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TESTING THE EFFECTS OF SOCIAL BOND FACTORS ON DELINQUENCY AND THE MODERATING EFFECTS BY GENDER AND RACE/ETHNICITY

Yurino Kawashima
yurino_kawashima@yahoo.co.jp

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by

Yurino Kawashima

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Dr. Darren Sherkat

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MAJOR PROFESSOR: Dr. Rachel B. Whaley

The present study examined the effects of social bond factors on delinquency. They were examined in the whole sample and various subgroups of adolescents based on their gender, race/ethnicity, and both gender and race/ethnicity, in order to see how social bond factors might be differently related to delinquency among these subgroups. The findings showed that while some variables, such as delinquent peers, peer attachment, and low school commitment, had significant effects among all subgroups, its strength differed by gender and race/ethnicity. The effects of other variables, such as parental support, family attachment, active and passive involvement, school attachment and commitment, varied across these subgroups. This implied that controlling gender and race/ethnicity in the processes of structuring and testing theoretical models might lead to misrepresenting the actual effects of these variables among subgroups of adolescents by masking or suppressing their effects.

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Yurino Kawashima

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CHAPTER 1

INTRODUCTION

Social bond theory (Hirschi 1969) explains that social bonds, --strong ties to a society-- keep individuals away from delinquent acts. Social bonds include attachment to conventional people, commitment to and involvement in conventional activities, and positive attitudes (beliefs) toward laws and rules. When individuals have these bonds, they do not engage in delinquency because they do not want make these people disappointed, they have strong focus on conventional activities and no time left to commit such acts, or do not think that committing such acts is right or reasonable. These social bonds are generated in families, schools, activities, and other institutions, and influence adolescent delinquency in various ways. While past research examined how social bond factors in various domains of life influence delinquency, only small numbers of studies looked at how these factors might be moderated by both gender and race/ethnicity. Gender and race/ethnicity were often controlled in models and were not a focal point of research in the past.

Thus, in the present study, by using nationally representative data of adolescents, I examined the utility of social bond theory by simultaneously looking at the effects of various social bond factors on delinquency (attachment, commitment, and involvement) in various social settings (family, school, and religion) for groups defined by gender, race/ethnicity, and their intersections. In the next section, I review literature related to social bond theory and gender- and racial/ethnic- differences. Subsequently, I explain the method use to examine social bond theory across gender and race/ethnicity. Third, I report the results of the analysis. Fourth, I discuss the findings, implications about the utility of social bond theory across gender and race/ethnicity, limitations of the present study, and future research suggestions.

BACKGROUND

Social bond theory explains that individuals commit delinquent acts when they lack strong social bonds to a society that keeps them away from delinquent acts. The social bonds include attachment to people (e.g., parents but not the delinquent ones), commitment to conventional activities (e.g., school or jobs), involvement in such activities (and thus no time left for such acts), and holding strong conventional beliefs (Hirschi 1969).

Social Bond from Family

According to social bond theory, adolescents would not commit delinquent acts if they have strong attachment to their parents and families because they do not want their parents and other family members disappointed by them. Parental attachment often predicted reduced delinquency (Worthen 20121; McCluskey and Tovar 2003), but not in other cases (Chapple, McQuillan, and Berdahl 2005; Agnew and Bresina 1997). This element of the social bond is also measured as attachment to family, and this was found to be related to lower substance use, and lower property and violent delinquency (Bui 2009; Kaufman 2005). Thus, findings on the effects of parent-child bond are mixed, and these effects of family social bonds are not uniformly shared by individual adolescents.

The effect of parental attachment on delinquency is different among males and females and each race/ethnicity. First, parental attachment is differently associated with delinquency between males and females. For example, Worthen (2011) found that, while both males and females had the same amount of parental attachment, it was related to lower delinquency only among males but not females. On the other hand, Chapple et al. (2005) found that parental attachment did not predict property and violent delinquency either males or females. Also, Diagle, Cullen, and Wright (2007) found that males had significantly higher maternal attachment

than females, but it had no effect on delinquency for either males or females. In addition to gender, the effects of parental attachment also differed by race. McCluskey and Tovar (2003) found that the amount of parental attachment differed by race; Whites and Latinos had higher parental attachment than Blacks. However, parental attachment predicted delinquency among Whites and Blacks but not Latinos. Further, the effects of parental attachment differed by race/ethnicity and gender. Parental attachment predicted delinquency only among white females and Black males, but not among White and Latino males and Black and Latino females (McCluskey and Tovar 2003). Among Mexican American adolescents, gender moderated the effect of maternal attachment; while girls reported higher maternal attachment, the effect was significant on delinquency only for males (Cota-Robles and Gamble 2006). Thus, the effects of parent-child were complicated by gender and race/ethnicity.

In addition to parental and family attachment, parental control over children's behaviors and spending time with family are also considered to generate social bonds which might keep adolescents away from delinquency. First, parental control (decisions made by parents on adolescents' activities) was related to lower delinquency (Demuth and Brown 2004). Similarly, monitoring (adolescents think their parents know their whereabouts after school and weekends, as well as their peers and peer activities) lowered delinquency (Griffin et al. 2000). The effect of monitoring varied by gender, too. The effect of monitoring was related to less drinking for males, but more drinking for females (Griffin et al. 2000). The effect of monitoring on drug use was stronger among females than males, especially if they had drug using peers (Svensson 2003). On the other hand, monitoring was also found to be unrelated to delinquency, too (Agnew and Bresina 1997). Second, family time reduced drinking, cigarette smoking, drug use, and delinquency (Barnes et al. 2007). In addition, the effect of time spent with family varied by

gender. Griffin et al. (2000) found eating dinner together lowered delinquency among females, but increased delinquency among males.

Family structure is also considered to influence social bonds because it seems to affects parenting. First, family structure itself was found to influence adolescent delinquency. Compared with "intact" families which consisted of two married biological parents and their children only, other non-intact family structures (e.g., families consisted of biological parents plus other kin, step families, or single parent families) were related to significantly higher delinquency (Apel and Kaukinen 2008; Wells and Rankin 1991). Also, larger household size predicted higher delinquency, probably because the quality or amount of parent-child bond decreases as the number of siblings increases (Demuth and Brown 2004). In addition, the presence of other adult(s) predicted lower delinquency because the additional adults probably generate more control and supervision per child (Demuth and Brown 2004). On the other hand, other studies found that family structure had no effects on general and violent delinquency, after controlling for other variables, such as SES or parental attachment (Demuth and Brown 2004; McNulty and Bellair 2003a; McNulty and Bellair 2003b; Kaufman 2005).

Other studies examine how the effect of family might vary based on gender and ethnicity and found family, gender, and/or race/ethnicity influence delinquency together. For example, compared with living in single parent families, living in two parent families predicted lower delinquency only among females but not among males (McCluskey and Tovar 2003). There were racial differences on the effect of family on delinquency, too. For example, non-intact family structure predicted non-serious delinquency only among blacks but not among whites and Hispanics (Leiber, Mack, and Featherstone 2009). Furthermore, the effect of family structure on delinquency also differed by gender and race/ethnicity. For example, compared to living in

single parent families, living in two parent families predicted lower delinquency only among white females and Latino males, but not among white males, Latino females, and black males and females (McCluskey and Tovar 2003).

There are other characteristics that could generate social bonds in families. The effect of family structure is often mediated by other factors. For example, a composite parental attachment factor, including direct and indirect supervision (time spent on weekends and knowing whereabouts), maternal and paternal communication (discuss problems), and getting along with parents, fully mediated the effect of family structure on delinquent behaviors (Kierkus and Douglas 2002). Also, the effect of family structure is moderated by other factors. Griffin et al. (2000) found that family structure had no effects on smoking, alcohol, aggression, and delinquency, but there was a significant interaction between family structures and eating dinner together; eating together lowered delinquency among single families, but increased delinquency among two-parent families. Doing housework or taking care of siblings and watching TV had no effects on substance use and delinquency, (Barnes et al. 2007), while doing nothing was related to increased delinquency (Wong 2005) and relaxing alone was related to higher drug use (Barnes et al. 2007). Further, the effects of family structure, parenting, and gender interacted, too. Unsupervised time alone at home was associated with less smoking for boys, while time alone at home was associated with more smoking for girls, especially if they are from two-parent families (Griffin et al. 2000). Thus, the effects of parental and family attachment, parental control, and family structure on delinquency were studied well, but how these effects might be different based on gender and race/ethnicity was still not well known.

Social Bond from Religion

Religious institutions might generate social bonds because adolescents might get attached to people (including parents) in the institutions, learn and obey their rules (beliefs), be committed to faith, and get involved in various religious activities. Religion is often conceptualized as attitudes toward religion (e.g., importance, or belief in God or Bible) and behaviors (e.g., religious attendance/participation), and it is often found to be related to lower crime in general (Baier and Wright 2001). The broad aspect of religion itself, assessed as a composite of these aspects, was found to be related to lowered delinquency, even after controlling family attachment and delinquent peers (Johnson et al. 2001). Assessed more specifically, religious attendance was related to lower drug use, while religiosity was related to lowered delinquency, alcohol use, and drug use (Brent, Pope, and Kelleher 2006). The effects of religiosity were moderated by gender, too; they were stronger for females than males (Brent, Pope, and Kelleher 2006). The type of religion seemed to matter, too, and evangelism was related to lower crime (Brent and Corwin 1997). However, a few studies report null findings. For example, by using small Canadian sample (N=578) among 5-12 grades, Wong (2005) found that the time used for religious activities had no effects on delinquency. The effect of religion was found to be fully mediated by other social bond factors in other study (Brent and Corwin 1997). In addition, the effect of religion varied based on family processes and family structure, too. For example, the coexistence of religion and parental affection was related to lower delinquency among those who committed delinquent acts in late adolescence, while religious participation was related to lowered delinquency among those in single parent families (Petts 2009). In these studies, gender and race/ethnicity were often controlled, and Latinos were often missed. Thus, although religion seems to be associated with lower delinquency, it is not clear if religion provides social bonds in the same way among different genders and races.

Social Bond from School

Social bonds are considered to be generated in schools because children are attached to their classmates, teachers, and schools, and committed to and involved in studying and school activities (e.g., clubs). They also learn rules and the importance of following them. Some studies found that school attachment was related to lower violent delinquency (Kaufman 2005). School attachment was related to lower delinquency and drug use, too (Kaufman 2005). On the other hand, school attachment was also found to have no effects on substance use, and property and violent delinquency (Bui 2009). In addition, there were gender differences. School attachment, commitment (attitudes toward doing schoolwork), and belief (attitude toward breaking rules) were all related to lower delinquency and drug use in the whole sample and also among males and females. But, the effects of commitment and belief were stronger among females than males (Payne 2009). On the other hand, while these three factors were related to lowered drug use among females, only commitment and belief were related among males (Payne 2009). School commitment (measured as educational or occupational aspirations and the importance of good grades) was related to lower violent delinquency (Bui 2009) but not to general delinquency (Felson and Staff 2006), property delinquency, and substance use (Bui 2009).

School commitment could be conceptualized by other factors, too. For example, spending time studying or doing homework was related to reduced tobacco and drug use and delinquency (Barnes et al. 2007; Wong 2005). GPA was also related to lower violent delinquency (McNulty and Bellair 2003a; McNulty and Bellair 2003b; Kaufman 2005; Agnew and Bresina 1997) and substance use (Whaley, Hayes-Smith, and Hayes-Smith Forthcoming), but not property and violent delinquency (Bui 2009). But other studies found that, while GPA was not related to lowered delinquency, academic effort was (evaluated by teachers about working hard in class,

doing homework, and being attentive in class) (Felson and Staff 2006; they discussed this effort as self-control). Similarly, school trouble (e.g., troubles paying attention in school, getting homework done, or getting along with teachers and classmates) was related to increased substance use and property and violent delinquency (Bui 2009). Also, how sex might moderate the effects of school bonds are still unclear. While Pain (2009) found similar effects of school commitment among both males and female, Whaley et al. (2012) found that GPA had a stronger effect on drinking and marijuana use among females than males. In addition, few studies seem to be done to examine the racial/ethnic differences on the effect of school social bonds.

Social Bond from Peers

Relationships with peers also generate social bonds because adolescents are attached, get committed and involved, and hold beliefs to keep enjoyable, good relationships in the peer groups. These social bonds are thought to be protective, if the peers are not delinquent. For example, Liu (2004) found association with peers who valued education was related to lower school delinquency (e.g., being late, skipping classes, breaking school rules, and school suspension) and tobacco use among both males and females. Other peer social bonds also had gender differences. Unlike Liu (2004), Agnew and Bresina (1997) found it was associated with lower delinquency only among females. Also, peer attachment reduced violence only among males but not females (Chapple et al. 2005). Having positive bonds (importance or being cared, etc.) toward both non-delinquent and delinquent peers were related to higher delinquency among males but to lower delinquency among females, too (Worthen 2012).

However, if adolescents associate with delinquent peers, they could learn their peers' delinquent behaviors. Southerland's differential association theory and Akers' social learning theory explains that individuals commit delinquent acts by learning such acts through

interactions with other delinquent people and by getting positive feedback from them for imitating and practicing such acts (Akers et al. 1979). The associations with delinquent peers were generally found to be a strong predictor of delinquency in a body of study testing the theory (Pratt et al. 2010). For example, Haynie and Osgood (2005) found that having delinquent peers and time spent with peers (rather than closeness to peers) had significant and separate effects on minor delinquency. Time spent with peers was related to higher substance use (alcohol, tobacco, and drug) and delinquency (Barns et al. 2007; Wong 2005). But Wong (2005) found the effect of time was mediated by association with delinquent peers. The effects on delinquency differed by gender in various ways, too. Time spent with peers and time spend with delinquent peers were separately related to delinquency only among males (Worthen 2012). Also, the effect varied by race; those effects of the time spent with peers on substance use was greater among Whites than Blacks (Barns et al. 2007). Association with gangs was related to violent delinquency, and explained the gap between Whites' and Latinos' delinquency (McNulty and Bellair 2003b).

Social Bond from Sports

Adolescents acquire social bonds though participation in sports, too, because they get attached to their teammates, become committed and involved in practice, and learn to obey rules (sport rules or sportsmanship, etc.). Spending time for sports was related to lowered tobacco and drug use but not drinking and delinquent acts (Barnes et al. 2007). Some studies found that playing sports at least once a week or playing only one sport had no effects on delinquency (Miller et al. 2007), but playing two or more sports was related to increased delinquency (Kelly and Sokol-Katz 2011). The findings about the effect of sports in schools (e.g., varsity sports or clubs) on delinquency were mixed; while Miller et al. (2007) found participation in school sports had no effect, Sokol-Kazs et al. (2006) found that participation in varsity sports were correlated

with lower school delinquency and marijuana use, and the effects differed by types of sports and by gender. For example, female soccer and male football were related with increased school delinquency, while female baseball/softball and male basketball and other varsity individual sports among males were related to decreased marijuana use (Sokol-Kazs et al. 2006). In addition to the involvement in sports, Miller et al. (2007) examined the effect of the self-identified jock identity and found that it was more common among males and whites than females and Blacks, and had no effects on total delinquency, while it was related to higher major delinquency but not to minor delinquency. In addition, the effect of jock identity was significant only among Whites but not among Blacks.

Other key factors in competing theories

Self-control theory explains that individuals commit delinquent acts if they like thrilling, risk-taking acts, do not consider the consequences of such acts, and are easily persuaded to commit such acts (Gottfredson and Hirschi 1990). In a meta-analysis, Travis and Cullen (2000) reported that self-control generally predicted delinquent and criminal acts among various types of adolescents across studies. Self-control was related to lower delinquency among Latinos, too (Miller et al. 2009). In addition, self-control is also related to parental control, such as monitoring or supervision of children (Gottfredson and Hirschi 1990). Both delinquent association and self-control were significantly related to increased delinquency even after controlling for both (Pratt and Cullen 2000). For example, low self-control was related to higher delinquency and also was fully or partially mediated by other factors, such as delinquent peers, academic performance, and family support. The patterns of mediations also differed by gender (Mason and Windle 2002).

THE PRESENT STUDY

The limitation of previous studies on social bond theory is that gender and race/ethnicity were often controlled and thus did not examine how these factors might moderate the social bond effects on delinquency. Some previous studies did compare coefficients by gender and racial/ethnic groups, but often either one of them is controlled (e.g., looking at gender differences while controlling for races/ethnicities). Also, often races/ethnicities were controlled in a dichotomy (e.g., whites and non-whites) and did not include Latinos (e.g., Daigle et al. 2007; Worthen 2011; Nakhaie, Silverman, and LaGrange 2000). However, a few studies did compare coefficients across gender and race/ethnicity simultaneously (McCluskey and Tover 2003), but did not test if these coefficients were different within a gender across race/ethnicity (e.g., comparing effects for white, black, and Latino males).

Therefore, the present study examines how various factors discussed in Hirschi's (1969) social bond theory, such as social bonds from family, school, and other activities, might be related to delinquency similarly or differently across gender and race/ethnicity. Specifically, the present study examined how gender and race/ethnicity might moderate these variables' effects. In addition, it examined the gender differences within each race/ethnicity (e.g., white males vs. white females) and racial/ethnic differences within each gender (e.g., white males vs. black males vs. Latino males), in order to see the differences of the effects and to suggest more specific policies or programs.

CHAPTER 2

METHOD

Data and Sample

The present study used secondary data from the National Longitudinal Study of Adolescent Health (Add Health) which has a nationally representative sample of adolescents in grades 7-12 in the United States in the 1994-95 school year at Wave I (Harris and Udry 2011). The present study used the public-use data at Wave I, and this dataset included 6,405 respondents.

Measurement of Variables

Dependent variable

Delinquency scale. The respondents' levels of delinquency were measured based on how frequently they were involved in 15 various delinquent behaviors (see Appendix for scale items). This scale was similar to the 10 item scale used by Demuth and Brown (2004). For each act, the respondents were asked if they did it 0=never, 1=1 or 2 times, 2=3 or 4 times, or 3=5 or more times. The delinquency measure is a sum of these items and ranged from 0 to 45 (the cronbach's alpha was .84; the item-total correlation ranged from 0.33 to 0.58). Since the scale had very high skewness, this scale was subjected to log transformation. Although it did not reduce it to an acceptable level, the log transformation reduced skewness from 2.28(z=69.12) to 0.17(z=5.06). [footnote: Future study should consider examining carefully and omitting a few participants who reported excessive delinquency because their honesty is questionable.]

Independent variables

The *race* variable included Whites, Blacks, and Latinos. In the sample, there were respondents with other races/ethnicities. But I focused on these three largest groups to see the

effects of variables among the majority and to keep the sample sizes for each model large. The respondents were asked whether or not they had Latino origin. Those without Latino origins were asked to self-identify their one or multiple races. Those who identified themselves as more than one race were again asked to choose one race which described them the most. Thus, the race measurement was based on having Latino origin and a single self-identified race. Dichotomous dummy coded variables for Blacks and Latinos were included in regression analysis with Whites as the reference group. The respondent's *sex* was coded as female=0 and male=1.

Family Processes Scales. *Family structure* was constructed based on the presence of a mother, father, mother figure and/or father figures. The family structure measure consists of three types of families. First, two-biological parent families consisting of two parents who were either biological or adoptive parents. Adoptive parents were included here because it was assumed that the most respondents were adopted when they were very small and thus have social bonds to their parents like respondents with two biological parents. Second, *other families with two parents* included structures such as one biological and one adoptive parent, one biological parent and one step parent, and two step parents. Third, *single parent family* consists of a family with only one biological, adoptive, or step parent, or kin who was nominated as a mother- or father-figure by the respondents (e.g., grandmother or uncle). In addition, other characteristics of family structure are also examined. *Numbers of child- and adult- household members in a family* were based on the numbers of household members who were younger than 25 years old (children) and those who were 25 years old or older (adults). *Number of older generation kin* in a family was based on the total number of grand-grandparents, grandparents, and uncles and aunts (without age restrictions), and other relatives and other non-relatives who were older than 25 years old. These variables were included because the presence of more children and adults were

found to be related to higher and lower delinquency probably due to decreased and increased control, attentions, and supervision from parents and other adults per child (Demuth and Brown 2004).

Parental attachment scale was measured by a respondent's feeling of closeness to mother, mother's warmth, satisfaction in communication with mother, and the overall satisfaction with the relationship with mother or a mother figure (see Appendix for scale items). The answers to these items ranged from 1=not at all to 5=very much or 1=strongly disagree to 5=strongly agree, or from 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, 5=strongly disagree. The latter set of the answers were used for the items which asked about a mother's affection toward a respondent and his/her satisfaction in his/her communications with mother, and they were reverse coded to make the higher value mean higher attachment. These items were summed up and rescaled to create parental attachment scale which ranged from 0 to 16. The higher score meant higher attachment. Maternal attachment was used as parental attachment in two parent families. The same questions were asked about a respondent's father, too, and when there were no mother figures in a family, paternal attachment was used as parental attachment. The cronbach's alpha for maternal attachment was 0.86 (the item-total correlation ranged from 0.62 to 0.81), and the cronbach's alpha for paternal attachment was 0.89 (the item-total correlation ranged from 0.70 to 0.84).

Parental control scale was measured based on seven items about how many behaviors each respondent's parents controlled (Demuth and Brown 2004). The seven behaviors included letting respondents make own decisions about when they came back to house on weekend nights, with whom they hanged around with, what they wore, TV watching, time to sleep in weekdays, and what they ate (see Appendix for scale items). Each questions were answered by 0=no or

1=yes. These answers were summed up to make the higher scores mean the higher parental control, and it ranged from 0 to 7 (the cronbach's alpha was 0.64; item-total correlation ranged from 0.24 to 0.42).

Family attachment scale was measured based on three items, asking about how much respondents felt that their family members understood them, had fun together, and paid attention to them, and they were answered by 1=not at all, 2=very little, 3=somewhat, 4=quite a bit, or 5=very much. The higher scores meant the higher family attachment. This scale was rescaled and ranged from 0 to 12 (Colohback's alpha was .80; item-total correlation ranged from 0.59 to 0.66).

Peer Social Bond Scale. *Peer attachment* was based on two items, asking about how many times the respondents just hang out with friends during the past week and how much did they feel that their friends care about them. The first question was answered by 0=not at all, 2=3 or 4 time, or 3=5 or more times. The second one was answered by 1=not at all, 2=very little, 3=somewhat, 4=quite a bit, and 5=very much. The scores were standardized and summed such that high score indicated greater attachment to peers.

Schooling and Activity Social Bond Scales. *School attachment* was based on the respondents' feeling of closeness to people at schools, feeling of being a part of school, among others. They were answered by 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, 5=strongly disagree. They were all recorded and summed to mean the higher value meant higher school attachment. This scale was rescaled and ranged from 0 to 12 (the cronbach's alpha was .78; item-total correlation ranged from 0.58 to 0.66). School commitment was assessed based on GPA and commitment to schoolwork. *GPA* was the average self-reported grade of one to four subjects; since the number of grades reported varied a lot (some reported GPA for only one subject, while others reported GPAs for four subjects), I used all available

GPA to create this variable. So, some respondents' GPA could be based on only one for four subjects. The reported GPA's mean and took its mean value to create a GPA variable. Each item ranged from 1=A, 2=B, 3=C, and 4=D or lower. They were reverse coded, and its mean value was taken to make the higher value the higher GPA. GPA ranged from 1 to 4. *Low school commitment* was based on the respondents' trouble getting along with their teachers and other students, paying attention in school and getting homework done. They were answered by 0=never, 1=just a few times, 2=about once a week, 3=almost every day, or 4=everyday. All scores were summed to make the variable. This scale ranged from 0 to 16, and higher values meant having lower commitment in school (the crohbach's alpha was 0.69; item-total correlation ranged from 0.58 to 0.66).

Religion Social Bond Scale. *Religious participation* was based on two items about the respondents' frequency of religious services attendance and frequency of religious youth activities, such as bible study or choir. They were asked if they attended 1=once a week or more, 2=once a month or more, but less than once a week, and 3=less than once a week, or 4=never. These items were reverse coded, and these scores for the two items were summed up. The summed scale was rescaled and ranged from 0 to 6, and higher value meant higher religious participation.

Involvement in conventional activities is assessed by two measures capturing *active and passive involvement.* The respondents were asked how many times they did housework, hobbies, sports, or exercises during last week. All occasions were answered by 0=never, 1=1~2 times, 2=3~4 times, and 3=5 or more times. All values were summed up to create an active involvement scale which ranged from 0 to 15, and higher value meant higher active involvement. Also, the respondents were asked how many hours they watched TV and videos, listened to radio, and

played video- or computer- games during the past week, and all hours were summed up to create a passive involvement scale which ranged from 0 to 381 and higher value meant higher passive involvement.

Control Variables

Drawing upon competing theories of adolescent delinquency, various individual- and community- characteristics were controlled. At the individual level, other competing theories' variables were controlled, such as the respondents' age, SES, delinquent peers, and self-control. First, age was controlled since, according to life-course theory, age is related to the delinquency (Demuth and Brown 2004) and to the effects of attachment, schools, delinquent peers, and school performance on delinquency (Jang 1999). Age was measured in months and the sample included those aged 11 to 19. Second, the respondents' socio-economic status was controlled. Public assistance was measured if respondent's parents received any public assistance (e.g., welfare) (1=received). The *parents' educational attainment* was controlled since it was found to explain the violent delinquency gap between Whites and Latinos (McNulty and Bellair 2003a; Kaufman 2005) and is arguably a measure of family socioeconomic status. It was measured based on the education level among parent(s), and I used the higher level among two parents and that of single parents (Demuth and Brown 2004). This scale range from 0=no schooling to 9= professional training beyond a four-year college/university. Third, the respondents' association with *delinquent peers* was controlled and was measured based on the average number of the respondents' best three friends who were involved in each smoking, drinking, and marijuana use (e.g., McNulty and Bellair 2003b; Leiber et al. 2009). I took the mean value of the number of peers for each act and created a variable which ranged from 0 to 3, and higher value meant having more delinquent peers (the cronbach's alpha was .75; item-total correlation ranged from

0.55 to 0.60). Fourth, *low self-control* was measured based on four items asking about the respondents' carefulness before and after they did something, such as gathering facts and thinking differently to solve a problem (e.g., Leiber et al. 2009). These items were answered by 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, or 5=strongly disagree. Scores for each item were summed and rescaled. Low self-control scale ranged from 0 to 16 and the higher value meant having lower self-control (the cronbach's alpha was .74; item-total correlation ranged from 0.50 to 0.55).

At the community level, the characteristics of the respondents' neighborhoods were controlled because disadvantaged neighborhood influences violence due to the presence of violent peers on violence (Zimmerman and Messner 2011). Also, urbanicity, poverty, and racial heterogeneity differently influenced delinquency by gender (Payne 2009). First, *urban area* was controlled. Add Health had a dichotomous urban or non-urban area based on the existence of anyone who belonged to urbanized areas in Census block groups. So, non-urban areas meant that those block groups were completely non-urban, such as farming or non-farming areas in rural areas. Second, the *proportion of people under poverty* in Census block groups based on the poverty level in 1989 was controlled because community disadvantage was found to explain racial gap on violent delinquency between whites and blacks (McNulty and Bellair 2003a; McNulty and Bellair 2003b; Kaufman 2005). This measure ranged from 1 to 3 with two thresholds (at 11.6 percent and 23.9 percent) and the higher value meant being in blocks with more people under poverty. Third, racial heterogeneity was controlled by the *proportion of Latinos* in Census block groups. This measure ranged from 1 to 4 for each 25 percentile.

Analytical Strategies

The aim of the present study is to examine how gender, race/ethnicity, and both might moderate the effect of attachment, commitment, and involvement on delinquency. First, I observed the characteristics of the sample and they were shown in Table 1. Second, in order to see if there were any gender and racial/ethnic differences in average level of delinquency, I examine if delinquency differed by gender, race/ethnicity, and both by using t-test and one-way ANOVA in SPSS, and the results were shown in Table 2. Third, I examined the multivariate effect of each variable net the other variables by running separate multiple regression analyses for each group. Although running separate models for each group lowers the size of sample in each morel, this method is used to simplify the process of entering an extremely large amount of interaction terms (for each combination of gender and race/ethnicity for all variables) in one equation. After obtaining coefficients for each variable in each group, I compared each variable's effect on delinquency between males and females and across racial/ethnic groups by using z-test (two-tailed) (Paternoster et al. 1998). The results of regression analysis and z-tests for the models of the entire sample, males, females, Whites, Blacks, and Latinos are shown in Table 3. These analyses compare one identity group at a time (e.g., males versus females). To determine if the intersection of gender and race/ethnicity is important, respondents were divided into six gender by race/ethnicity groups (e.g., black females, black males, white females, etc.), see Table 4. The z-test was used to see if there was a significant difference on the coefficients for each variable across models; coefficients were compared between genders in the whole sample and in each race/ethnicity, between each race/ethnicity in the whole sample and in each gender. The results of z-test were shown only when both of the two compared coefficients were significant in each model, in Table 3 and 4.

CHAPTER 3

RESULTS

Sample Description

Table 1 shows the univariate statistics for the variables. The sample size was 5420 and 48% of them (n=2599) were males and there were about 64% Whites, 25% Blacks, and 11% Latinos. The average age was about 15.9. The mean differences of delinquency by gender and race/ethnicity, separately and together, were examined and results are shown in Table 2. First, there was a gender difference in delinquency (Part A in Table 2), and delinquency among males (M=.589, SD=.403) was statistically significantly higher than that among females (M=.482, SD=.365), t(5251.11)=-10.255, p<.001. Second, there was a statistically significant difference between racial/ethnic groups (Part B in Table 2) by one-way ANOVA (F(2, 2157.38)=12.384, p<.001; the assumption of homogeneity of variance was violated; therefore, the Brown-Forsythe F-ratio is reported). A Tamhane post-hoc test (results not shown) revealed that delinquency among Latinos (M=.604, SD=.405) was statistically significantly higher than that among Whites (M=.520, SD=.387) and blacks (M=.536, SD=.378). There were no statistically significant differences in average level of delinquency between Whites and Blacks (p=.422). Third, a two-way ANOVA revealed significant group differences in the average amount of delinquency reported by the 6 racial/ethnic-gender groups (Part C in Table 2), (F(5, 2663.239)=26.648, p<.001; the assumption of homogeneity of variance was violated; therefore, the Brown-Forsythe F-ratio is reported). A Tamhane post-hoc test (results not shown) revealed that, for example, gender differences within race/ethnicity appeared only among Whites and Blacks but not among Latinos. Among males, there was no significant differences of delinquency across race/ethnicity,

while, among females, delinquency among Latino females was significantly higher than that among Whites and Blacks.

To examine the relationship between social bond variables and delinquency after controlling other variables, a series of multiple regression equations were estimated (see Table 3 for the whole sample, each gender, and each race/ethnicity, and see Table 4 for each gender – race/ethnicity combination).

The effects of family processes on delinquency.

The family structural characteristics (family structure, numbers of child and adult kin, and number of older generation kin) and parental control had no effects on delinquency in the whole sample, in each gender, and in each race/ethnicities, and in each gender within each race/ethnicity. On the other hand, parental support had significant effects across all of these groups, except Latino males. Increases in parental attachment were associated with decreases in delinquency for all respondents independent of sex and race, except for Latino males. Its effect was significantly stronger among Whites than among Blacks and Latinos ($z=1.80$ and $z=2.09$, $p< .05$ (one-tailed), respectively). But, its effect among Latinos disappeared when it was stratified by both gender and race simultaneously.

The effects of school social bonds on delinquency.

First, school attachment was not associated with delinquency controlling for all other factors for any sex or racial groups. However, when race and sex were examined simultaneously, school attachment was negatively associated with delinquency for Latino males but not any other sex/race group. Second, GPA was associated with delinquency for the whole sample and both sexes, but only among Whites and Latinos. Stratifying its effect by gender/race revealed gender differences among all races; it was significant among White and Latino females and Black males.

Also, its effect was stronger among Latino females than White females. Third, low school committment was associated with delinquency among all, in each gender and race, in support of expectations from social bond theory. Its effect was significantly stronger among Whites and Latinos than Blacks ($z=1.66$ and $z=1.72$, $p< .05$ (one-tailed), respectively). However, there is no longer racial difference when it was stratified by sex/race. (The coefficients in Table 3 for whites and blacks were both 0.03; since the z-scores were calculated with more decimals, the difference of the effect of low school commitment between Whites and Blacks was tiny but significant.)

The effects of social bonds from various activities on delinquency.

The religious social bond was not associated with delinquency in the whole sample, in each sex and race, in each sex/race subgroup, contrary to the expectation of social bond theory. Active involvement was associated with higher delinquency in the whole sample, irrespective of the suggestions in social theory. Also, its effect was not uniform when it was stratified by sex and race; it was significant only among males and only among Whites and Latinos. Further, when it was stratified by sex/race, it had significant effect among both White males and females and only among Latino males. Also, the effect among Latino males was stronger than that among White males ($z=1.71$, $p< .05$ (one-tailed)). Similar to active involvement, passive involvement was associated with higher delinquency in the whole sample and in each sex and race, and this contradicts the expectation of social bond theory. When it was stratified by sex/race, passive involvement was significantly related to higher delinquency only among White females and Latino males. (In the Table 3 and 4, each of the unstandardized coefficient was shown as 0.00 because it was so when it was expressed in two decimals which means that it was smaller than 0.005 but larger than 0.)

The effects of social bonds from peers on delinquency.

The effects of delinquent peers and peer attachment were both significantly related to higher delinquency in the whole sample, in each sex, in each race, and in each sex/race. The positive relationship between peer attachment and delinquency contradicts the expectation of social bond theory. Each effect differed by gender; the effect of delinquent peers was stronger among males than females in the whole sample ($z=1.91$, $p< .05$(one-tailed)), and it was also stronger among White males than White females ($z=1.91$, $p< .05$(one-tailed)). The effect of peer attachment was stronger among White males than White females ($z=1.77$, $p< .05$(one-tailed)). The gender differences in the whole sample seem to be reflected only among Whites, and they were the only gender differences found in the present study.

CHAPTER 4

DISCUSSION AND CONCLUSION

The aim of the present study is to explore how adolescents' gender and race/ethnicity might moderate the effects of social bond variables on delinquency. The present study used the nationally representative adolescent data to examine the effects of social bond variables in the whole sample, in each gender and race/ethnicity, and in each gender within each race/ethnicity. The present study showed that, as suggested by social bond theory, some of the social bond factors were significantly related to lower delinquency in the whole sample, such as parental support, family attachment, GPA and school commitment, while some of the other factors (e.g., peer attachment and active and passive involvement's) showed contradicting effects. As these factors were further stratified by gender, race, and gender/race, the effects of these variables became to be varied more. In other word, this process was also to demonstrate how these general findings (in the whole sample) might be related to the effects among various subgroups of adolescents, based on sex, race, and both sex and race. As these effects were stratified more, three types of phenomena were observed. First, as the variables were stratified more, some of them lost its significance; e.g., family attachment among Latinos and passive involvement among Blacks became non-significant when they were further stratified by gender. Second, as the variables were stratified more, it was revealed that the strengths of the effects were significantly different from each other; e.g., there were gender differences in the effects of peer attachment and delinquent peers among Whites, racial difference in the effects of family attachment and low school commitment, and sex-racial difference in the effects of GPA between White and Latino females and that of active involvement between White and Latino males. Third, as the variables were stratified more, some of them even restored their effects only among a

specific subgroup of adolescents; e.g., GPA among Black males and school attachment among Latino males were found to be significant after when they were examined by gender and race/ethnicity. These findings suggest that social bond factors are related to delinquency in various ways across various subgroups of adolescents. They also reconfirm that each adolescent does stand in a different social location in terms of gender and race/ethnicity, and ignoring or controlling this difference in the processes of structuring and testing theoretical models might lead to misrepresenting the actual effects of variables by masking or suppressing them, as evidenced by the findings in the present study.

The significant effect of delinquent peers in present study supported findings in previous studies (e.g., Worthen 2012b). However, while the present study found that its effect was significantly stronger among males than females and among White males than females, Worthen (2012b) did not find gender differences in the effect of peers. She found that, although the effect of delinquent peers was the same among males and females, its effects were further differently moderated by other factors among males and females, such as peer attachment, perceived negative criticism from peers, and time spent with peers; these effects were stronger or only significant among males. Peers seemed to be more negatively influential for males than females. Future studies need to address these ongoing gender dynamics and why they might be seen only among Whites (as found in the present study) or if they might be seen among other races/ethnicities.

In terms of school work, GPA was significant in the whole sample like previous studies (McNulty and Bellair 2003a; McNulty and Bellair 2003b), but its effect was not consistent. It was significant among whites and Latinos (but not among blacks), and among Black males and White and Latino females. In addition, school attachment was found to be significant only

among Latino males, and it was the only variable which was related to lower delinquency in that group. There are not many studies about this since past studies often controlled gender or race/ethnicity. One study found academic problem (measured in terms of students' grade and their perception of being good students) was significantly related to violent and property delinquency among Mexican American males but not females (Jennings et al. 2009). The future studies need to disentangle the relationship between gender and schooling factors especially among Latinos, but also among other race/ethnicity.

There was a slight variation among protective family variables. While parental support and family attachment were both significant among White and Black males and females, parental support was significant among Latino females, but neither factor was significant among Latino males. While Worthen (2011a) found that its effect of parental support/attachment was stronger among males than females, the present study did not find the gender differences in the whole sample, but only among Latinos. Also, family attachment was not significant among Latinos in the present study, although it was related to lower delinquency among all whites, blacks, Mexicans, Puerto Ricans, and Cubans (Estrada-Martinez et al. 2011). The non-significant effect of family attachment among Latinos may be related to their culture which values families; thus, even when they have strong family attachment, it is normative and does not prevent delinquency. Future study needs to continuously look at these gender and racial/ethnic differences.

Active and passive involvements were significantly related to higher delinquency in the whole sample. Both types of involvements were significant among males, while only passive involvement was significant among females. However, when these involvements were looked by gender and race/ethnicity, both involvements were significant only among white females and Latino males, and active involvement was significant among white males. The differences

among males across races/ethnicities may be explained by the differences of the time involved in organized or unorganized activities which were not assessed in the present study (e.g., sports in streets or school). The significant effect of active involvement among White males but not among Black males might be related to jock culture unique to white males (Miller et al. 2007), and jock culture among Latino males needs to be examined in future studies.

On the other hand, there was the significant effect of passive involvement only among White females but not among Black and Latino females. Past studies found that spending time alone (Wong 2005) and associations with delinquent or academic oriented peers influenced the delinquency (McNulty and Bellair 2003b; Liu 2004). Also, the association with academic oriented peers was stronger among females (Agnew and Bresina 1997). The present study's scale of passive involvement could not specify with whom (peers or family members or alone) and with what kind of peers (delinquent or academic-oriented) the respondent spent time with when they consumed media. Future studies need to assess these factors to fully explain the differential effects of passive involvement on delinquency.

Other social bond factors were found to be non-significant. Family structure factors (family type, numbers of child and adult kin, and number of older generation kin), parental control, and religion had no effects on delinquency in the whole sample, in each gender and race/ethnicity, and in each gender within each race/ethnicity. Since each model included a wide range of other social bond factors and delinquent association, the effects of family structure factors, parental control, and religion on delinquency might be mediated by these other factors, as in some previous studies (Wong 2005; Agnew and Bresina 1997; Brent and Corwin 1997). Also, the effect of parental control in the present study might be diminished due to its general delinquency scale because parental control was related to lower property delinquency but not

violent delinquency (Demuth and Brown 2004). Also, when Whites, Blacks, Mexicans, Puerto Ricans, and Cubans were compared, parental control was related to higher delinquency only among Puerto Ricans and Cubans (Estrada-Martinez et al. 2011). So, although its effect was not significant among the Latino respondents, there are ethnic differences among Latinos, too. Also, religion's contribution to social bond might be measured differently because its effect might be moderated by another social bond variable, such as attachment to adults, which was found to be related to lower violent delinquency.

The present study has several limitations that should be mentioned. First, since I did not use a weight for the public data, my sample had biased subsamples in the full Add Health data, such as having too many black respondents with college-educated parents. Thus, the future study must include weighting. Second, the present study was cross-sectional but not longitudinal. Controlling for the previous delinquency at Wave I to predict delinquency at Wave II would help to specify causal effects more accurately. Third, some measurements were poorly operationalized due to the availability of questions in the data. For example, the measurement about delinquent peers asked respondents how many of their three best friends used alcohol, tobacco, and/or marijuana in the past 30 days, rather than their delinquent behaviors which were assessed in the outcome variable. The better measurement to capture the associations with delinquent peers would be using the delinquency reported by the peers themselves. Fourth, although comparing the relative strength of each variable's effect within a model was not a main aim of the present study, examining it would expand the ability to see how each variable plays a role. Standardizing all variables would show the general impact of each variable within a model (e.g., Leiber et al. 2009). In addition, testing interactions among variables or examining mediations would further show how variables similarly or differently influence delinquency

across gender and race/ethnicity. Separating adolescent populations by gender and race/ethnicity into subgroups and treating them as if they exist independently also requires caution because they are not standalone entities. Thus, whenever a subgroup of adolescents heavily interacts with other particular subgroups, it is would also be important to situate the gender and racial/ethnic differences in contexts, too, because each race/ethnicity has its own culture which uniquely influences social behaviors. Also, each place (e.g., urban/rural, concentrated disadvantage, or immigrant concentration) might influence social behaviors differently.

The findings from the present study might be applied to various types of policies to prevent or lower adolescent delinquency. Helping to generate the bond between adolescents and their parents and families seems to be effective among many subgroups of adolescents. Helping them perform well in school seems to be effective for everyone, since it facilitates school commitment and possibly increases GPA which would be effective among White females, Black males, and Latino females. Helping to build strong bonds toward school seems to be the best way among Latino males.

In conclusion, the present study aimed to examine how social bond factors may be moderated by gender, by race/ethnicity and by gender and race/ethnicity because past studies often merely controlled gender and race/ethnicity and did not examine how they influence delinquency among adolescents. The present study found no social bond variables influenced adolescents in each different social location (in terms of gender and race/ethnicity) in the same degree. This does not disregard the importance of structuring and testing theoretical models which seem to be common and are meant to be universally applicable, without overcomplicating results by also testing the models for each gender within each race/ethnicity. However, the findings from the present study suggests the importance of continuously studying the moderating

effects of gender and race/ethnicity, in order to see how the model might actually work across subgroups of adolescents and to provide more effective policy implications for each of them.

Table 1: Description of Sample (Total N=5420)

	Minimum	Maximum.	Mean or %	S.D.
Dependent Variable				
Delinquency	0	1.63	.53	.39
Control Variables				
Age in months (in years)	137 (11)	228 (19)	19.96	19.20
Urban area (1=urban)	0	1	50.8%	
Poverty in area	1	3	1(low) = 55.3%; 2(Medium) = 22.9%; 3(High) =21.9%	
Latinos in area	1	4	1(low) =92.3%; 2(medium) =3.9%; 3(high) =2.0%; 4(very high) =1.7%	
Public assistance (1=receive)	0	1	9.7%	
Parent's education	0	9	5.88	2.48
Delinquent Peers	0	3	.82	.86
Low self-control	0	16	4.77	2.49
Independent Variables				
Gender (1=male)	0	1	48.0%	
White (1=White)	0	1	63.9%	
Black (1=Black)	0	1	24.6%	
Latino (1=Latino)	0	1	11.4%	
Family Social Bonds				
Intact family structure	0	1	55.7%	
Other two parent	0	1	17.2%	
Single parent	0	1	27.1%	
Number of children	0	12	1.52	1.32
Number of adults	0	7	1.91	.59
Number of older generations kin	0	3	.01	.15
Parental support	0	16	13.31	2.92
Parental control	0	7	5.16	1.53
Family attachment	0	12	8.34	2.44
Religious Social Bond				
Religious bond	2	8	4.91	2.17
Social Bond from Activities				
Active involvement	0	15	7.17	2.85
Passive involvement	0	381	4.55	31.84
School Social Bond				
School attachment	0	12	8.29	2.61
GPA	1	4	2.81	.77
Low school commitment	0	16	4.17	2.90
Social Bond from Peers				
peer attachment	-5.8	1.94	.07	1.42

Table 2: Mean Differences of Delinquency by gender, race, and both

		Delinquency		
		Mean	S.D.	Test Statistics
Part A: Gender	Females (n=2821)	.48	.37	
	Males (n=2599)	.59	.40	t(5251.11)=-1.255, p<.001
Part B: Race	Whites (n=3464)	.39	.01	
	Blacks (n=1336)	.38	.01	F(2, 2157.384)=12.384, p<.000
	Latinos (n=620)	.40	.02	*Brown-Forsythe was used.
Part C: Gender and Race	white females (n=1785)	.36	.01	
	white males (n=1679)	.40	.01	
	black females (n=709)	.34	.01	
	black males (n=627)	.41	.02	F(5, 2663.239)=26.648, p<.001
	Latino females (n=327)	.40	.02	*Brown-Forsythe was used.
	Latino males (n=293)	.41	.02	

Table 3: Regression Models for Delinquency in a Whole Sample, by Gender, and by Race/Ethnicity

	Whole Sample (n=5420)		Females (n=2821)		Males (n=2599)		Whites (n=3464)		Blacks (n=1336)		Latinos (n=620)	
	b (s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta
Constant	.84(.07)**		.78(.09)**		.80(.11)**		.77(.09)**		.73(.15)**		1.14(.21)**	
Female	-.08(.01)**	-.11					-.10(.01)**^{B}	.01	-.06(.02)**^{W}	-.08	-.06(.03)*	-.07
Black	.05(.01)**	.06	.07(.01)**	.08	--							
Latino	.08(.02)**	.06	.09(.02)**	.08	.06(.03)*	.05						
Age	.00(.00)**	-.08	.00(.00)**	-.07	.00(.00)**	-.09	.00(.00)**	-.07	.00 (.00)*	-.06	.00(.00)**	-.1
Urban area	.05(.01)**	.07	.04(.01)**	.06	.06(.01)**	.08	.04(.01)**^{B}	.05	.11(.02)**^{W}	.14	--	
Poverty in area	--		--		--		--		--		--	
Latinos in area	--		--		--		--		--		--	
Public assistance	--		--		--		--		--		--	
Parent's education	--		--		--		--		--		--	
Delinquent Peers	.14(.01)**	.30	**.12**(.01)**	.29	**.15**(.01)**	.32	.13(.01)**	.31	.15(.01)**	.31	.12(.02)**	.25
Low self-control	.01(.00)**	.06	.01(.00)**	.05	.01(.00)**	.08	.01(.00)**	.06	.01(.00)**	.07	--	
Other two parents	--		--		--		--		--		--	
Single parent	--		--		--		--		--		--	
# of children	--		--		--		--		--		--	
# of adults	--		--		--		--		--		--	
# of older generation	--		--		--		--		--		--	
Parental support	-.01(.00)**	-.09	-.01(.00)**	-.10	-.01(.00)**	-.07	-.01(.00)**	-.08	-.01(.00)**	-.09	-.01(.01)**	-.11
Parental control	--		--		--		--		--		--	
Family attachment	-.02(.00)**	-.14	-.03(.00)**	-.17	-.02(.00)**	-.12	-.03(.00)**^{BL}	-.17	-.02(.00)**^{W}	-.12	-.01(.01)*^{W}	-.09
Religious bond	--		--		--		--		--		--	
Active involvement	.01(.00)**	.05	--		.01(.00)**	.06	.01(.00)**	.06	--		.01(.01)*	.07
Passive involvement	.00(.00)**	.06	.00 (.00)**	.07	.00(.00)**	.05	.00 (.00)**	.05	.00 (.00)*	.06	.00 (.00)*	.07
School attachment	--		--		--		--		--		--	
GPA	-.03(.01)**	-.05	-.03(.01)**	-.06	-.02(.01)*	-.04	-.02(.01)*	-.04	--		-.05(.02)**	-.10
Low school commitment	.03(.00)**	.22	.03(.00)**	.21	.03(.00)**	.23	.03(.00)**^{B}	.23	.03(.00)**^{WL}	.20	.04(.01)**^{B}	.27
Peer attachment	.02(.00)**	.09	.02(.00)**	.08	.03(.01)**	.10	.02(.00)**	.08	.03(.01)**	.10	.03(.01)**	.12
R^2	.34		.33		.32		.35		.28		.35	

* p<.05 and ** p<.01 Only significant coefficients presented in the table. Coefficient = .00 indicates that it was smaller than .005 but bigger than .0004. **Bolded** font indicates significant difference in coefficient across female and male equations (z-test at p<.05, two-tailed). $^{W, B, \text{and } L}$ indicate significant differences in coefficients across equations for whites, blacks, and Latinos (z-test at p<.05, two-tailed).

Table 4: Regression Models for Delinquency for Each Gender within Each Race/Ethnicity

	White Females (n=1785)		White Males (n=1679)		Black Females (n=709)		Black Males (n=627)		Latino Females (n=327)		Latino Males (n=293)	
	b(s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta	b (s.e.)	Beta
Constant	.66(.12)**		.78(.14)**		.68(.19)**		.71(.25)**		1.30(.29)**		1.04(.32)**	
Age	.00(.00)*	-.05	.00(.00)**	-.10	--		--		.00(.00)**	-.15	--	
Urban area	.03(.02)*	.04	.04(.02)*^{B}	.05	.07(.03)**	.10	.15(.03)**^{W}	.18	--		--	
Poverty in area	--		--		--		--		--		--	
Latinos in area	--		--		--		--		--		--	
Public assistance	--		--		--		--		--		--	
Parent's education	--		--		--		--		--		--	
Delinquent Peers	**.12**(.01)**	.29	**.15**(.01)**	.33	.14(.02)**	.30	.15(.02)**	.30	.11(.03)**	.22	.13(.03)**	.29
Low self-control	--		.01(.00)**	.09	--		.01(.01)*	.06	.02(.01)**	.13	--	
Other two parents	--		--		--		--		--		--	
Single parent	--		--		--		--		--		--	
# of children	--		--		--		--		--		--	
# of adults	--		--		--		--		--		--	
# of older generation	--		--		--		--		--		--	
Parental support	-.01(.00)**	-.09	-.01(.00)*	-.06	-.01(.00)*	-.09	-.02(.01)*	-.09	-.01(.01)**	-.11	--	
Parental control	--		--		--		--		--		--	
Family attachment	-.03(.00)**	-.21	-.02(.00)**	-.14	-.02(.01)**	-.16	-.02(.01)*	-.16	--		--	
Religious bond	--		--		--		--		--		--	
Active involvement	.01(.00)*	.05	.01(.00)**^{L}	.06	--		--		--		.02(.01)**^{W}	.15
Passive involvement	.00(.00)**	.08	--		--		--		--		.00(.00)*	.11
School attachment	--		--		--		--		--		-.02(.01)*	-.13
GPA	-.02(.01)*$^{\underline{L}}$	-.05	--		--		-.04(.02)*	-.01	-.09(.03)**$^{\underline{F}}$	-.16	--	
Low school commitment	.03(.00)**	.21	.03(.00)**	.24	.02(.00)**	.20	.03(.01)**	.20	.03(.01)**	.24	.04(.01)**	.30
Peer attachment	**.01**(.01)*	.05	**.03**(.01)**	.10	.02(.01)**	.10	.03(.01)**	.10	.04(.01)**	.13	.03(.02)*	.12
R^2	.34		.33		.68		.35		.28		.35	

* p<.05 and ** p<.01 Only significant coefficients presented in the table. Coefficient = .00 indicates that it was smaller than .005 but bigger than .0004. **Bolded** font indicates significant difference in coefficient across female and male equations within each race/ethnicity (p<.05, one-tailed).

Use of $^{W, B, \text{and } L}$ indicates a significant difference in coefficient across white, black, and Latino *male* equations (z-test at p<.05, one-tailed).

Use of $^{\underline{W}, \underline{B} \text{ and } \underline{L}}$ indicates a significant difference in coefficient across white, black, and Latino *female equations* (z-test at p<.05, one-tailed).

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APPENDIX

APPENDIX
Items Used to Create Variables

Variable	Individual Item
Delinquency	In the past 12 months, how often did you ... paint graffiti or signs on someone else's property or in a public place? deliberately damage property that didn't belong to you? lie to your parents or guardians about where you had been or whom you? take something from a store without paying for it? get into a serious physical fight? hurt someone badly enough to need bandages or care from a doctor or nurse? run away from home? drive a car without its owner's permission? steal something worth more than $50? go into a house or building to steal something? use or threaten to use a weapon to get something from someone? sell marijuana or other drugs? steal something worth less than $50? take part in a fight where a group of your friends was against another group? act loud, rowdy, or unruly in a public place?
Delinquent peers	Of your 3 best friends, how many smoke at least 1 cigarette a day? Of your 3 best friends, how many drink alcohol at least once a month? Of your 3 best friends, how many use marijuana at least once a month?
Low self-control	When you have a problem to solve, one of the first things you do is get as many facts about the problem as possible. When you are attempting to find a solution to a problem, you usually try to think of as many different ways to approach the problem as possible. When making decisions, you generally use a systematic method for judging and comparing alternatives. After carrying out a solution to a problem, you usually try to analyze what went right and what went wrong.
Parental support	How close do you feel to your mother? Most of the time, your mother is warm and loving toward you. You are satisfied with the way your mother and you communicate with each other. Overall, you are satisfied with your relationship with your mother. *The same questions were asked for both mother and father. The higher or available score was used as a parental support.
Parental control	Do your parents let you make your own decisions about the time you must be home on weekend nights? the people you hang around with? what you wear? how much television you watch? which television programs you watch? what time you go to bed on week nights? what you eat?
Family attachment	How much do you feel that people in your family understand you? How much do you feel that you and your family have fun together? How much do you feel that your family pays attention to you?

(continued)

APPENDIX (continued)

Variable	Individual Item
Religious social bond	In the past 12 months, how often did you attend religious services? Many churches, synagogues, and other places of worship have special activities for teenagers—such as youth groups, Bible classes, or choir. In the past 12 months, how often did you attend such youth activities?
Active involvement	During the past week, how many times did you do work around the house, such as cleaning, cooking, laundry, yardwork, or caring for a pet? During the past week, how many times did you do hobbies, such as collecting baseball cards, playing a musical instrument, reading, or doing arts and crafts? During the past week, how many times did you go roller-blading, roller-skating, skate-boarding, or bicycling? During the past week, how many times did you play an active sport, such as baseball, softball, basketball, soccer, swimming, or football? During the past week, how many times did you do exercise, such as jogging, walking, karate, jumping rope, gymnastics or dancing?
Passive involvement	How many hours a week do you watch television? How many hours a week do you watch videos? How many hours a week do you play video or computer games? How many hours a week do you listen to the radio?
School attachment	[If SCHOOL YEAR:] You feel close to people at your school. [If SUMMER:] Last year, you felt close to people at your school. [If SCHOOL YEAR:] You feel like you are part of your school. [If SUMMER:] Last year, you felt like you were part of your school. [If SCHOOL YEAR:] You are happy to be at your school. [If SUMMER:] Last year, you were happy to be at your school.
Low school commitment	[If SCHOOL YEAR:] Since school started this year, how often have you had trouble: [If SUMMER:] During the 1994-1995 school year, how often did you have trouble: getting along with your teachers? paying attention in school? getting your homework done? getting along with other students?
Peer attachment	During the past week, how many times did you just hang out with friends? How much do you feel that your friends care about you?

VITA

Graduate School
Southern Illinois University

Yurino Kawashima

yurino_kawashima@yahoo.co.jp

State University of New York at Geneseo
Bachelor of Arts, Sociology and Psychology, May 2010

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Major Professor: Rachel B. Whaley