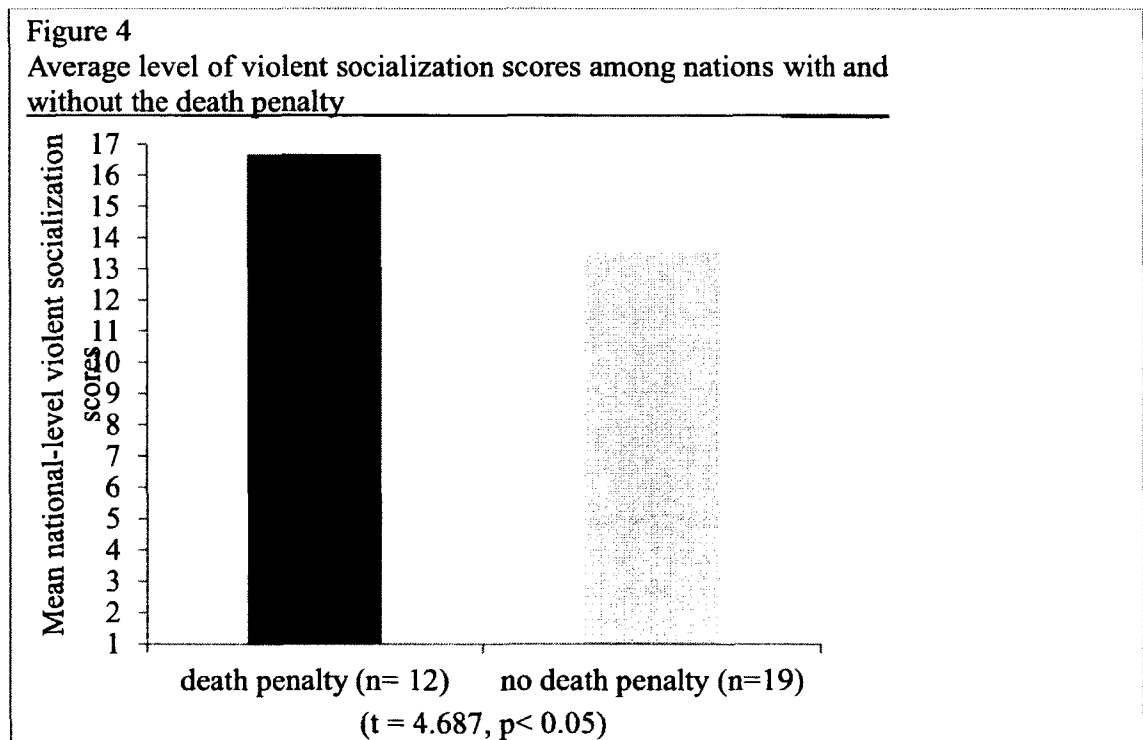


A *t*-test was also used to test whether or not violent socialization significantly differs among nations that have prohibited the use of the death penalty and nations with no such prohibition (see Death Penalty Information Center [2012]). It is expected that if violent socialization processes are part of the norms of violence within any given nation, then nations allowing for the use of the death penalty should have a significantly higher average national-level violent socialization score compared to nations that have banned the use of the death penalty.

Figure 4 shows the results of the independent samples *t*-test in a graph. The average national violent socialization score for the 19 nations with laws prohibiting the use of the death penalty was 13.5263. The average national violent socialization score among the 12 nations that still use the death penalty as a formal of criminal sanctioning

was 16.6667. The results of this *t*-test indicate there are significant differences in national-level violent socialization processes according to the presence or absence of anti-physical discipline laws ($t=2.218, p<0.05$).

Based on the results of these two *t*-tests, there appears to be some preliminary support favoring the norms of violence thesis. Nations that sanction violence against children, in the form of physical discipline, and state-sanctioned homicide, via the death penalty, tend to have higher national-level averages of violent socialization scores. Some nations have associations with violence more so than other nations, such as accepting the use of violence against children and favoring the death penalty. In the present study, violent socialization processes appear to be more frequent in the IDVS nations favoring



violence. It could be concluded from these two specific findings that some nations may hold formal norms in way of laws that sanction violence while other nations have embraced more of a non-violent approach towards in their laws. However, another important factor of norms of violence would be the violent crime rate for each nation.

Bivariate Correlations

Pearson product moment correlation coefficient was examined to further analyze the norms of violence thesis. According to this thesis, the correlation coefficient between violent crime rates, i.e., the rate of intentional homicide (see United Nations [2012]), in each nation of the IDVS and violent socialization as part of the norms of that nation should show violent crime rates are significantly positively associated with violent socialization. If violent socialization processes are part of norms of violence within any given nation, then nations with high violent socialization scores should also have high national-level violent crime rates.

Table 6 displays the results of the bivariate correlations among all the variables. The correlation coefficient indicates that nations with higher violent socialization scores tend to have significantly higher more violent crime, on average ($r= 0.395$, $p<0.05$). This finding lends further support for the norms of violence thesis. Violent crime rates are associated with more violent socialization within each nation. Violence, in general, may be more prevalent in some nations compared to other nations. Hence, violence may be reflected not only in the social conditions of a nation that establish formal norms (i.e., laws), but violent social conditions may also be reflected in informal norms within a

Table 6.

Correlations between level-1 predictor variables (n=15,652), level-2 predictor variables (n=32) and criminal behavior

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<u>Level-2</u>														
<i>violent socialization</i>	-													
<i>discipline</i>	-.36*	-												
<i>death penalty</i>	-.38*	.36*	-											
<i>crime rate</i>	.40*	-.08	-.06	-										
<i>GDP</i>	-.15**	.25	.40*	-.38*	-									
<u>Level-1</u>														
<i>violent family soc.</i>	.91**	-.32~	-.36*	.36*	-.14**	-								
<i>attachment</i>	-.40**	.05	.33~	-.29~	.17**	-.042**	-							
<i>self-control</i>	-.41**	-.18	.29	.22	.23**	-.038**	.42**	-						
<i>gender</i>	.21**	.17	-.14	-.23	-.05**	0.13**	-.09**	-.17**	-					
<i>age</i>	.03**	.07	.08	.12	-.05**	0.03**	-.08**	.03**	.09**	-				
<i>peer criminal behavior</i>	.22**	-.14	-.03	.09	-.06**	0.20**	-.14**	-.25**	.09**	.01	-			
<i>prior criminal behavior</i>	.46**	.06	-.20	-.04	-.06**	0.44**	-.32**	-.42**	.23**	.04**	.18**	-		
<i>social desirability</i>	-.23**	.02	.05	-.01	.00	-.022**	.21**	.43**	-.03**	.03**	-.29**	-.028**	-	
<i>crime</i>	.47**	.05	.08	.01	.42**	0.42**	-.25**	-.42**	.31**	.02*	.20**	0.66**	-.029**	-

** $p \leq 0.01$ * $p \leq 0.05$ ~ $p \leq 0.10$

nation, such as common behaviors among the citizenry. The findings from these three bivariate tests yield some support favoring the norms of violence thesis: both laws and group behavior are part of the social processes that, over periods of time, may become part of the normative experiences of the citizenry within each nation.

Ordinary least squares regression

As an initial step, OLS regression analysis was used to initially test the first hypothesis (H₁): *youth from families that use violent socialization processes will engage in more criminal behavior, compared to youth from families that do not use violent familial socialization processes, even in the presence of effective familial socialization processes (i.e., high self-control and strong family attachments)*. OLS regression provides information about the strength and direction of the relationship between each variable and criminal behavior. As shown in Figure 1 (see chapter 2, p. 40), criminal behavior was regressed on violent socialization within the family, attachments within the family and individual self-control (Model 1). Violent socialization within the family is expected to be significantly associated with more criminal behavior while stronger familial attachments and higher self-control to be significantly associated with less criminal behavior. This prediction is based on analysis of the correlations between these variables. As seen in Table 7, each of the predictor variables is significantly correlated to criminal behavior.

OLS regression was also used to test the second hypothesis (H₂), in part to explore whether or not *criminal behavior varies nation to nation due to violent*

socialization processes. By using the 'split file' command in SPSS 19, criminal behavior was regressed on violent socialization within the family, attachments within the family and individual self-control, plus the control variables, for each nation separately. When examining the regression results for each individual nation, violent socialization within the family is expected to be significantly associated with more criminal behavior while stronger familial attachments and higher self-control to be significantly associated with less individual criminal behavior, in each nation with at least 150 respondents (Fowler, 2009). Otherwise, there may not be sufficient statistical power to detect significant effects of violent socialization within the family, attachments within the family and individual self-control on criminal behavior unless the effect is very large (Lipsey, 1990). For example, violent socialization within the family, familial attachments and high self-control is not expected to significantly predict criminal behavior among the respondents in Iran due to the limited number of cases in this country (n=99).

Multilevel modeling regression analysis

Multilevel modeling regression was used to test the second hypothesis H₂: *criminal behavior will significantly vary nation to nation as a function of violent socialization processes, serving within a context of norms of violence*. Multilevel modeling regression techniques (Bryk & Raudenbush, 1992; Goldstein, 1988) were designed to separate individual and group level effects on the dependent variable. For example, respondents within the same nation may be exposed to similar standards in socialization processes (e.g., see Keller, Otto, Lamm, Yovsi & Kartner, 2008; Levinson,

1989), a context in which these respondents are more similar to each other than to respondents from different nations which could produce more homogeneous experiences. In other words, because socialization processes vary across different nations (Urquiza & Goodlin-Jones, 1994), youth within the same nation may have comparable socialization experiences compared to youth from different nations, creating a contextual effect in which the respondents from the same nation cluster together.

Therefore, using OLS regression alone could be problematic. OLS regression assumes cases are statistically independent (Bryk & Raudenbush, 1992) and measurement error for each predictor variable in the model is independent and unrelated (Hamilton, 1992), normally distributed with mean 0 and variance σ^2 [$N(0, \sigma^2)$]. Because the data in the IDVS were collected as groups of students within the same college/university then aggregated by nation (Straus, 2009) and compiled together into a single dataset, the data can be considered hierarchical data. Assumptions of independence then are violated because of the presence of hierarchical data. This violation, then, could increase the probability of rejecting a null hypothesis (Hamilton, 1992) because error terms for similar cases may be correlated (Luke, 2004). As such, OLS regression alone is not appropriate for this particular study; individual cases within each of the nations are not fully independent. To address the possibility of clustering within nations, multilevel modeling regression analysis becomes an important tool to control for different contextual effects (Bickel, 2007; Luke, 2004) and disentangle possible group level similarities in violent familial socialization process both within and between nations.

Figure 2 (see chapter 2, p. 51) shows criminal behavior regressed on violent socialization within the family, attachments within the family and individual self-control (level-1) and violent socialization as a national context effect (level-2) plus controls (Model 2). The analysis is expected to reveal significant variation in criminal behavior both within and between the different nations, and violent socialization, within this context, will significantly predict criminal behavior. This prediction is based on analysis of the correlations between the main level-2 predictor variable (i.e., violent socialization as a national context effect) and criminal behavior. As seen in Table 7, these two variables are significantly correlated.

CHAPTER IV

VIOLENT FAMILIAL SOCIALIZATION PROCESSES: CONTEXT OF LIVING WITHIN A SPECIFIC NATION

As an initial step, OLS regression analysis was used to examine the strength and direction of the relationship between violent familial socialization processes and criminal behavior among late adolescents/ emerging adults (i.e., youth). Figure 1 (see Chapter 2, p. 41) illustrates the first hypothesized relationship: *youth from families that use violent socialization processes will engage in more criminal behavior, compared to youth from families that use non-violent familial socialization processes, even in the presence of effective familial socialization processes (i.e., high self-control and strong family attachments)*. The purpose of using Ordinary Least Squares (OLS) regression was also to assess the impact of violent familial socialization processes on criminal behavior within each individual nation from the IDVS data. Because there appears to be no published research exploring the parental socialization thesis, as this thesis pertains to the revised self-control theory, nor the effects of violent socialization within the family, through an international perspective, it is important to compare differences or similarities across nations in order to better understand the degree to which ineffective discipline may be associated with criminal behavior. Thus, OLS regression also tested the second

hypothesis, in part: whether or not *criminal behavior varies nation to nation due to violent familial socialization processes*.

Social control through familial socialization processes

Table 7 lists the results of criminal behavior regressed on violent socialization within the family, attachments within the family, and individual self-control among all 32 nations within the IDVS. Model 1 shows *criminal behavior* regressed on violent socialization within the family (*violent family socialization*) without any control variables. Violent socialization within the family alone significantly explains about 18% of the variance in criminal behavior ($R^2 = 0.179$, $p < 0.001$). Increases in *violent family socialization* are significantly associated with increases in individual criminal behavior scores, such that with each one unit increase in *violent family socialization* tends to increase criminal behavior scores by about 0.36 points ($b_1 = 0.357$, $p < 0.001$). The predicted criminal behavior score for the prototypical respondent who experienced *violent family socialization* is approximately 3.47 points. So, the respondents who experienced *violent family socialization* tended to report more criminal behavior (prototypical score of 3.47 points) compared to respondents who did not experience violent familial socialization processes (prototypical score of 3.11 points). This result begins to show support for hypothesis 1: *youth from families that use violent socialization processes tend to engage in more criminal behavior*. But in order to fully substantiate the first hypothesis, attachments within the family (*attachments*) and individual self-control

Table 7.
Criminal behavior regressed on violent socialization within the family, attachment, and self-control (n= 15,652)

	Model 1	Model 2	Model 3	Model 3a	Model 4	Model 5	Model 6	Model 7	Model 8
<i>violent family</i>	0.357***	0.326***	0.264**		0.249***	0.249***	0.243***	0.120***	0.120***
<i>socialization</i> (b ₁)	(0.007)	(0.007)	(0.007)		(0.007)	(0.007)	(0.007)	(0.006)	(0.006)
<i>attachment</i>		-0.091***	0.007		0.008	0.007	0.007	0.053***	0.052***
(b ₂)		(0.009)	(0.009)		(0.009)	(0.009)	(0.009)	(0.007)	(0.007)
<i>self-control</i>			-0.260***	-0.479***	-0.231***	-0.231***	-0.219***	-0.104***	-0.080***
(b ₃)			(0.008)	(0.009)	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)
<i>gender</i>					1.160***	1.164***	1.143***	0.741***	0.768***
(b ₄)					(0.038)	(0.038)	(0.038)	(0.032)	(0.032)
<i>age</i>						-0.007	-0.007	-0.013*	-0.012*
(b ₅)					(0.007)	(0.007)	(0.006)	(0.006)	(0.006)
<i>peers</i>							0.314***	0.202***	0.128***
(b ₆)							(0.035)	(0.029)	(0.030)
<i>delinq</i>								0.589***	0.578***
(b ₇)							(0.008)	(0.008)	(0.008)
<i>socdes</i>									-0.046***
(b ₈)									(0.004)
Constant	3.11***	4.602***	8.849***	22.377***	8.065***	8.210***	7.886***	2.982***	3.896***
	(0.059)	(0.160)	(0.197)	(0.060)	(0.191)	(0.237)	(0.239)	(0.212)	(0.226)
R ²	0.179***	0.186***	0.256***	0.172***	0.308***	0.308***	0.312***	0.513***	0.518***
Adj- R ²	0.179***	0.186***	0.255***	0.172***	0.308***	0.308***	0.312***	0.513***	0.518***

*** p<0.001 ** p<0.01 * p<0.05 ~ p<0.10
(standard errors)

(*self-control*) must be included in the model, along with the control variables.

Attachment

In model 2, Table 7, both the effects of both *violent family socialization* and *attachments* on criminal behavior are tested. This model explains about 19% of the variance in criminal behavior ($R^2 = 0.186$, $p < 0.001$). *Violent family socialization* continues to be significantly associated with increases in criminal behavior scores ($b_2 = 0.326$, $p < 0.001$) when controlling for *attachment*. *Attachments*, however, tend to significantly decrease criminal behavior scores. As respondents report more *attachments*, each one unit in *attachments* is associated with a 0.09 decrease in criminal behavior scores ($b_1 = -0.091$, $p < 0.001$). While stronger *attachments* tend to decrease criminal behavior scores, respondents who experienced *violent family socialization* still tended to have more *criminal behavior*. So, the prototypical youth who experienced *violent family socialization*, yet also had strong *attachments*, have a criminal behavior score of about 4.8. Given that all the youth in the sample had an average criminal behavior score of 4.0, these prototypical youth had slightly higher criminal behavior scores compared to the average scores among all youth. As Hirschi predicts in the revised self-control theory (2004), this results shows that attachments within the family are an important element in predicting criminal behavior. However, when *attachment* is included in the model, attachments seems to slightly confound violent socialization within the family as the coefficient reduces slightly. But *attachments* is not necessarily the most important factor directly predicting *criminal behavior*. As discussed below, when *self-control* is included

in the regression equation (model 3), the direct effects of *attachments* on criminal behavior diminish.

Self-control

Model 3 adds the effect of individual self-control to Model 2. This model offers more explanatory power over previous models, with violent socialization within the family, attachments within the family and individual self-control together significantly explaining about 26% of the variance in criminal behavior ($R^2 = 0.256$, $p < 0.001$), an increase of about 7% over model 2. Respondents who reported higher levels of self-control tended to report lower criminal behavior scores. Each one unit increase in the self-control scale is associated with a 0.26 decrease in criminal behavior scores ($b_3 = -0.260$, $p < 0.001$) when controlling for *violent family socialization* and *attachment*.

The *violent family socialization* coefficient is reduced in Model 3 when the effects of *self-control* are included in the model, but are still significantly associated with *criminal behavior*. For each one unit increase in *violent family socialization*, *criminal behavior* tends to increase by about 0.25 points ($b_1 = 0.249$, $p < 0.001$) when controlling for *attachments* and *self-control*. Therefore, *self-control* seems to confound *violent family socialization*, given the reduction in this coefficient from about 0.36 to about 0.26. Also within this model, the coefficient for *attachment* not only reduces to non-significance but the coefficient is near zero ($b_2 = 0.007$, $p > 0.10$). It would appear that the relationship between *attachments* and *criminal behavior* is completely mediated by

self-control. In other words, when *self-control* is fixed in the model, there is no significant relationship between *attachment* and *criminal behavior*.

To confirm this mediation effect, *criminal behavior* was regressed on *self-control* without any other variables in Model 3a. Because *self-control* is significantly associated with *criminal behavior* in Model 3a ($b_3 = -0.479$, $p < 0.001$), the criteria for a complete mediation effect appears to be met. Both *attachment* and *self-control* are significantly associated with criminal behavior independent of other variables; but when both variables are included within the same model, the direct relationship between *attachment* and *criminal behavior* is essentially non-existent (*cf.* Baron & Kenney, 1986). Although this study did not intend to seek out this mediating effect, other studies, implicitly seeking a mediating effect, have found support that self-control does mediate the relationship between attachments within the family and criminal behavior (e.g., see Burt, Simons, & Simons, 2006; Chapple, Hope, & Whiteford, 2005; Gibbs, Giever, & Martin, 1998; Hope, & Chapple, 2005; Perrone, Sullivan, Pratt, & Margaryan, 2004). So, while the present study found strong evidence for higher levels of both *attachments* and *self-control* associated with direct decreases *criminal behavior* independently, there is also support that *self-control* mediates the relationship between *attachments* and *criminal behavior*. In other words, higher levels of *attachments* are associated with higher levels of *self-control*, which are then associated with decreased *criminal behavior*.

Violent socialization within the family

The final model, model 9, shows the relationship between *violent family socialization* and *criminal behavior* once accounting for *attachments* and *self-control* and the control variables. For each one unit increase in *violent family socialization*, criminal behavior scores increase by approximately 0.12 points ($b_1 = 0.120$, $p < 0.001$) net of controls. *Attachments* continue to be significantly associated with decreased criminal behavior scores. For each one unit increase in *attachments*, criminal behavior scores decrease by about 0.05 ($b_2 = -0.052$, $p < 0.001$), net of controls. *Self-control* also continues to be significantly associated with decreased criminal behavior scores. For each one unit increase in *self-control*, criminal behavior scores tend to decrease by about 0.08 points ($b_3 = -0.080$, $p < 0.001$), net of controls. Every model, regardless of the control variables, continues to show that the respondents who experienced violent familial socialization processes tend to report more criminal behavior than respondents who did not experience violent familial socialization processes. Although it was expected that there would be no significant differences in criminal behavior by age, when youth's prior criminal experience was accounted for in the model there were significant differences. In fact, as youth's age increased the youth in this sample tended to have lower criminal behavior scores ($b_5 = -0.013$, $p < 0.05$) indicating that they engaged in less criminal behavior as they got older.

Overall, the predicted criminal behavior score for youth who reported experiencing violent familial socialization processes is approximately 4.02 points when holding *attachments* and *self-control* constant, net of controls, a criminal behavior score

very slightly higher than the mean criminal behavior score for all respondents. However, when the effects of both *attachments* and *self-control* are accounted for in the model, the prototypical criminal behavior score for youth who reported experiencing violent familial socialization processes reduces to approximately 3.88 points. This may demonstrate that stronger attachments within the family and higher levels of individual self-control offer a degree of protection against the effects of violent familial socialization processes on criminal behavior. This model, violent familial socialization processes, attachments in the family and individual self-control, along with all other control variables, explains about 52% of the variance in individual criminal behavior scores ($R^2 = 0.518$, $p < 0.001$).

Ultimately, while violent familial socialization processes do significantly predict criminal behaviors among the respondents, this result does not fully support the first hypothesis. Youth from families that use violent socialization processes report being involved in more criminal behavior. Yet, when accounting for the effects of attachments in the family and individual self-control, the degree to which youth report being involved in criminal is less. However, this result applies to respondents across all nations, implying that the effects of violent familial socialization processes on criminal behavior are the same across all nations. There could possibly be differences within some of the nations, and therefore the relationship between *violent family socialization* and *criminal behavior* must be examined within each individual nation.

Social control and criminal behavior across different nations

In order to determine if violent familial socialization processes predict criminal behavior for respondents within each nation, separate regression models were run for each nation using OLS regression. The results of the OLS regression for each separate nation are shown in table 8. By separating respondents by nation, the results show the relationship between violent familial socialization processes and respondents' individual criminal behavior are different for each nation such that, among respondents in some of the nations, experiences with *violent family socialization* are not associated with *criminal behavior*. These nations include Australia (AST), Guatemala (GTM), Hungary (HUN), Japan (JPN), Malta (MLT), Mexico (MEX), New Zealand (NZL), Romania (ROM), South Africa (SAF), Switzerland (SWZ), and Taiwan (TWN). For the other nations, respondents' experiences with violent familial socialization processes significantly predict criminal behavior. In fact, the results of this analysis show that respondents who experienced more violent familial socialization processes tended to report having significantly more involvement in criminal behavior. These countries include Belgium (BEL), Brazil (BRZ), Canada (CND), China (CHN), England (ENG), Germany (GER), Greece (GRC), India (IND), Iran (IRN), Israel (ISR), Lithuania (LTH), Netherlands (NTL), Portugal (PGL), Russia (RSS), Scotland (SCT), Singapore (SNG), S. Korea (SKR), Sweden (SWD), Tanzania (TAN), United States (USA), and Venezuela (VNZ). For example, for each one increase in the violent familial socialization processes scale, criminal behavior scores among the respondents from Venezuela (VNZ) tended to

Table 8.

Criminal behavior regressed on violent socialization, attachment, and self-control for each nation in the IDVS

	USA (n=4236)	MEX (n=235)	NTL (n=410)	ENG (n=218)	CHN (n=2502)	ISR (n=153)	SWZ (n=161)	CND (n=1199)	BRZ (n=275)
<i>Violent family</i>	0.136*** (0.011)	0.020 (0.043)	0.107** (0.038)	0.134** (0.048)	0.135*** (0.018)	0.177** (0.066)	0.024 (0.065)	0.127*** (0.026)	0.077** (0.038)
<i>attachment</i>	0.060*** (0.014)	-0.059 (0.056)	-0.003 (0.049)	0.049 (0.067)	0.016 (0.020)	-0.039 (0.070)	0.001 (0.056)	0.081** (0.028)	-0.036 (0.042)
<i>self-control</i>	-0.122*** (0.014)	-0.121* (0.049)	-0.100* (0.044)	-0.152** (0.054)	-0.153*** (0.021)	-0.056 (0.061)	-0.163** (0.061)	-0.145*** (0.027)	-0.109* (0.046)
<i>gender</i>	0.598*** (0.061)	1.165*** (0.318)	0.372~ (0.229)	0.976** (0.290)	0.550*** (0.083)	0.859** (0.310)	0.440~ (0.244)	1.001*** (0.125)	0.566** (0.192)
<i>age</i>	0.012 (0.011)	-0.036 (0.047)	-0.010 (0.028)	-0.030 (0.071)	-0.007 (0.016)	0.054 (0.144)	-0.046 (0.078)	-0.017 (0.022)	0.030 (0.036)
<i>peers</i>	0.128* (0.057)	-0.187 (0.247)	-0.263~ (0.153)	0.117 (0.204)	0.288*** (0.081)	-0.066 (0.257)	0.165 (0.233)	0.162 (0.113)	0.411* (0.181)
<i>delinq</i>	0.588*** (0.016)	0.603*** (0.065)	0.464*** (0.054)	0.515*** (0.065)	0.470*** (0.022)	0.440*** (0.098)	0.705*** (0.076)	0.516*** (0.029)	0.403** (0.056)
<i>socdes</i>	-0.043*** (0.008)	-0.056* (0.028)	-0.064** (0.019)	-0.086** (0.031)	-0.014 (0.013)	-0.008 (0.038)	-0.057~ (0.035)	-0.042** (0.016)	-0.048* (0.024)
Constant	4.127*** (0.437)	7.615*** (1.731)	6.277*** (1.330)	6.951** (2.117)	4.543*** (0.663)	2.247 (3.687)	7.622** (2.286)	5.334*** (0.893)	5.891*** (1.300)
R ²	0.543***	0.583***	0.401***	0.563***	0.548***	0.447***	0.672***	0.495***	0.533***
Adj- R ²	0.542***	0.563***	0.384***	0.542***	0.544***	0.407***	0.650***	0.491***	0.514***

*** p<0.001

** p<0.01

* p<0.05

~ p<0.10

(standard errors)

Table 8 (continued).

Criminal behavior regressed on violent socialization, attachment, and self-control for each nation in the IDVS

	PGL (n=424)	AST (n=210)	SKR (n=243)	SNG (n=231)	NZL (n=137)	IND (n=190)	BEL (n=574)	SCT (n=213)	GER (n= 471)
<i>Violent family</i>	0.108** (0.035)	0.037 (0.044)	0.170** (0.063)	0.088* (0.043)	0.079 (0.067)	0.156* (0.076)	0.160*** (0.040)	0.100* (0.049)	0.172*** (0.038)
<i>attachment</i>	-0.035 (0.037)	0.052 (0.052)	0.146~ (0.079)	0.049 (0.052)	-0.035 (0.087)	0.033 (0.090)	0.078* (0.040)	0.052 (0.062)	-0.019 (0.041)
<i>self-control</i>	-0.057~ (0.037)	-0.208*** (0.050)	-0.144~ (0.081)	-0.081 (0.053)	-0.045 (0.082)	-0.186* (0.094)	-0.124*** (0.034)	-0.140* (0.057)	0.025 (0.042)
<i>gender</i>	0.538*** (0.151)	1.174*** (0.271)	1.618*** (0.317)	0.502* (0.232)	0.674~ (0.409)	1.729*** (0.417)	0.945*** (0.163)	0.871** (0.288)	0.635*** (0.173)
<i>age</i>	0.083* (0.032)	-0.015 (0.032)	-0.047 (0.065)	-0.021 (0.043)	0.038 (0.068)	0.121 (0.089)	0.008 (0.036)	-0.079~ (0.042)	0.015 (0.032)
<i>peers</i>	0.147 (0.141)	0.369~ (0.209)	0.193 (0.325)	0.218 (0.191)	-0.178 (0.351)	-0.369 (0.397)	-0.131 (0.147)	0.217 (0.224)	0.114 (0.163)
<i>delinq</i>	0.347*** (0.048)	0.643*** (0.058)	0.472*** (0.085)	0.596*** (0.060)	0.723*** (0.092)	0.489*** (0.090)	0.690*** (0.045)	0.413*** (0.062)	0.627*** (0.047)
<i>SES</i>	0.144* (0.069)	0.077 (0.110)	0.068 (0.128)	-0.071 (0.097)	0.054 (0.169)	0.079 (0.239)	-0.015 (0.067)	0.183 (0.115)	0.018 (0.081)
Constant	3.371** (1.159)	4.403** (1.507)	5.629* (2.396)	3.068~ (1.623)	5.083* (2.648)	3.195 (3.371)	4.411*** (1.329)	8.472*** (1.661)	2.270 (1.422)
R ²	0.439***	0.643***	0.471***	0.562***	0.590***	0.628***	0.576***	0.532***	0.497***
Adj- R ²	0.424***	0.625***	0.443***	0.540***	0.556***	0.588***	0.568***	0.510***	0.486***

*** p<0.001

** p<0.01

* p<0.05

~ p<0.10

(standard errors)

Table 8 (continued).

Criminal behavior regressed on violent socialization, attachment, and self-control for each nation in the IDVS

	LTH (n=448)	IRN(n=99)	RSS (n=450)	GRC (n=286)	SWD (n=433)	ROM (n=271)	GTM (n=249)	HUN (n=176)	TWN (n=258)
<i>Violent family</i>	0.142** (0.036)	0.122* (0.051)	0.082* (0.036)	0.133** (0.049)	0.119** (0.037)	0.028 (0.030)	-0.004 (0.057)	0.064 (0.057)	0.022 (0.055)
<i>attachment</i>	0.063 (0.044)	-0.055 (0.066)	-0.045 (0.042)	0.024 (0.049)	-0.005 (0.038)	-0.057 (0.052)	-0.097 (0.072)	0.001 (0.063)	-0.164** (0.061)
<i>self-control</i>	-0.162*** (0.043)	-0.156** (0.059)	-0.153*** (0.040)	-0.085~ (0.046)	-0.141* (0.041)	-0.066~ (0.037)	-0.167* (0.055)	-0.009 (0.057)	-0.066 (0.061)
<i>gender</i>	1.108*** (0.184)	0.360 (0.277)	1.261*** (0.162)	0.912*** (0.240)	1.353*** (0.185)	0.615* (0.264)	0.726** (0.266)	1.092*** (0.238)	0.679* (0.326)
<i>age</i>	-0.005 (0.045)	0.347 (0.783)	-0.018 (0.044)	-0.036 (0.049)	0.039 (0.030)	-0.025 (0.044)	0.123* (0.053)	0.075 (0.056)	-0.067 (0.076)
<i>peers</i>	0.194 (0.177)	-0.277 (0.291)	0.295 (0.181)	0.232 (0.205)	0.231 (0.163)	0.031 (0.168)	-0.004 (0.269)	0.528* (0.239)	0.193 (0.254)
<i>delinq</i>	0.455*** (0.055)	0.493*** (0.077)	0.516*** (0.047)	0.718*** (0.062)	0.607*** (0.038)	0.678*** (0.060)	0.585*** (0.058)	0.457*** (0.074)	0.380*** (0.064)
<i>socdes</i>	-0.041 (0.027)	-0.032 (0.038)	-0.049* (0.022)	-0.036 (0.029)	0.018 (0.022)	-0.028 (0.021)	-0.013 (0.038)	-0.068* (0.031)	-0.091~ (0.052)
Constant	5.487*** (1.515)	-1.444 (18.092)	7.262*** (1.321)	3.692* (1.630)	2.627* (1.308)	4.846 *** (1.494)	4.714* (2.188)	2.3360 (2.282)	10.113*** (2.394)
R ²	0.448***	0.634***	0.546***	0.630***	0.643***	0.520***	0.613***	0.471***	0.406***
Adj- R ²	0.435***	0.596***	0.536***	0.614***	0.635***	0.501 ***	0.591***	0.439***	0.371***

*** p<0.001

** p<0.01

* p<0.05

~ p<0.10

(standard errors)

Table 8 (continued).

Criminal behavior regressed on violent socialization, attachment, and self-control for each nation in the IDVS

	JPN (n=207)	MLT(n=112)	TNZ (n=208)	SAF (n=124)	VNZ (n=249)
<i>Violent family</i>	0.039 (0.048)	0.062 (0.077)	0.209** (0.061)	0.018 (0.065)	0.143** (0.043)
<i>attachment</i>	-0.060 (0.051)	-0.005 (0.092)	-0.027 (0.089)	-0.168 (0.110)	-0.058 (0.055)
<i>self-control</i>	-0.057 (0.055)	-0.066 (0.083)	0.059 (0.085)	-0.043 (0.092)	-0.083~ (0.049)
<i>gender</i>	-0.054 (0.204)	0.293 (0.368)	0.628* (0.305)	2.671** (0.867)	0.541* (0.217)
<i>age</i>	-0.044 (0.094)	0.015 (0.056)	0.021 (0.069)	-0.004 (0.065)	0.043 (0.039)
<i>peers</i>	-0.496 (0.264)	0.400 (0.328)	0.573~ (0.305)	-0.132 (0.391)	-0.478* (0.239)
<i>delinq</i>	0.461*** (0.064)	0.660*** (0.100)	0.458*** (0.082)	0.527*** (0.094)	0.423*** (0.061)
<i>socdes</i>	0.046 (0.029)	-0.014 (0.043)	-0.095~ (0.053)	0.000 (0.056)	-0.055* (0.027)
Constant	4.878*** (0.271)	5.613*** (0.232)	3.046 (3.034)	5.940~ (3.311)	5.890** (0.187)
R ²	0.447***	0.475***	0.447***	0.516***	0.437***
Adj- R ²	0.402 ***	0.410***	0.406***	0.462***	0.414***
	*** p<0.001	** p<0.01	* p<0.05		~ p<0.10

(standard errors)

increase by about 0.14 points ($b_1 = 0.143$, $p < 0.01$), with a prototypical score estimated at 6.033, and by about 0.08 ($b_1 = 0.082$, $p < 0.05$) among the respondents of Russia, for a prototypical score estimated at 7.344. Respondents from the Netherlands (NTL) who experienced violent familial socialization processes tended to have the highest criminal behavior scores, net of controls, at 13.999 while respondents from Israel who experienced violent familial socialization processes tended to have the lowest criminal behavior scores at 2.424.

The context of socialization processes

The results show, overall, very low criminal behavior scores among the youth in the present study. While criminal behavior scores ranged from 4 points to 16 points, the mean criminal behavior score for all respondents was approximately 6 points. This may be relative to these youths' status as college students. Criminal behavior should be low amongst college students because, according to self-control theory, those with low self-control would lack the self-discipline and foresight necessary to be successful in college (*cf.* Gottfredson and Hirschi, 1990). More importantly, the results indicate that criminal behavior scores were lowest among those youth who reported both more attachments within their family and higher levels of self-control. Criminological theory, in general, tends to reject the importance of the family in influencing behavior among late adolescents and emerging adults (Schroeder, Giordano, & Cernkovich, 2010). But, certain familial socialization processes are widely supported as associated with preventing youth's criminal behavior (Schmallegger & Bartollas, 2008). This includes attachments within the family and self-control. The results of the present study are consistent with this argument.

However, the results of the present study are inconsistent in reference to the effects of violent familial socialization processes on individual criminal behavior. There appears to be varying results across the different nations. While in 21 nations respondents' experiences with violent familial socialization processes were significantly associated with their criminal behavior, there were respondents in 11 nations for which

experiences with violent familial socialization processes were not significantly associated with their criminal behavior. These results do not seem to show any specific patterns. This result is probably not the result of cross-cultural interpretation or youths' assignment of meaning to the concepts. As stated in the methodology, the survey questionnaires administered in each nation was translated by a member of the Consortium working within the institution in which the survey was administered and all surveys were back-translated upon completion to ensure conceptual equivalence across nations.

Using the regional categorizations from the IDVS (see <http://pubpages.unh.edu/~mas2/Nations1.htm>), the results do not seem to reflect much similarity by region. In the African nations, violent familial socialization processes were significantly associated with respondents' criminal behavior in Tanzania but not in South Africa. In the Asian nations, violent familial socialization processes were significantly associated with respondents' criminal behavior in China, India, Singapore, and South Korea but not in Japan and Taiwan. Among the European nations, violent familial socialization processes were significantly associated with respondents' criminal behavior in Belgium, England, Germany, Greece, Lithuania, Netherlands, Portugal, Russia, Scotland, and Sweden. Violent familial socialization processes were not significantly associated with respondents' criminal behavior in Malta, Hungary, Romania, and Switzerland. In the Latin American nations, violent familial socialization processes were significantly associated with respondents' criminal behavior within Brazil and Venezuela, but not in Guatemala or Mexico.

There appears to be three regions that seemed to have some similarity for these findings. In both Australia and New Zealand, violent familial socialization processes were not significantly associated with respondents' criminal behavior. But in the Middle Eastern nations (i.e., Iran and Israel), violent familial socialization processes were significantly associated with respondents' criminal behavior. This is also true for the North American nations, in that criminal behavior for respondents in the US and Canada was significantly associated with youth's experiences with violent familial socialization processes. Unfortunately, there appears to be little similarities between the Middle Eastern nations and the North American nations. For example, these two Middle Eastern nations have a religion specific context and are considered, to some degree, economically developing nations. The North American nations are post-industrial nations that tend to be more diverse in religion. Thus, further research is necessary to discover what societal influences may be present to explain similarities in violent familial socialization processes between these two Middle Eastern nations and two North American nations that might significantly contribute to individual criminal behavior.

The results also do not seem to be influenced by the varying sample sizes for each nation. For example, there were only 99 respondents in Iran and, even with this small sample, significant effects were detected in the regression analysis; but with a sample size 271 respondents, no significant effects were detected in Romania.

These results partially support the first hypothesis: *youth from families that use violent socialization processes will engage in more criminal behavior, compared to youth from families that use non-violent familial socialization processes, even in the presence*

of effective familial socialization processes (i.e., high self-control and strong family attachments). But only in *some* nations do youth from families that engage violent socialization processes commit more criminal behavior, even when controlling for the effects of attachments in the family and the degree of individual self-control. Further, the results from OLS regression analysis within each nation indicate support for the second hypothesis, in part. Violent familial socialization processes were significantly associated with criminal behavior across some of the different nations in the IDVS.

While there are no apparent patterns using OLS regression to analyze individual criminal behavior across these different nations, this analysis was useful to support this need for multilevel modeling regression analysis. Multilevel modeling regression analysis was used to determine if there was significant variation in criminal behavior scores across different nations and if violent socialization processes could account for this variation.

Familial socialization processes as social control

The present study begins to extend the findings of previous research on Gottfredson and Hirschi's parental socialization thesis by demonstrating that, to some degree, certain familial socialization processes may be ineffective in controlling youth's criminal behavior. The familial socialization process at the focus of this study, violent socialization, has been shown to be associated with individual criminal behavior within some nations. Although some of the youth had lower criminal behavior scores than other

youth, and these individual level results were different nation to nation, the results seem to indicate that if familial socialization processes involve violence then these familial socialization processes are ineffective as social control, particularly as control over criminal behavior. Hence, violent familial socialization processes may be a deviant behavior within the family that, argued by Gottfredson and Hirschi, fails to prevent criminal behavior among youth.

Gottfredson and Hirschi seem to argue that effective socialization processes should produce consistent results across all nations. Specifically, effective socialization processes should prevent criminal behavior. But there are few studies that have examined the co-occurring relationships between violent familial socialization processes, self-control and criminal behavior (Perrone et al., 2004) as done in the present study. Arguably, then, the opposite could also be true. Ineffective parental socialization, such as violent familial socialization processes, should be associated with significantly more criminal behavior consistently across all nations. Yet the results of this study show a lack of individual consistency in the relationship between violent familial socialization processes and criminal behavior not only among all the nations but also across regions.

The results of the OLS regression analysis in the present study can only partially support the two hypotheses, in that *youth from families that use violent socialization processes tend to engage in more criminal behavior, compared to youth from families that use non-violent familial socialization processes, even in the presence of effective familial socialization processes (i.e., high self-control and strong family attachments) and criminal behavior is different, nation to nation, when accounting for the effects of violent*

familial socialization processes within some nations. However, there may be a contextual effect in which criminal behavior varies as a function of violent socialization processes. OLS regression analysis is not sufficient for analyzing such a contextual effect (Hamilton, 2013). In order to determine if a contextual effect does exist within these 32 nations, the complete data need to be explored using multilevel modeling regression analysis in order to examine the degree to which criminal behavior varies across different nations as a function of violent socialization processes. Therefore, the analyses continue to the next chapter in order to examine whether or not violent socialization processes, as part of norms of violence within any given nation, are significantly associated with criminal behavior and how much of the variance in criminal behavior can be explained by violent socialization processes across the 32 different nations.

CHAPTER V

VIOLENT FAMILIAL SOCIALIZATION PROCESSES: THE CONTEXT OF AGGREGATE SOCIALIZATION PROCESSES

As outlined earlier, youth living in the same nation may cluster together based on similarities in socialization experiences. Therefore, in the present study, there may be a contextual effect of violent socialization processes within each of the 32 nations in the IDVS. In some nations, violence may be part of the normative experiences for the youth living in that nation. In this sense, *criminal behavior may significantly vary nation to nation as a function of violent socialization processes, serving within a context of norms of violence*. To address this issue of possible group level similarities by nation, multilevel modeling regression analysis (MLM) controls for different contextual effects within and between groups (Bickel, 2007; Luke, 2004). Multilevel modeling regression analysis effectively models the impact of differences at a national level on individual outcomes.

There are a small number of nations for the level-2 analysis (n=32) in the present study, which would typically be expected to lack sufficient statistical power to detect the effects of violent socialization criminal behavior (Hayes, 2006; Lipsey, 1990). However, analysis of the correlations for the level-2 sample size (see Chapter 3, p. 95) and exploration of the regression parameter estimates (i.e., intercept and slope), described

below in the preliminary data analysis section, suggest that, the expected effect sizes should be large enough to detect a statistically significant relationship between *violent socialization* and *criminal behavior*, if this relationship exists, despite the small level-2 sample size.

The estimated intraclass correlation coefficient (ICC), calculated as $p = T_{00} / \sigma^2 + T_{00}$ from Model 0 in Table 9,⁴ is used as a parameter estimate to determine the proportion of total variance that accounts for the clustering (Hayes, 2006) of violent socialization processes for each nation. The ICC, listed in table 11, indicates that 5.7% of the variation in criminal behavior is between nations, showing some clustering of criminal behavior between nations.⁵ MLM, then, is an important tool to disentangle possible contextual effects.

Preliminary analysis

To begin the analyses, exploratory multilevel models were used to determine the degree to which criminal behavior varies among the nations in the IDVS (i.e., the ‘unconditional model’), the association between a contextual effect of violent socialization processes and criminal behavior (i.e., ‘means as outcome model’), and the influence of *violent family socialization*, *attachments*, and *self-control* on criminal behavior (i.e., ‘random coefficient models’). The results from fitting each of these preliminary models to the data are shown in Table 9.

⁴ The calculated ICC is $0.297 / (4.907 + 0.297) = 0.057$.

⁵ Most of the variation in criminal behavior is explained by individual level factors (94.3%).

Table 9: Results from fitting the preliminary multilevel models to self-reported criminal behavior regressed on level-1 and level-2 main predictors (n of college students=15,652; n of nations=32)

		Model 0	Model 1	Model 2a	Model 2b	Model 2c	Model 2d	Model 2e
Fixed Effects								
Intercept	Y_{00}	5.874***	5.895***	5.889***	5.875***	5.830***	5.828***	5.824***
<i>violent socialization</i>	Y_{01}		0.276***					
<i>violent family socialization</i>	Y_{10}			0.335***	0.302***	0.238***	0.233***	0.254***
<i>attachment</i>	Y_{20}				.080***		-0.017**	-0.019**
<i>self-control</i>	Y_{30}					-0.308***	-0.304***	-0.304***
Variance Components (Random Effects)								
Level-1: Within	σ^2	4.907***	3.766***	4.025***	3.979***	3.535***	3.533***	3.544***
Level-2: Between	T_{00}	0.297***	0.184***	0.207***	0.227***	0.286***	0.291***	0.282***
	T_{01}			0.008*	0.003*	0.002*	0.002*	
	T_{11}			0.023**	0.022**	0.021**	0.021**	
Interclass Correlation		5.7%						
Pseudo-R²								
% reduction within			23.3	18.0	18.9	28.0	28.0	27.8
% reduction between			38.0	30.3	23.6	3.7	2.0	5.0
Goodness of Fit Statistics								
2LL		56065.262	52713.007	53567.660	53426.145	51939.073	51931.945	51961.092
AIC		56071.262	52721.007	53579.660	53440.145	51953.073	51947.945	51973.092
BIC		56093.596	52750.785	53624.328	53492.257	52005.185	52007.502	52017.760
*** p<0.001		**p<0.01	*p<0.05		~p<0.10			

Criminal Behavior

The unconditional model in table 9, Model 0, a model containing no predictors (Wang, 1998) that is used to determine the amount of variation in criminal behavior within and between nations, models the observed score for individual i in country j as the sum of an overall average score for criminal behavior across all nations, plus two residuals (one representing deviations between each nation average criminal behavior score and the mean for all countries, and the other residual representing the deviation in criminal behavior between individual i and his or her respective national mean). The composite equation for this model is specified as:

$$Y_{ij} = Y_{00} + [u_{0j} + r_{ij}].$$

Results from fitting this unconditional model indicate that the predicted mean score for criminal behavior, across all nations, is estimated at about 5.9 points ($Y_{00} = 5.874$, $p > 0.001$) on a scale ranging from 4 points to 16 points. The unconditional model also shows that there is significant variation in criminal behavior scores both within each nation ($\sigma^2 = 4.907$, $p < .001$) and between the different nations ($T_{00} = 0.297$, $p < .001$) with about 15 times more variation in criminal behavior scores *within* each nation compared to between the different nations. To understand if there is a contextual effect of violent socialization, the preliminary analysis needs to continue to examine if *criminal behavior* continues to significantly vary once accounting for the contextual effect of *violent socialization*.

Violent socialization as a contextual effect

Violent socialization, the main level-2 predictor, is added to the unconditional model in the means as outcome model, Model 1. This model examines if the effect of violent socialization at the national level is associated with *criminal behavior*. The equation for the full means as outcome model is specified as:

$$Y_{ij} = [\gamma_{00} + \gamma_{01} \text{violentsocialization}_j] + [u_{0j} + r_{ij}].$$

This model estimates that nations with mean levels of violent socialization average criminal behavior scores of about 5.9 points ($\gamma_{00} = 5.895$, $p < 0.001$) when accounting for the effect of violent socialization. Higher national levels of *violent socialization* tend to significantly increase criminal behavior scores, by an estimated 0.28 points for each 1 increase in the *violent socialization* scale ($\gamma_{01} = 0.276$, $p < .001$). The results from fitting Model 1 indicate that *violent socialization* alone explains about 23% of the variation in criminal behavior within the same nation and about 38% between different nations (i.e., Pseudo- R^2). Further, in this model, after controlling for *violent socialization*, not only do estimated criminal behavior scores within nations continue to significantly vary ($\sigma^2 = 3.766$, $p < .001$), there also continues to be significant differences in criminal behavior scores across different nations ($T_{00} = 0.184$, $p < .001$). The second hypothesis, in part, is supported, in that *criminal behavior varies nation to nation due to violent socialization processes*. However, because the null hypothesis is rejected by the intercept variance ($T_{00} = 0.184$, $p < .001$), there still may be additional “explainable” variation that accounts for criminal behavior. Hence, how much variation in criminal behavior can be accounted for by respondents’ individual circumstances (e.g., experiences of violent socialization

within their individual family, attachment within respondents' individual family, and individual self-control)?

Violent socialization within the family, attachments and self-control

To answer this question, the random coefficient models (models 2a through 2e) is a series of models adding respondents' experiences of violent socialization within their individual families, attachment within respondents' individual families, and individual self-control one at a time as fixed effects, while testing the random effects of violent socialization within individual families in each model, to the unconditional model. The present study is primarily testing the effects of violent socialization processes on criminal behavior, rather than complicate the model with multiple different random effects. Allowing the effects of attachments within the family and individual self-control to randomly vary will unnecessarily complicate the model. Therefore, the models allow the effects of only violent socialization within the family to vary. This analysis is necessary to examine the degree to which criminal behavior varies within each nation when accounting for the effects of these level-1 variables.

The results from fitting all the random coefficient models (models 2a – 2e) shows that the effects of all three independent variables on criminal behavior scores are relatively similar. The general linear hypothesis tests, used to determine which model best fits the data, indicate that the overall best fitting model is Model 2d. (The general linear hypothesis tests are shown in Table 13 in Appendix D). The equation for the full random coefficient model is

$$Y_{ij} = [\gamma_{00} + \gamma_{10} \text{violentfamily} \text{socialization} + \gamma_{20} \text{attachment} + \gamma_{30} \text{selfcontrol}] + [u_{0j} + u_{1j} \text{violentfamily} \text{socialization} + r_{ij}].$$

Model 2d shows that, on average, criminal behavior scores for respondents with average levels of *violent family socialization*, *attachments*, and *self-control* are estimated at 5.9 points ($\gamma_{00} = 5.828$, $p < 0.001$). However, higher levels of *violent family socialization* tend to significantly increase criminal behavior scores, by an estimated 0.23 points for each 1 increase in the *violent family socialization* on average ($\gamma_{01} = 0.233$, $p < 0.001$). Stronger *attachments* and higher levels of *self-control* tend to significantly decrease criminal behavior scores, with *attachment* decreasing scores by an estimated 0.02 points on average ($\gamma_{20} = -0.017$, $p < 0.01$) and *self-control* decreasing scores by an estimated 0.30 points on average ($\gamma_{30} = -0.304$, $p < 0.001$). The pseudo- R^2 indicates that *violent family socialization*, *attachments* and *self-control* together explain about 28% of the variation in criminal behavior scores within the same nation, while these same variables explain only about 2% of the variation in criminal behavior scores across the different nations. This finding was expected, as these three level-1 variables should explain more of the variance in *criminal behavior* within the same nation given that the variable are measured at the individual level (within the nation).

Analysis

Examining these exploratory multilevel models together, the average criminal behavior score is relatively consistent ($\gamma_{00} \approx 5.9$, $p < 0.001$) even when accounting for the effects of violent socialization processes and individual-level *violent family socialization*,

attachments, and *self-control*. Given the results of the general linear hypothesis test, models 1 and 2d were combined to explore the effects of both the level-1 and level-2 variables together in predicting criminal behavior scores. The final multilevel model consists of three equations: the individual-level model, the contextual effect model, and the composite model. These three models together allow for an examination of the degree to which violent socialization processes may be associated with *criminal behavior*. The equations for these three models are specified as:

Level-1:

$$\text{criminal behavior}_{ij} = \beta_{0j} + \beta_{1j} \text{ violentfamily} \text{ socialization} + \beta_{2j} \text{ attachment} + \beta_{3j} \text{ selfcontrol} + r_{ij},$$

where $r \sim N(0, \sigma^2)$

Level-2:

$$\begin{aligned} \beta_{0j} &= Y_{00} + Y_{01} \text{ violent} \text{ socialization}_j + u_{0j} \\ \beta_{1j} &= Y_{10} \\ \beta_{2j} &= Y_{20} \\ \beta_{3j} &= Y_{30} \\ \text{where } u_{0j} &\sim N(0, T_{00}) \end{aligned}$$

Composite:

$$\text{criminal behavior}_{ij} = [Y_{00} + Y_{01} \text{ violent} \text{ socialization}_j + Y_{10} \text{ violent} \text{ family} \text{ socialization}_{ij} + Y_{20} \text{ attachment}_{ij} + Y_{30} \text{ selfcontrol}_{ij}] + [u_{0j} + r_{ij}].$$

The final taxonomy of multilevel models include the fixed effects of *violent socialization* (Y_{01}), *violent family socialization* (Y_{10}), *attachments* (Y_{20}), and *self-control* (Y_{30}), and the random effects of *violent family socialization* (σ^2 , T_{00} , T_{01} , T_{11}). The random effects indicate that the effect of violent socialization within individual families is variable (e.g.,

in model 3, $T_{11} = 0.016$, $p < .01$) and this effect varies in nations with different mean criminal behavior scores (e.g., in model 3, $T_{01} = 0.002$, $p < .01$). Each model in the taxonomy of models is fitted as a progressively more complex multilevel model, by adding one level-1 or level-2 variable to each model, as without other important control variables associated with criminal behavior included in the model relationships could be spurious. The results of these taxonomies are presented in Table 10.

Contextual effect of living within a nation

Looking at model 3, which includes no control variables, only the random coefficient slopes and the means as outcome slope, the mean criminal behavior score for youth of average levels of self-control living in families who use an average amount of violent socialization and have average levels of *attachments*, within nations of average levels of *violent socialization* is about 5.9 points ($Y_{00} = 5.873$, $p < 0.001$). These results indicate that the combined effects of both the level-1 and level-2 main predictors do not substantially alter criminal behavior scores over the unconditional model. But the effect of violent socialization shows that higher levels of *violent socialization* tend to significantly increase criminal behavior scores, by about 0.26 points ($Y_{01} = 0.240$, $p < 0.001$), on average, for each 1 unit increase in the *violent socialization* scale, net of the level-1 variables. For the level-1 variables, *violent family socialization* tends to significantly increase criminal behavior scores, by about 0.02 points ($Y_{10} = 0.107$, $p < 0.001$) on average for each 1 unit increase in *violent family socialization*, net of the level-

Table 10: Results from fitting the taxonomy of multilevel models to self-reported criminal behavior regressed on level-1 and level-2 main predictors (n of college students=15,652; n of nations=32)

		Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Fixed Effects								
Intercept	Y ₀₀	5.873***	5.836***	6.125***	5.896***	5.895***	5.875***	5.875***
violent family socialization	Y ₁₀	0.107***	0.107***	0.039*	0.037*	0.063***	0.063***	0.063***
attachment	Y ₂₀	-0.029*	-0.023**	-0.022**	-0.021**	-0.026***	-0.031***	-0.028***
selfcontrol	Y ₃₀	-0.269***	-0.271***	-0.254***	-0.255***	-0.246***	-0.130***	-0.129***
gender	Y ₄₀			0.953***	0.947***	0.936***	0.644***	0.635***
age	Y ₅₀				0.014*	0.014*	0.005	0.006
peer	Y ₆₀					0.268***	0.175***	0.170***
prior	Y ₇₀						0.547***	0.545***
socdesire	Y ₈₀							-0.040***
violent socialization	Y ₀₁	0.260***	0.259***	0.201***	0.194***	0.165***	0.135***	0.135***
GDP	Y ₀₂		-0.839*	-0.716*	-0.545*	-0.675	-0.266	-0.425~
Variance Components (Random Effects)								
Level-1: Within	σ^2	3.346***	3.355***	3.180***	3.179***	3.163***	2.330***	2.312***
Level-2: Between	T ₀₀	0.277***	0.310***	0.315***	0.304***	0.301***	0.135***	0.134***
	T ₀₁	0.002*	0.002*	0.001*	0.002*	0.002*	0.001	0.001
	T ₁₁	0.017**	0.019**	0.007*	0.016*	0.016*	0.008*	0.008*
Pseudo-R²								
% reduction within		31.8	31.6	32.9	35.2	35.5	52.5	52.9
% reduction between		6.7	0	0	0	0	54.5	54.9
Goodness of Fit Statistics								
2LL		51259.438	51294.065	50620.968	50617.024	46653.247	46641.706	46652.101
AIC		51277.438	51310.065	50640.968	50639.024	46679.247	46669.706	46680.101
BIC		51344.440	51310.077	50715.414	50720.915	46776.027	46773.930	46784.326
*** p<0.001	**p<0.01		*p<0.05		~p<0.10			
(standard errors)								

2 and other level-1 variables. Further, stronger *attachments* and higher levels of *self-control* tend to significantly decrease criminal behavior scores, with *attachments* decreasing criminal behavior scores by about 0.03 points ($Y_{20} = -0.029$, $p < 0.001$) on average and *self-control* decreasing scores by about 0.27 points ($Y_{30} = -0.269$, $p < 0.001$) on average.

In model 3, partitioning of the variance components shows that approximately 32% of the variation in *criminal behavior* within the same nation (Pseudo- $R^2 = 31.8$) can be explained by both the main level-1 and level-2 predictors, while these same variables explain about 7% of the variation in *criminal behavior* between different nations (Pseudo- $R^2 = 6.7$). Analysis of the effects for both individual familial socialization processes and violent socialization occurring within a context seems to indicate that criminal behavior is significantly explained through a combination of individual familial socialization processes and the context in which these socialization processes occur (i.e., nation). Further, variation in criminal behavior, at least within each of the 32 nations, is better explained through a context in which violent socialization may be more prevalent within certain nations. In other words, when including both level-1 and level-2 main predictor variables, the pseudo- R^2 in model 3 increases by approximately 8.5% over model 1 (contextual effect only) and 3.6% over model 2d (individual circumstances only) for the within nation variance components. However, because the null hypothesis continues to be rejected by the intercept variance (T_{00}), there still exists additional “explainable” variation to account for criminal behavior scores. Hence, the relationship

between the predictor variables and criminal behavior across nations could be spurious. Including control variables is necessary to rule out a spurious relationship.

The context of aggregate socialization processes

The final model, Model 9, includes the level-1 and level-2 predictor variables along with the control variables. Even when the control variables are added to the model, the mean criminal behavior score remains relatively stable at 5.9 points ($Y_{00} = 5.875$, $p < 0.001$), on average. The effect of *violent socialization* continues to show that higher levels of *violent socialization* tend to significantly increase criminal behavior scores, by about 0.14 points ($Y_{01} = 0.135$, $p < 0.001$), on average, for each 1 unit increase in *violent socialization*, net of controls. For the level-1 variables, *violent family socialization* also continues to significantly increase criminal behavior scores, by about 0.06 points on average ($Y_{10} = 0.063$, $p < 0.001$) for each 1 unit increase in *violent family socialization*, net of controls. *Attachments* and *self-control* continue to significantly decrease criminal behavior scores with *attachment* decreasing scores by about 0.03 points on average ($Y_{20} = -0.027$, $p < 0.01$) and *self-control* decreasing scores by about 0.11 points on average ($Y_{30} = -0.106$, $p < 0.001$). This model explains about 53% of the variation in criminal behavior within the same nation (Pseudo- $R^2 = 52.9$), and about 56% of this variation between different nations (Pseudo- $R^2 = 55.6$).

Other than the main predictor variables, respondent's prior involvement in criminal behavior is the only control variable that substantially contributes to explainable variance in criminal behavior. When *prior* is included in model 8, the pseudo- R^2

increases about 26% within nations and about 55% between different nations over model 7. More than half of the explainable variance in criminal behavior has been explained once accounting for the effects of the main predictor variables and *prior*, net of other controls. *Prior* seems to be an important control variable, given this increase in the “explanatory” power within the multilevel models once this control is included.

Gottfredson and Hirschi (1990) argue that one of the best predictors of crime is prior criminal behavior (also see Morris, Gerber, & Menard, 2011). But despite controlling for prior involvement in criminal behavior, *violent socialization* (level-2) and *violent family socialization* (level-1) is still associated with national-level criminal behavior. The only influence *prior* seems to have on *violent family socialization* is that the random effects of violent socialization within individual families no longer varies within nations ($T_{01} = 0.135, p > .10$). Hence, *prior* may not be the ‘best’ predictor but merely one of the many contributing factors associated with criminal behavior. This is supported by the findings, in that there still exists some additional “explainable” variation to account for criminal behavior scores ($T_{00} = 0.135, p < 0.001$). The results remain relatively consistent in the final model, model 9, once controlling for the degree to which youth may have answered the survey with socially desirable responses. So while the relationship between the main predictor variables and criminal behavior could be spurious, Model 9 does explain more than half the variation in criminal behavior within and between the nations included in the IDVS.

Violent socialization as part of a norm of violence

Overall, the results of the multilevel modeling regression analysis show that, on average, criminal behavior scores are significantly increased by the effect of violent socialization processes. The level-1 analysis indicates that attachments within the family and individual self-control are significantly associated with lower criminal behavior scores on average, net of controls. These individual-level findings were expected. The level-2 analysis reveals that there is not substantive change in criminal behavior scores once accounting for the effects of level-1 violent socialization, net of controls. The effect of violent socialization is significantly associated with criminal behavior scores across different nations, fully supporting the second hypothesis.

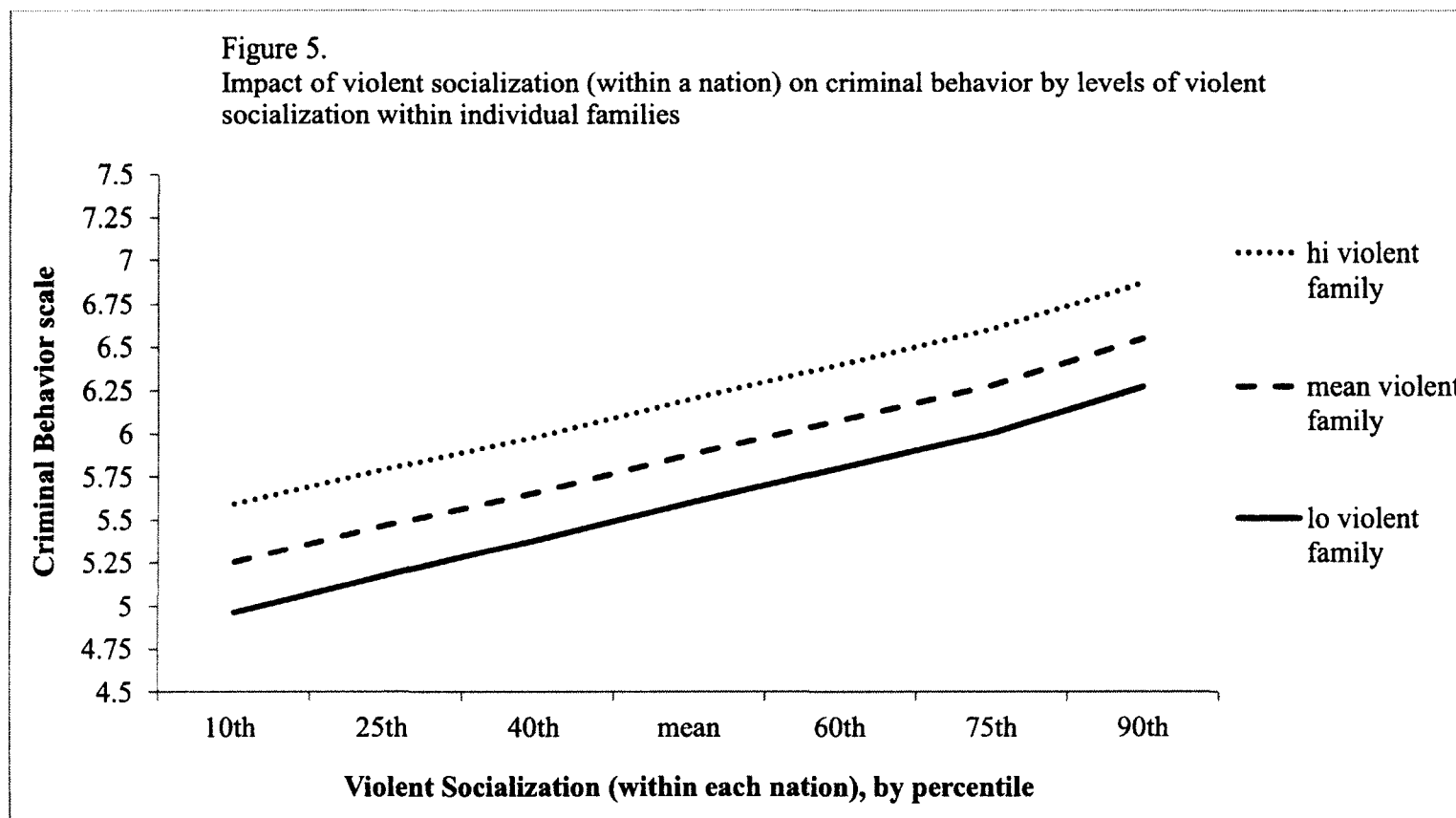
Current life circumstances

To visually explore the main research questions, Figure 5 depicts the relationship between *violent socialization* and *criminal behavior*, separated by the degree to which youth experienced violent socialization within their individual families, holding *attachment* and *self-control* constant at the mean. Using the descriptive statistics from Table 3 (see Chapter 3, p. 72), Figure 5 was created using the minimum and the maximum values for *violent socialization* and *violent family socialization*. The other values for *violent socialization* are the 25th, 40th, 60th and 75th percentiles fitted to the regression equation for model 9, the model with the highest amount of overall “explainable” variance both within and across nations. All the continuous control

variables are held constant at the mean and dichotomous control variables are set at zero (0). Overall, while criminal behavior scores, on average, increase as *violent socialization* increases, the highest criminal behavior scores tend to occur among youth who experienced more violent socialization within their individual families and who live within a nation in which violent socialization exists more (dotted line, Figure 5). This graph also shows that the effect of individual families on criminal behavior may mitigate the context of violence in which youth experience life circumstances. Violent socialization may be more prevalent within some nations, positively contributing to criminal behavior; but if youth live within families who use less violent socialization processes, these youth tend to report being involved in less criminal behavior. Figure 5 visually displays the significant variation in mean criminal behavior scores across nations, by showing both the impact of the contextual effect of violent socialization (level-2) and violent socialization within their individual families (level-1).

Norms of violence

The results show a significant relationship between the contextual effect of violent socialization and *criminal behavior*. *Criminal behavior* tends to increase if aggregates of families within that given nation, as a group, use violence in their socialization processes. This is not an individual effect that can be used to explain variance in individual criminal behavior; rather, *violent socialization* was tested as a contextual effect within and across nations. In other words, the results show that criminal behavior varies as a function of *violent socialization*. At the same time, the effects of



violent socialization also significantly vary, including in nations with varying levels of criminal *behavior*. And these results remain statistically significant even when accounting for the effects of the individual-level variables and control variables. These results demonstrate a contextual effect of *violent socialization*. And this contextual effect has been conceptualized as part of the normative experiences within any given nation. Violent socialization processes may be unique to that nation, occurring in conjunction with other manifestations of violence, but at the same time vary across different nations.

Analyzing norms of violence

While violent socialization has been shown, on average, to significantly vary across the different nations in the ODVS, the statistics cannot explain why this variation may occur or the context in which such variation does occur. Yet there is some published research that has explored possible contextual explanations, as these explanations pertain to the use of physical discipline. Among nations with laws prohibiting the use of physical discipline on youth the citizenry tends to hold less social approval for this disciplinary practice (Zolotor & Puzia, 2010). Straus' (2010) criminogenic theory argues that there tends to be less crime in nations that have prohibited the use of physical discipline. However, these studies focus solely on the context of physical discipline, one manifestation of violent socialization processes, and do not include various other indicators of violence.

To examine the proposed context of norms of violence, table 11 lists several different contextual indicators of violence across each of the 32 nations (e.g., violent

socialization processes, the use of the death penalty, violent crime rates). There appears to be variation in the scores for each of these indicators of violence across the different nations. However, by focusing the analysis on nations with higher scores and lower scores among these various indicators of violence, there are some patterns.

Consistent with the argument throughout the present study, analysis of the indicators of violence listed in Table 11 reveals that some nations have higher scores on all the indicators of violence. For example, Tanzania has an overall high mean violent socialization score (17.12) compared to other nations' mean violent socialization scores. The mean criminal behavior score is also relatively high (7.32). There was not enough data to calculate a mean violent crime rate. Tanzania has no laws prohibiting the use of physical discipline against youth (no). The death penalty is used as a form of criminal sanction (yes). It would appear that there may be more violence in Tanzania than in other nations within the IDVS. Tanzania may be one of the nations in which violence is a normative experience, and such normative experiences are reproduced within socialization processes.

At the same time that there are some nations with higher scores on the indicators of violence, there are also some nations with low scores on the indicators of crime. Within the Netherlands, the overall mean violent socialization score (12.60) was low compared to other nations' mean violent socialization scores. The mean national violent crime rate is also low (1.32) in relation to the mean violent crime rate for other nations in

Table 11.
Indicators of violence, by nation (IDVS)

country	mean violent socialization	anti-physical discipline law	use of death penalty	mean violent crime rate	mean national criminal behavior score
Australia	13.80	no	no	1.57	5.96
Belgium	11.93	yes	no	2.10	5.75
Brazil	13.99	no	yes	33.80 ⁶	5.64
Canada	13.88	yes	no	1.92	6.42
China	15.74	yes	yes	2.47 ⁶	5.92
England	14.32	yes	no	1.53	5.67
Germany	14.35	yes	no	1.23	6.63
Greece	14.54	yes	no	1.32	5.96
Guatemala	14.81	yes	yes	33.68	6.21
Hungary	13.41	yes	no	2.32	5.36
India	14.88	no	yes	4.01	6.01
Iran	13.87	yes	yes	-- ⁷	5.15
Israel	13.26	yes	yes	2.72	5.14
Japan	13.52	yes	yes	0.5	4.93
Lithuania	14.25	yes	no	-- ⁷	6.31
Malta	13.69	yes	no	0.95 ⁶	5.46
Mexico	16.32	no	no	13.24	5.80

⁶ These nations had less than 10 years of data for the violent crime rate: Brazil (3 years), China (4 years), Malta (6 years), South Korea (6 years),

⁷ These nations had no data available for violent crime rates.

Table 11. (continued)
 Indicators of violence, by nation (IDVS)

country	mean violent socialization	anti-physical discipline law	use of death penalty	mean violent crime rate	mean national criminal behavior score
Netherlands	12.60	yes	no	1.32	5.04
New Zealand	13.53	yes	no	1.34	6.29
Portugal	14.22	yes	no	1.10	5.35
Romania	14.25	yes	no	2.68	4.99
Russia	15.22	yes	yes	-- ⁷	6.84
Scotland	15.81	yes	no	2.25	6.10
Singapore	13.55	no	yes	0.81	5.24
S. Africa	16.73	yes	no	49.56	6.42
S. Korea	16.16	no	-- ⁸	2.18 ⁶	6.38
Sweden	11.88	yes	no	1.03	5.53
Switzerland	13.62	yes	no	1.10	5.87
Taiwan	17.22	yes	yes	5.68	6.29
Tanzania	17.12	no	yes	-- ⁷	7.32
United States	14.85	no	yes	6.09	6.34
Venezuela	14.38	yes	no	31.00	5.42

⁸ There is no data for South Korea regarding laws that support the use of the death penalty.

the IDVS. The Netherlands has laws that prohibit the use of physical discipline against youth (yes) and does not use the death penalty as a form of criminal sanction (no). The mean criminal behavior score within the Netherlands (5.04) is lower than the average criminal behavior score across all nations. It would appear, overall, that there may be less violence in the Netherlands. As such, the norms within the Netherlands may influence socialization such that violence, in any form, may be considered an unacceptable method of socialization.

However, among most of the nations, there does not appear to be consistency across the indicators of violence. One example is Japan. Similar to the Netherlands, there are low mean scores for violent socialization (13.52) and violent crime (0.5) compared to other nations' mean scores. The use of physical discipline against youth (yes) is prohibited, but the death penalty is still currently used in Japan (yes). Mexico is another nation. Within Mexico, there is a relatively high mean violent socialization score (16.32) and violent crime rate (49.56). While there are no laws that prohibit the use of physical discipline against youth (no), the death penalty is not used as a criminal sanction (no). The mean criminal behavior score (5.80) is close to the average for all nations in the IDVS. Given that the inconsistency in indicators of violence across these nations are in relation to laws for these nations, it may be that despite laws can be important reflections of the overall norms within the nation laws associated with violence or the prevention of violence alone are not sufficient indicators of norms of violence. Rather, a context of violence within any nation requires multiple different indicators that reflect the norms within a nation.

The analysis of indicators of violence across different nations preliminarily offers a general sense of violence occurring within a context specific to any given nation. Normative experiences with violence may influence group-level processes of socialization. Violence may be so inculcated within socialization processes that groups of families within a given nation may not be aware of engaging in violence when socializing their children. Such obscure socialization processes occurring across many different families within the same nation may reinforce a context in which violence, in general, is supported. Violent socialization processes then become part of a contextual effect.

In this regard, the present study expands upon knowledge from previously published studies by exploring international comparisons in violent socialization processes and the association with criminal behavior. The present study begins to expand upon the criminogenic thesis, providing some evidence that violence occurs through multiple dimensions of the life circumstances within any given nation, yet these multiple dimensions may be interrelated in such a way that a context of norms of violence may be present in some nations. However, the results cannot speak to whether or not aggregates of the citizenry within some nations are more prone towards values and beliefs supporting violence. Since there appears to be few published international studies that examine the context in which violence may be a normative experience within some nations, particularly surrounding the use of physical discipline (Zolotor & Puzia, 2010), the present study provides a reference point for future research that builds upon this norms of violence thesis. Further research is necessary to explore why a context of

violence exists in some nations and to explain how norms of violence may occur within these nations.

Violent socialization processes and self-control theory

Self-control theory fails to account for contextual effects. The results show that violent socialization processes vary nation to nation, and this variation can explain a substantive proportion of the “explainable variance” in criminal behavior. Self-control theory might explain this finding away as a flawed methodology, because definitions in crime vary nation to nation. Yet, the definition of criminal behavior is consistent with Gottfredson and Hirschi’s (1990) ‘classical’ definition of crime: force and fraud.

Given the argument that the discipline of criminology has failed to construct universal explanations for the causes of crime across different nations (Johnson & Barak-Glantz, 1983), this finding was expected. So while Gottfredson and Hirschi essentially argue in their ‘general’ theory of crime (1990: 174-175) that contextual effects would *not* be an important explanation of crime; but this study demonstrates that, at least among this sample of 32 nations, criminal behavior *does* vary as a function of violent socialization processes and there is a contextual effect of violent socialization processes. This can be interpreted to mean that the significant variation in the effects of violent socialization across different nations do significantly predict differences in national-levels of criminal behavior. This is important to note because there is consistency across the 32 nations for the definitions of force and fraud, as outlined in the methods section (see chapter 3).

Social control and criminal behavior across different nations

With such consistency in conceptualization of the dependent variable, the focus is no longer on attempting to clearly define crime as an outcome, as Gottfredson and Hirschi argue is the main problem in cross-national criminology. Rather the focus can be on examining a potential correlate of criminal behavior: the varying effects of violent socialization within each nation do significantly predict criminal behavior. And more than half of the total “explainable” variance in criminal behavior between the 32 different nations can be attributed to violent socialization as a national context effect alone.⁹

These findings are particularly important because the present study is one of the first to demonstrate that Gottfredson and Hirschi’s stability thesis does not hold weight across different nations, as no other international studies were located that specifically examine the effects of any socialization process as a contextual effect. Instead, variation in socialization processes, particularly violent socialization processes, across different nations may be an important correlate of criminal behavior. But because this is an exploratory study using a convenience sample of college students, the results should be interpreted cautiously. Future studies should use a more representative sample to examine the effects of violent socialization as a contextual effect on criminal behavior. The present study can, at least, provide a beginning point towards understanding the degree to which socialization processes may serve as control over criminal behavior.

⁹ The pseudo-R² for between nations in Model 1, the means as outcome model which tests the effects of the level-2 variable violent socialization as a national context effect only, is 28.1 compared to the pseudo-R² for between nations in the final model, Model 10, is 49.6. This is a difference of 21.5

And more importantly, the present study can help to move forward violence-based research seeking to examine potential consequences of socially approved violence within socialization processes that may become part of the context in which youth are socialized.

CHAPTER VI

IMPLICATIONS OF VIOLENT FAMILIAL SOCIALIZATION PROCESSES ON SOCIAL CONTROL

The findings from the present study, as outlined in chapters 5 and 6, offer a preliminary understanding of the influence of ineffective familial socialization processes on criminal behavior. More specifically, these findings present the opportunity to better understand the parental socialization thesis of the revised self-control theory by showing that the combination of both attachments and self-control are important for preventing criminal behavior across different nations. The findings further present the opportunity to understand the effect of ineffective familial socialization processes, in terms of violent familial socialization processes, on criminal behavior are not constant across different nations.

Social control through familial socialization processes

As discussed throughout the present study, the family is expected to regulate and control youth behavior (Bui, 2008). Self-control theory, both the original and revised, seems to argue that the family is instrumental for properly socializing youth in order to prevent criminal behavior. Such control often occurs through familial socialization processes, by conveying societal norms (*cf.* Gottfredson, 2005; Hirschi, 1969; Hirschi,

Oetting, 1999). Specifically, Gottfredson and Hirschi seem to focus their explanation for the prevention of criminal behavior exclusively via the parental socialization thesis (e.g., Beaver, 2011; Beaver, Ferguson & Lynn-Whaley, 2010; Beaver, Wright, & Delisi, 2007; Dodson, 2009; Gibbs, Giever, & Martin, 1998; Hay, 2001), in that “ineffective child-rearing” (Gottfredson & Hirschi, 1990: 97) is the main reason youth engage in criminal behavior. In other words, youth fail to develop self-control in the presence of ineffective child-rearing.

Attachment

The findings of this study support the need to ensure strong integration of youth within their families. The present study found that stronger attachments within the family were associated with significantly less self-reported criminal behavior. These findings are consistent with the current research. Since trust tends to be the cornerstone of family relations (Giddens, 1991), the role of attachments within the family may serve as collective efficacy (Mazerolle, Wickes, & McBroom, 2010) to strengthen control over youth behavior which includes their criminal behavior. But when attachments are weak in the family, youth may be more likely to engage in criminal behavior (Nurco, 1999). Familial socialization processes may only be truly ineffective when attachments within the family are weak (*cf.* Hirschi, 1969; Hirschi, 2004; Oetting; 1999).

Self-control

In modern society where alienation is more prevalent (Reckless, 1967), such that external social control may have less influence over controlling youth behavior due to

detachments from the family (Giddens, 1991), individual internal regulation is important when considering the prevention of criminal behavior. Current criminological research empirically supports the theoretical argument that self-control prevents criminal behavior (Piquero, Jennings, & Farrington, 2010). The present study extends this argument by examining the degree to which both attachments within the family and individual self-control may prevent criminal behavior (i.e., the revised self-control theory). Again, the findings indicate that higher levels of individual self-control are associated with significantly less self-reported criminal behavior among the youth in the sample.

The revised self-control theory and criminal behavior

The present study, as well as previously published studies (e.g., Beaver, 2011; Morris, Gerber & Menard, 2011; Piquero et al., 2001; Schoepfer & Piquero, 2006), support the argument that attachments within the family and the family instilling individual self-control are important aspects of familial socialization processes that control criminal behavior. The present study supports this argument, in that attachments and self-control seem to be effective in preventing criminal behavior even when parents' socialization processes are dysfunctional. Consistent with the theoretical framework of the revised self-control theory, attachments within the family continued to be associated with significantly less self-reported criminal behavior scores among the youth in this sample, while low individual self-control continued to be associated with significantly more self-reported criminal behavior scores, even when accounting for the effect of violent familial socialization processes. Yet, violent familial socialization processes still

were significantly associated with youth's criminal behavior. Given this result, Gottfredson and Hirschi's parental socialization thesis may need to be further re-conceptualized to specifically explicate *ineffective* socialization processes.

Violent socialization within the family

One of the goals of this study was to explore the extent to which violent familial socialization processes may be associated with criminal behavior. Violent familial socialization processes were hypothesized as a risk factor for criminal behavior, and therefore would not prevent criminal behavior. In other words, violent familial socialization processes would be associated with *more* self-reported criminal behavior. The results of this exploratory study mostly supported this hypothesis: violent familial socialization processes were associated with significantly more self-reported criminal behavior among the individual youth in most nations from the IDVS.

Given these findings, violent familial socialization processes may not prevent criminal behaviors in some nations. If violence is part of the methods parents use to control youth behavior, then not all socialization processes may work equally to control youth behavior. Violent socialization within the family, however justified, may instead have the unintended effect of contributing to increased violent behavior. Perhaps the relationship between familial socialization processes and criminal behavior is more complex, and involves societal influence above and beyond individual families.

Violent familial socialization processes: Social control or social learning?

Oetting's (1998) primary socialization theory would seem to argue that if youth are socialized via a process of violence, the norms expressed within the family would most likely induce criminal behavior during late adolescence and emerging adulthood. This is an important consideration because the family tends to be the origin of socialization processes (Kendall, 2010), and the influence of violent socialization processes early in life may be sustaining (see e.g., Maughan & Gardner, 2010). Given that the present study found that in some nations violent familial socialization processes had no effect on individual youth's criminal behavior, indicated in the OLS regression analysis, this may be the result of variation in individual familial behaviors. Individual differences in criminal behavior have been attributed to variation in the degree to which relationships between parents and youth are positive and functional (Maughan & Gardner, 2010). For example, some families might engage one dimension of violent familial socialization processes, such as violent discipline, which could be viewed as a functional aspect of familial socialization processes but no other dimensions of violent familial socialization processes (e.g., violent communication). Because the present study examined a typology of violent familial socialization processes, future studies could compare the effects of each type of violent familial socialization on criminal behavior, particularly given that there appears to be no published research that examines the effect of violent communication within the family on criminal behavior.

A reasonable argument could be made that the items measuring violent familial socialization processes may actually be measuring concepts associated with social

learning theories. For example, many experts in the field of family violence support the idea that ‘violence begets violence’ (Widom, 1989) such that adults using violence may inadvertently be teaching youth that violence is an acceptable method to resolve conflict (*cf.* Straus & Donnelly, 1994). While the present study was built on the theoretical framework of the revised self-control theory, the results may actually be reflective of a combination of social control and social learning theories. The ‘circumstances of life’ involve both teaching youth behavioral expectations and control over unacceptable youth behavior.

The findings from the present study indicate that overall the criminal behavior of respondents’ peers is significantly associated with the respondents’ criminal behavior. And the effects of violent socialization, both within individual families and at the national-level, do not ‘wash out’ when *peers* is included in the model (i.e., the coefficient on violent socialization does not reduce to non-significance). However, the proportion of variance for criminal behavior explained by including *peers* in the model does not substantially increase in any of the analyses. Specifically, when *peers* was included as a control variable in model 6 of the OLS regression models (see Table 7), an additional 0.4% of the variance in criminal behavior could be explained over model 5, which did not include *peers* in the model. Then in model 7 of the MLM regression models (see Table 10), *peers* offered no additional explanation in the proportion of variance in criminal behavior between different nations when included in the model. And the proportion of variance in criminal behavior that can be explained within each nation when *peers* was included as a control variable increased by only 0.3% over model 6 (when *peers* was not

included in the model). If *peers* was an important control variable for explaining differences in criminal behavior, at least among this sample, the proportion of variance explained should increase more than fractional percentages. Theoretically, social learning could conceptually contribute to the effects of violent socialization on criminal behavior, given the argument outlined previously that the measures of violent socialization in the present study might actually embody social learning concepts more so than social control (e.g., violent communication could be argued as a form of teaching youth to be violent). Yet, given the small proportion of variance explained by including *peers* in the regression models, the present study does not statistically support this argument.

While some social control theorists may argue that the fundamental motivational arguments of social learning and social control theories cannot be aligned, due to the opposing and incompatible arguments that youth “learn” to have criminal behavior versus the need to “control” youth’s natural tendency towards criminal behavior, perhaps it is time to move past the debilitating debate of which criminological theory is more important. Criminologists should begin to examine a more nuanced theory that incorporates both social control theories to explain the preventative effects of socialization during children’s formative years and social learning theories to explain the possibility of risk factors associated with criminal behavior during adolescence and emerging adulthood if the family does not maintain strong attachments with youth. At the same time, criminological theories need to incorporate an exploration of the context in which both socialization and learning may prevent criminal behavior.

Violent socialization as a norm of violence

Another goal of the present study was to explore if criminal behavior across 32 different nations varied as a function of violent socialization processes, within the context of national norms supporting violence. In other words, the present study examined the degree to which violent socialization processes within individual families varied across nations as part of the context in which violence may be part of the norms within that nation, and this variation was associated with differences in criminal behavior for the youth living in those nations. The results of this exploratory study mostly supported the hypotheses: criminal behavior significantly varies as a function of violent socialization processes.

The context of aggregate socialization processes

It would appear that the circumstance of life within any given nation should vary. This variance may include a context in which violence may be more common within some nations. By extension, based on the results of the MLM regression analysis, the extent to which violence is acceptable within each nation seems to vary. When aggregates of families across a nation expose youth to socialization processes involving violence, a standard for socializing youth that involves violence may become socially acceptable. According to a summary report by several experts within the United States, “cultural/ethnic practices and beliefs are known to have an immense effect on what is considered as the norm” (Analytical Sciences, 2002: 10). Thus, youth socialization may

occur through informal mechanisms in which violence has become a norm to control their behavior, and these norms vary nation to nation. While the current literature indicates that socialization processes, in general, vary across different nations, the present study seems to be one of the first to show variation in violent familial socialization processes across different nations in predicting criminal behavior. Specifically, as illustrated in Figure 5, while the context of violent socialization within a nation tends to be associated with more criminal behavior among the youth in that nation, the family seems to offer some mitigation from those effects of violence. The present study shows that youth's criminal behavior tends to be less when they are raised in families that do not use or use very little violent socialization processes. Thus, even when social forces within a nation favor violent socialization processes (e.g., physical discipline) the methods of socialization used within individual families may offer some degree of protection from the effects of violence within the nation.

Contextual effect of living within a specific nation

The present study can demonstrate the presence of a contextual effect within some nations, at least tentatively. The present study found that, on average, violent socialization processes are associated with significantly more criminal behavior. But this association only occurs within some nations. Drawing from the current literature exploring both socialization processes and the individual dimensions of violent socialization processes, the findings from the present study could indicate that patterns of violence used within a nation across multiple different families could be an accepted

method in which to control youth behavior. Within nations, there are systems of networks, via families, friends, neighbors and other informal associations, that influence and shape socialization processes (Kasarda & Janowitz, 1974). In this sense, socialization may occur with the context of the norms of the nation. The norms of that nation may be favorable for violent control over youth behavior.

Norms of violence

Within some nations, violence may not be considered deviant behavior. Thus, when socialization processes involve violence, aggregates of families within the same nation may be conforming to the norms of that nation (Nurco, 1999). Given that the findings indicate that violent familial socialization processes are associated with more criminal behavior within only some of the nations in the present study, the circumstances of life in some nations may be that violence is a normative experience. Nations that support methods of violent social control or violent means for resolving conflict could develop a normative standard favoring violent familial socialization processes and the members of that nation embrace violence as a norm. Violent familial socialization processes then become part of the structural standards unique to a specific nation and families conform to such societal standards when socializing youth. As Durkheim noted, “society surpasses us, it obliges us to surpass ourselves” (1977[1914]: 163). In other words, violent familial socialization processes may be the reproduction of social forces beyond individual families, and therefore behavior within individual families may be influenced by norms unique to a nation.

Current research indicates that structural factors do influence different types of criminal behavior (DeGue, DiLillo & Scalora, 2010). There is also research indicating that there are structural patterns across nations in family violence (Eriksson, 2010). However, there seems to be a lack of research that specifically explores the effects of violent socialization processes on criminal behavior across different nations. The results from the present study begin to offer some preliminary evidence to support this argument, in that violent socialization processes are significantly associated with more criminal behavior in some nations but not in other nations.

However, given the limits of quantitative research for explaining such social phenomenon, the present study cannot offer the specific reasons that violent familial socialization processes may vary nation to nation. Explanations for norms of violence at this time are hypothetical. Future research is necessary to specifically examine what might contribute to a context effect of violent socialization processes at the national level and specific reasons for violent socialization processes to vary nation to nation.

Summary

Recommendations stemming from a government sponsored workshop on youth exposed to violence include exploring the context in which children may be exposed to violence, including the relationship between community violence and child victimization, and other contextual factors (Analytical Sciences, 2002). While the present study cannot fully explain why children may be exposed to violence, the present study provides preliminary data confirming that there is the possibility of violence being a normative

experience within some nations. Specifically, the present study offers some preliminary evidence that proximity to different manifestations of violence, such as laws supporting corporal punishment and high violent crime rates, may be associated with the use of violent socialization processes to control youth behavior. Given the lack of research in this area of comparative criminology, the present study offers a reference point for further global level research examining the issue of norms of violence in more depth.

Social control during late adolescence and emerging adulthood

As stated previously, the results from the present study seem to indicate that more than Gottfredson and Hirschi's self-control theory is needed as a theoretical explanation for the association between violent familial socialization processes and criminal behavior during late adolescence and emerging adulthood. Familial socialization processes, particularly familial socialization processes embedded in violence, comprise more than just discipline and attachments. While some criminological research tends to reject the influence of the family during late adolescence and emerging adulthood (Johnson et al., 2011), the current literature outlined in this dissertation project has demonstrated that the ability of familial socialization processes to control youth behavior extends well into emerging adulthood.

Late adolescence and emerging adulthood: Self-control or age graded theory?

A more complex theoretical explanation of criminal behavior is needed to fully explicate the findings from the present study. Self-control theory, in the original version or the revised version, does not extend the parental socialization thesis beyond approximately age 10 years. Therefore, the theory does not account for the processes of familial socialization that occur during adolescence and extend through emerging adulthood. While age graded theory (*cf.* Sampson & Laub) is another criminology theory that seems to offer some explanation for the correlates for criminal behavior during late adolescence and emerging adulthood, this theory is quickly becoming outdated in modern society. The traditional roles of marriage and entering the workforce are no longer the norm. The concept of 'youth' is now extended up to age 25 years, in what Arnett (2004) refers to as emerging adulthood rather than full adulthood, and youth tend to face challenges in the development of their identity during this transition into full adulthood (*cf.* Erikson, 1950). These traditional roles espoused by age graded theory that bind youth to a more conventional lifestyle, and hence avoidance of criminal behavior, no longer seem to hold true in modern society. Yet, as outlined in the present study, the effects of familial socialization processes on controlling youth behavior still seem to endure, and these effects can positively influence criminal behavior if familial socialization processes are embedded in violence.

Self-control during late adolescence and emerging adulthood

At the same time, the findings in the present study might also be indicative of the natural desistance from crime as youth age. Specifically, most youthful offenders do not move on adult criminality (Sampson & Laub, 1993). It may be possible that while violent familial socialization processes pose a risk factor for the development of coping skills and other psychological issues over the life course (Hetzel-Riggin & Meads, 2011), the effects of violent familial socialization processes on criminal behavior are less sustaining. Stronger attachments within the family and higher levels of individual self-control may serve as protective factors that reduce the likelihood of criminal behavior even when youth experience violent familial socialization processes. The findings from this present study show significant differences in criminal behavior by age initially; but when controlling for youth's self-reported prior criminal behavior, there are no longer significant differences in criminal behavior by age. As such, it would appear that, once accounting for each youth's previous criminal behavior, age did not factor into the degree to which youth in the present study engaged in criminal behavior. Overall, this finding was expected. The present study included only emerging adults (i.e., youth ages 18 to 25), and, as discussed earlier, this is the age in which youth tend to desist from criminal behavior. These findings seem to indicate that protective factors, such as strong family attachments and high individual self-control, offer a degree of prevention some youth and in some nations, at least among the youth and nations within the IDVS.

Limitations

There are several limitations within the present study worth discussing. Studies of crime tend to be more retrospective than prospective. Respondents are asked to look back at some specific period of time to report about their prior criminal behaviors (Jolliffe et al., 2003). Retrospective studies pose challenges when attempting to measure details of criminal behavior, including frequency of minor crimes (Kazemian & Farrington, 2005) such as property crime. Memory recall of the exact frequency of criminal behavior may be inaccurate (Singleton & Straits, 1984). However, the IDVS did not use the frequency of criminal behavior as a measure. Rather, criminal behavior was measured through Likert-style response scales that capture the degree to which each respondent agreed that they had engaged in criminal behavior, including property crimes. Capturing the number of times a particular crime is committed retrospectively may be inaccurate (Maxfield & Babbie, 2010). The criminal behavior measure within the IDVS provides an estimate of the degree to which youth engaged in criminal behavior, not frequency in which criminal behavior occurred. However, it is not known how much crime each youth engaged in, and by extension the frequency of aggregate criminal behavior in each nation.

Despite the general limitation of using retrospective studies, research on violence has shown that respondents overall tend to answer accurately in retrospect (e.g., see Brewin, Andrews, & Gotlib, 1993; Kazemian & Farrington, 2005). Therefore, measures related to violence, such as violent familial socialization processes, should not pose as

much difficulty with memory bias as measures of criminal behavior. Regardless, violent familial socialization processes was also measured through Likert-style response scales that capture the degree to which each respondent agreed that they had experienced violent familial socialization processes. This measure also provides an estimate rather than providing a concrete number representing the frequency in which youth had criminal behavior.

Violent socialization processes may be an imperfect measure, not being a representative aggregate measure of the nations in this present study. As an exploratory study, this proxy measure for aggregates of families offers a preliminary operationalization of violent socialization in the aggregate for international research to better understand effective and ineffective methods of control over youth behavior across different nations. In addition, the present study found that among nations with two different laws favoring violence, physical punishment of youth and use of the death penalty, tended to have significantly higher levels of violent socialization at the national level. And the violent crime rate among the 32 different nations of the IDVS was significantly positively associated with violent socialization at the national level. While the violent socialization measure was based on aggregates of convenience samples within each nation, these independent indicators of violence were significantly associated with national levels of violent socialization. As such, the use of a convenience sample to measure the concept of violence socialization may not be invalid. Instead, the present study indicates the possibility of construct validity by comparing these laws and the violent crime rate to *violent socialization*. But given that there appears to be a general

lack of national level measures on violence in other domains, including national-level attitudes, values, and behaviors, the use of aggregates of families within the present study as a proxy measure may be the only extra-familial measure of violent socialization processes currently available. Additional research is recommended, with representative samples of families within different nations, in order to generalize results at the national level.

Using samples of college students can be a limitation for criminological research. College students could possibly be part of a privileged sector of society (Cabrera & La Nasa, 2001; Kao & Tienda, 1998), particularly those youth who attend private post-secondary institutions. But criminal behavior is not exclusive to one segment of the population (Schmallegger & Bartollas, 2008). Using college students to examine criminal behavior can be important in criminological research moving forward, including the growing research on emerging adults. As discussed throughout this dissertation project, the life circumstances facing college students may be unique to other samples of the population. The present study offers additional data for research on criminal behavior among emerging adults.

The IDVS data is not representative of either individual college students or the nations in which these students are located. The IDVS employed convenience sampling within all the institutions across the 32 different nations. Despite this limitation, self-control theory was conceptualized as a general theory of crime (Gottfredson & Hirschi, 1990). Therefore, the key components of self-control theory should be applicable to any

population, including a convenience sample of college students sampled from different 32 nations.

Statistical conclusion validity may pose an issue for some of the findings in the present study. There are small samples of college students within some of the nations (e.g., there are only 99 cases in Iran). While the IDVS may be unique, in that there are not many studies that have such an extensive international sample, more respondents may be needed from many of the IDVS nations in order to reliably detect differences in the effects of violent familial socialization processes on individual self-reported criminal behavior (i.e., OLS regression by nation).

And finally, the present study does not account for parental reactions to youth behavior. Youth's behavior can contribute to the use of violent family socialization processes (Nurco, 1999). The present study does not examine the effects of youth behavior on parental behavior. This information was not available within the IDVS dataset. Further, the revised self-control theory does not take into account the bi-directionality of parent-child relationships within the context of child development. Gottfredson and Hirschi seem to take the position that the family shapes youth's characteristics, specifically youth's self-control, rather than the influence of youth's behavior on parental behavior. The theory does not seem to address the argument that youth may be active participants in their own socialization processes. Specifically, the characteristics of youth may influence the degree to which attachments form within the family (Oetting, 1999). Future research on familial socialization processes may need to

consider this argument, and specifically test for the possibility of reciprocal relationships between parental behavior and youth behavior.

Although there are a number of limitations within the present study, this exploratory study offers an initial reference point for comparative research on violent socialization processes across different nations. The data presents a preliminary understanding of methods used by individual families that may be ineffective at controlling youth behavior. At the same time, the study initiates a discussion of norms occurring within a context specific to nations. Specifically, national level norms of violence may mutually influence other areas of violence within the nation, and these norms become the circumstance of life for youth living in that nation. Future studies should extend the findings of the present study by examining different indicators of norms within a nation that might be associated with violence, such as the presence of military within a nation and the current state of war or rebellion, the responses of the military towards perceived violence, the effects of the media and pop culture towards violent attitudes and behavior, variation in criminal sanctions beyond the use of the death penalty and other methods of social control over youth behavior, and the availability of social welfare services.

Social control and criminal behavior across different nations

The findings show that violent socialization processes at both the individual level (i.e., families) and the national level are significantly associated with more criminal

behavior within and across nations. Most nations seem yet to determine what constitutes ineffective familial socialization processes, particularly surrounding the use of physical discipline (Knowles, 1996). Gottfredson and Hirschi fail to explicitly discuss variation in the parental socialization thesis across different nations. As such, the theory cannot account for why violent familial socialization processes, occurring within a context of norms of violence, would be associated with increased criminal behavior. As such, criminology may have to sacrifice the desire for an all-encompassing general theory of crime to produce a more comprehensive theory that recognizes the combination of the complexity of familial socialization processes and the influences of norms on socialization processes effecting criminal behavior. Such a comprehensive theory may need to be an integrative theory that blends the core theoretical premises of two or more major criminological theories.

One way of integrating two different criminological theories is to conceive of macro-level characteristics as influencing the attitudes, relationships, and behavior of individuals. For example, when violence is reinforced through societal norms, the effects of these norms may be associated with both group-level socialization processes (i.e., socialization processes occurring across different nations) and individual-level familial socialization processes. However, more research is needed to support the contention that group-level processes influence individual-level processes, and the research would need to be conducted in such a manner that will not produce ecological fallacy.

The overall results of the present study should be interpreted as the need for varying approaches towards the control of youth behavior, and specifically criminal

behavior. International crime prevention must be nation specific. Prevention techniques need to consider the unique characteristics of each nation, such as cultural traditions or structural nuances, that might contribute to overall violence and other criminal behavior within any nation. But, further research is necessary to explore norms within any given nation at both the macro-level and micro-level in order to ensure prevention techniques are culturally sensitive for that nation. While this dissertation may not completely move the field of criminology and family violence forward in the study of violence socialization processes across different nations, given the limitations of the study, the results of the present study provide a starting point for directing future research in this field.

Familial socialization processes as social control

Social control theories seem to take the position that effective socialization is a determinate factor in preventing criminal behavior. Because many social control theorists (e.g., Gottfredson and Hirschi, 1990; Hirschi, 1969, 2004; Reckless, 1967) argue that effective familial socialization processes occur before pre-adolescence (about the age of 10-12 years), prevention of criminal behavior should begin during the early stages of childhood. As such, social control theorists would seem to argue that the criminal justice system is ineffective in preventing criminal behavior because most criminal sanctions are aimed towards youth ages 15 years or older. The results of this study support this premise: punishment through the criminal justice system would not effectively control all

criminal behavior among youth because much family socialization occurs before youth are aware of social sanctions and legal punishments that serve to deter criminal behavior. And official responses to criminal behavior tend to be reactive and punitive towards individual youth, rather than focusing on the core of the problem and offering solutions (Bullock, 2011).

These official responses are not generally aimed at supporting or strengthening families. Yet, the results of the present study indicate the importance of strengthening the family in order to prevent criminal behavior. For example, it is the strength of attachments within the family which determines the degree to which youth are inculcated into the norms of society (Whitbeck, 1999). Youth exposed to deviant socialization processes, such as violent familial socialization processes, are more likely to act out with deviant behavior (Oetting, 1999). In the presence of limited funding and resources available, prevention efforts should be concentrated at individual families rather than focus on structural issues contributing to violent socialization. The results from the present study indicate that the degree to which violent socialization occurs within individual families may mitigate the effects of overall violent socialization at the national level. As such, efforts aimed at preventing violence within individual families may not only reduce criminal behavior but, over time, may also mutually influence violent socialization occurring at the national level. A future longitudinal study would be ideal for capturing such effects within any given nation.

Under self-control theory, one powerful crime control intervention seems to be primary intervention within families. Research has supported a variety of programs in

preventing youth criminal behavior. For example, Piquero, Jennings, and Farrington (2010) found that programs geared towards improving youth's ability to self-regulate their behavior were effective at reducing criminal behavior among these youth. And early intervention programs that have focused on parental management have demonstrated the ability to train parents in discipline techniques that effectively prevent criminal behavior (Przybylski, 2008; Welsh & Farrington, 2007a). Programs focused on helping youth become skilled in pro-social behavior can also prevent criminal behavior (Hawkins et al., 2007; Przybylski, 2008; Welsh & Farrington, 2007b), as well as therapeutic intervention programs targets at high risk youth (Lipsey, 2009) that focus on strengthening social bonds (Bouman, De Ruiter, & Schene, 2010). Early intervention programs that specifically address youth behavior, with a focus on more rehabilitative approaches to the prevention of crime (Cullen, Vose, Jonson, & Unnever, 2007), could be established across different nations if these programs take into consideration the unique norms within the nation that may influence socialization processes both within individual families and at the societal level. All in all, current approaches to crime prevention need to address the *fundamental* issues influencing involvement in criminal behavior: ineffective familial socialization processes that contribute to youth engaging in criminal behavior. *Proactive* measures need to be taken to that ensure families, in any nation, have the support they need to exert control over youth behavior and prevent criminal behavior.

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APPENDIX A
INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

University of New Hampshire

Research Integrity Services, Office of Sponsored Research
Service Building, 51 College Road, Durham, NH 03824-3585
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04-Mar-2010

Delaney Lutz, Aimee "May"
Sociology, Horton Hall Rm 426
71 Bunker Hill Road
New Boston, NH 03070

IRB #: 4802

Study: An Empirical Analysis of Containment Theory using Multi-Level Modeling

Approval Date: 02-Mar-2010

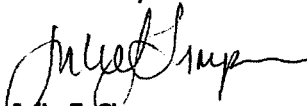
The Institutional Review Board for the Protection of Human Subjects in Research (IRB) has reviewed and approved the protocol for your study as Exempt as described in Title 45, Code of Federal Regulations (CFR), Part 46, Subsection 101(b). Approval is granted to conduct your study as described in your protocol.

Researchers who conduct studies involving human subjects have responsibilities as outlined in the attached document, *Responsibilities of Directors of Research Studies Involving Human Subjects*. (This document is also available at <http://www.unh.edu/osr/compliance/irb.html>.) Please read this document carefully before commencing your work involving human subjects.

Upon completion of your study, please complete the enclosed Exempt Study Final Report form and return it to this office along with a report of your findings.

If you have questions or concerns about your study or this approval, please feel free to contact me at 603-862-2003 or Julie.simpson@unh.edu. Please refer to the IRB # above in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB,



Julie F. Simpson
Manager

cc: File
Rebellón, Cesar

APPENDIX B
CORRELATION MATRIXES

Table 12.
Correlations for items from the Personal and Relationship Profile scales (n=15,652)

	1	2	3	4	5
<u>late onset, criminal history scale</u>					
physically attacked	-				
stolen something more than \$50	.29**	-			
hit/ threatened non-family	.47**	0.23**	-		
stolen money	.26**	0.41**	0.25**	-	
<u>family, violent socialization scale</u>					
Hit a lot by parent before age 12	-				
Hit a lot by parent as teen	.48**	-			
Saw family push//throw someone	.26**	0.24**	-		
Saw family kick/punch partner	.25**	0.34**	0.24**	-	
family advise hit back	.21**	0.20**	0.21**	0.16**	-
<u>aggregate, violent socialization scale</u>					
Hit a lot by parent before age 12	-				
Hit a lot by parent as teen	.61**	-			
Saw family push//throw someone	.49**	0.44*	-		
Saw family kick/punch partner	.42**	0.67**	0.32*	-	
family advise hit back	.29*	0.17*	0.19*	0.19*	-
<u>positive parenting scale</u>					
Parents helped with problems	-				
Parents comforted when upset	.34**	-			
Parents helped me do my best	.37**	0.38**	-		
Parents cared if trouble in school	.34**	0.31**	0.42**	-	
<u>self-control scale</u>					
do dangerous things (R)	-				
have trouble following rules (R)	.34**	-			
often hurt by things I do (R)	.30**	0.32**	-		
have goals in life I try to reach	.06**	0.19**	0.18**	-	
<u>early onset, criminal history scale</u>					
physically attacked	-				
stolen something more than \$50	.25**	-			
hit/ threatened non-family	.41**	0.28**	-		
stolen money	.31**	0.37**	0.32**	-	

** p ≤ 0.01

* p ≤ 0.05

~ p ≤ 0.10

APPENDIX C

Table 14.
Equations for building the multilevel models

unconditional model

Level 1: within nation

$$crime = \beta_{0j} + r_{ij}$$

where $r \sim N(0, \sigma^2)$

Level 2: between nation

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

where $u_{0j} \sim N(0, T_{00})$

means as outcome model

Level 1: within nation

$$crime_{ij} = \beta_{0j} + r_{ij}$$

where $r \sim N(0, \sigma^2)$

Level 2: between nation

$$\beta_{0j} = \gamma_{00} + \gamma_{01} violent_{socj} + u_{0j}$$

where $u_{0j} \sim N(0, T_{00})$

random coefficient model

Level 1: within nation

$$crime_{ij} = [\beta_{0j} + \beta_{1j} violent_{family} + \beta_{2j} attachment + \beta_{3j} self-control] + r_{ij}$$

where $r \sim N(0, \sigma^2)$

Level 2: between nation

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

where
$$\begin{bmatrix} u_{0j} \\ u_{1j} \end{bmatrix} \sim N \left[\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} T_{00} & T_{01} \\ T_{10} & T_{11} \end{bmatrix} \right]$$

APPENDIX D

Table 15.

General linear hypothesis tests for comparing models

models 2a and 0

$$H_0: Y_{10} = T_{11} = T_{01} = 0$$

$$\text{Model 0: } -2 \text{ Log Likelihood} = 56065.262$$

$$\text{Model 2a: } -2 \text{ Log Likelihood} = 53567.660$$

$$\text{Change in } -2 \text{ Log Likelihood} = 2497.602$$

$$\text{Change in df} = 3$$

$$X^2 (\text{df}=3; \alpha = .05) = 7.82$$

REJECT NULL

models 2b and 2a

$$H_0: Y_{10} = Y_{20} = T_{11} = T_{01} = 0$$

$$\text{Model 2a: } -2 \text{ Log Likelihood} = 53567.660$$

$$\text{Model 2b: } -2 \text{ Log Likelihood} = 53426.145$$

$$\text{Change in } -2 \text{ Log Likelihood} = 141.515$$

$$\text{Change in df} = 1$$

$$X^2 (\text{df}=1; \alpha = .05) = 3.84$$

REJECT NULL

models 2c and 2b

$$H_0: Y_{10} = Y_{20} = T_{11} = T_{01} = 0$$

$$\text{Model 2b: } -2 \text{ Log Likelihood} = 53426.145$$

$$\text{Model 2c: } -2 \text{ Log Likelihood} = 51939.073$$

$$\text{Change in } -2 \text{ Log Likelihood} = 1487.072$$

$$\text{Change in df} = 0$$

$$X^2 (\text{df}=0; \alpha = .05) = 0$$

REJECT NULL

models 2d and 2c

$$H_0: Y_{10} = Y_{20} = Y_{30} = T_{11} = T_{01} = 0$$

$$\text{Model 2c: } -2 \text{ Log Likelihood} = 51939.073$$

$$\text{Model 2d: } -2 \text{ Log Likelihood} = 51931.945$$

$$\text{Change in } -2 \text{ Log Likelihood} = 7.128$$

$$\text{Change in df} = 1$$

$$X^2 (\text{df}=0; \alpha = .05) = 3.84$$

REJECT NULL

models 2e and 2d

$$H_0: Y_{10} = Y_{20} = Y_{30} = 0$$

$$\text{Model 2d: } -2 \text{ Log Likelihood} = 51931.945$$

$$\text{Model 2e: } -2 \text{ Log Likelihood} = 51961.092$$

$$\text{Change in } -2 \text{ Log Likelihood} = -29.147$$

$$\text{Change in df} = 2$$

$$X^2 (\text{df}=0; \alpha = .05) = 5.99$$

DO NOT REJECT NULL

APPENDIX E

Table 16.
Pseudo-R² statistic

<u>Model 1a</u>	
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 1a})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 3.766}{4.907} = 0.233$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 1a})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.184}{0.297} = 0.380$
<u>Model 2a</u>	
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 2a})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 4.025}{4.907} = 0.180$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 2a})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.207}{0.297} = 0.303$
<u>Model 2b</u>	
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 2b})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 3.979}{4.907} = 0.189$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 2b})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.227}{0.297} = 0.236$

Table 16. (Continued)
Pseudo-R² statistic

		<u>Model 2c</u>
Within nation:	Between nation:	
$\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 2c})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$	$\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 2c})}{\hat{\sigma}^2 0(\text{model 0})}$	
$\frac{4.907 - 3.535}{4.907} = 0.280$	$\frac{0.297 - 0.286}{0.297} = 0.037$	
		<u>Model 2d</u>
Within nation:	Between nation:	
$\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 2d})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$	$\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 2d})}{\hat{\sigma}^2 0(\text{model 0})}$	
$\frac{4.907 - 3.533}{4.907} = 0.280$	$\frac{0.297 - 0.291}{0.297} = 0.020$	
		<u>Model 2e</u>
Within nation:	Between nation:	
$\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 3})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$	$\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 3})}{\hat{\sigma}^2 0(\text{model 0})}$	
$\frac{4.907 - 3.544}{4.907} = 0.278$	$\frac{0.297 - 0.282}{0.297} = 0.050$	
		<u>Model 3</u>
Within nation:	Between nation:	
$\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 4})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$	$\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 4})}{\hat{\sigma}^2 0(\text{model 0})}$	
$\frac{4.907 - 3.346}{4.907} = 0.318$	$\frac{0.297 - 0.277}{0.297} = 0.067$	

Table 16. (Continued)
Pseudo-R² statistic

<u>Model 4</u>	
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 2e})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 3.355}{4.907} = 0.316$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 2e})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.310}{0.297} = 0 \text{ (-0.115)}$
<u>Model 5</u>	
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 6})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 3.180}{4.907} = 0.329$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 6})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.315}{0.297} = 0 \text{ (-0.133)}$
<u>Model 6</u>	
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 7})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 3.179}{4.907} = 0.352$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 7})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.304}{0.297} = 0 \text{ (-0.024)}$
<u>Model 7</u>	
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 8})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 3.163}{4.907} = 0.355$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 8})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.301}{0.297} = 0 \text{ (-0.013)}$

Table 16. (Continued)
Pseudo-R² statistic

		<u>Model 8</u>
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 9})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 2.330}{4.907} = 0.525$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 9})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.135}{0.297} = 0.545$	
		<u>Model 9</u>
<p>Within nation:</p> $\frac{\hat{\sigma}^2 \mathcal{E}(\text{model 0}) - \hat{\sigma}^2 \mathcal{E}(\text{model 10})}{\hat{\sigma}^2 \mathcal{E}(\text{model 0})}$ $\frac{4.907 - 2.327}{4.907} = 0.526$	<p>Between nation:</p> $\frac{\hat{\sigma}^2 0(\text{model 0}) - \hat{\sigma}^2 0(\text{model 10})}{\hat{\sigma}^2 0(\text{model 0})}$ $\frac{0.297 - 0.134}{0.297} = 0.549$	