DISCONNECTING FROM DISORDER: AN ANALYSIS OF NEIGHBORHOOD DISORGANIZATION ON ADOLESCENT ACADEMIC WELL-BEING

by

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Abstract

K.R. MARTIN. Disconnecting from disorder: an analysis of neighborhood disorganization on adolescent academic well-being. (Under the direction of DR. LYN EXUM)

Delinquency has been shown to occur in specific locations near juveniles' educational institutions or residential neighborhoods. It is rational to hypothesize that due to the significant impact research has found on future success per environment, that both are responsible for molding an adolescent; but what if an environment fails to provide a quality atmosphere? Can the effects of the disorganized neighborhood be attenuated so that bonds to other institutions can form and possibly strengthen? The hypotheses are tested using the National Crime Victimization Survey: School Crime Supplement and a sample of 5,540 students. Regression models are estimated to view the effect of neighborhood disorganization and academic performance on school bonds. Additionally, the models test for a possible interaction effect. The results not only show a significant interaction, but also provide evidence of moderation through academic performance. Advocacy and suggestions for further research as well as policy and initiative reform are discussed.

Keywords: *school bonds, neighborhood disorganization, academic performance, environment, adolescent*

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Introduction

Bonds, as Hirschi (1969) denotes, are environments and parameters in which one associates with - indicating their stake in society. Consistent environments that are shown to be predictive of future realizations include the institutions of education. Schools have personified a crucial setting in which students interact socially, mentally, and physically, as well as the place where much of their adolescent lives are spent.

Besides academics, many adolescents engage in activities within their neighborhood and local community. These range from games with friends, spending time with family, and delinquent activity. Research has shown that positive neighborhood environments exhibit adequate levels of social control, whereas disorganized neighborhoods characterized by Shaw and McKay (1942) exhibit low social control. These disorganized neighborhoods exhibit qualities of high turnover, presence of delinquency, and a lack of responsibility that one has for his/her neighborhood.

Within adolescent development, school and communal environments are the contexts in which a student's time is mostly spent. Although they physically differ, these environments exhibit the main social atmospheres through which one adapts social skills, routines and characteristics; however, what if an environment fails to provide a quality atmosphere? Can the effects of the disorganized neighborhood be attenuated so that bonds to other institutions can form and possibly strengthen? It is this document's goal to bring light to the importance of the two focal environments adolescents are given access to throughout their day – neighborhoods and schools. In particular, the current

study will examine how bonds can be influenced by educational and ecological factors. Based on these findings, implications for policy and resource allocation will be discussed.

Literature Review

School and Bonding

An adolescent's educational system holds a host of socio-behavioral systems aiding in the establishment of an identity – ranging from social networks, participation in activities, achievement, etc. School deviance occurs when a student ceases to or refuses to be a function of this prosocial system. Students who fail to conform to the educational structure tend to surround themselves with troubled networks and situations, prompting many to drop out of school or commit more severe delinquency (Rees & Pogarsky, 2011; Anderson, 2014). Multiple variables can affect holistic acclimation to school including but not limited to: socialization issues/bullying (Thornberg, 2011; Mehta, Cornell, Fan & Gregory, 2013) and low attainment (Henry, Knight & Thornberry, 2012); however, for the purposes of this document we will be looking at the effect of neighborhood disorganization.

School bonds represent an umbrella of factors that aid in the refrainment of adolescent deviance and maintenance of relationships with/in their educational institution. Work from Hirschi (1969) gives insight to how increased bonds can alter adolescents' perceptions and attainment within their school atmosphere. Components of this early theory include the following: attachment, involvement, commitment, and belief. This framework assumes a positive relationship with these factors and conventional behavior and success. Other tenets such as definitions of self-control and the relationship between social networks have also been shown to be pertinent to the establishment of

bonds and the maintenance of behavior within adolescents (Maschi & Bardley, 2008; Weerman, 2011).

Research has shown that increased bonding to school can come from positive academic attainment and perceptions of school. Those who demonstrate higher bonds are more engaged in their school academic atmosphere and show increased frequencies of perceived post-secondary attainment (Juvonen, 2006; Troutman & Dufur, 2007; Bryan et al., 2012). Effects of school bonds impact mental health and substance use, with more participative students showing lower rates of substance use and increased mental health stability (Henry, 2007; Henry & Slater, 2007; Black, Grenard, Sussman & Rohrbach, 2010).

It has been estimated approximately 70% of young teen delinquency has been shown to occur within their school environment, with another quarter expanding into nearby areas (Miller, 2014). This is typically due to the regulated schedules most adolescents have throughout their week. Many of the offenses are committed within the adolescents' home, community, or academic institution due to the amount of time spent in those areas (Agnew & Brezina, 2001). Out of a 24-hour day, adolescents spend approximately six to seven hours within an educational institution. After school, if the individual does not participate in extracurricular activities, this leaves eight to ten hours that are usually accompanied in a supervised home or community environment – leaving seven to nine hours for recommended sleep. School and communal environments are the contexts in which a student's active time is mostly spent. Although they physically differ, these environments are the main social atmospheres through which one adapts social skills, routines and characteristics.

School Bonding and Neighborhood Disorganization

Environmental factors within a community have been shown to produce negative impacts on students' connectedness to school. Conditions such as visible decay/appearance and frequency of resident vacancy have a detrimental effect on academic performance and dropping out of school. Individuals coming from these non-conformative environments tend to lack the resources and advantages that other peers living in more conventional residencies may possess. For example, those who have weaker family connections/involvement at home have been shown to display more behavioral issues and academic complications (Woolley & Grogan-Kaylor, 2006). Nash (2002) found that being raised in a two-parent household diminishes the chances of adolescents' involvement in fights and tardiness and increase academic performance and attendance.

Students' environments outside of school effect their performance within the school in a host of ways. Communities that have high disorder affect school population and density (Logan & Stilts, 1999; Clapp & Wang, 2006), due to biases regarding community demographic and residential boundaries that affect school composition. With schools having populations of youth coming from areas of concentrated resource deprivation, institutes that do not receive enough funding for qualified teachers and textbooks find themselves with below average performing students (Herrenkohl, 2000; Kingston, Huizinga & Elliott, 2009). This in turn effects classroom operations and curriculum with faculty having to supplement techniques to educate their students – while additionally dealing with behavior issues (Ainsworth, 2002). Behavioral issues have been shown to correlate with adult supervision for adolescents, in that increased unsupervised

time in their neighborhood increases the likelihood of participation in deviant activities – decreasing the time the adolescent allocates to homework (Bowen & Bowen, 2002; McBride Murry et al., 2011). With less supervision and culture being developed by their parental figures, adolescents show increased participation in a non-conformative subculture – demonstrated in negative education and behavior habits (i.e. dropping out).

School Bonding and Academic Performance

Students who effectively establish bonds to school show positive associations with their academic performance (Maddox & Prinz, 2003). That is, those students who engage in the participatory behaviors of their school's culture find themselves succeeding academically greater than their peers who fail to conform. Many studies have demonstrated that the combination of tending to an adolescent's academic performance and school bonding is a system for future success (Catalano, Haggerty, Oesterle, Fleming & Hawkins, 2004; Bryan et al, 2012).

Social Control Theory

In order to refrain from delinquency and from participation in a non-conformative subculture, the development of social bonds/conventionality to one's environment must take place. These "bonds" as denoted by Hirschi (1969) establish one's stake in conventionality through the essence of attachment, commitment, involvement and belief. As these factors increase, so do characteristics that promote positive behaviors (i.e. self-control) – reducing antisocial tendencies. Although theorist have argued that these ideologies are reluctant to explicitly define self-control and other components, Hirschi's

work gives some foundational understandings of compartmentalized elements that help to curb disorderly tendencies – and deviance itself [1].

Attachment. Attachment, one of the primary components of social bond theory, is defined as the affectionate ties one has to others; identification with family/peers; and the extent to which other's opinions/expectations influence their decision-making (Hirschi, 1969; Stewart, 2006). Specific ties are viewed as essential social networks, which adolescents may look to for social behavior cues. In school environments, this can be interpreted as outcomes dependent on the student's care for the maintenance regarding social relationships. High attachment can be displayed as successful peer/faculty interaction, quality attendance and, indirectly, academic success – with low attachment indicated through lack of rapport with peers and teachers, discontent towards environment/members and low attendance (Payne, 2008; Stewart, 2006). Neighborhood attachment translates to peer, family, and community perceptions that have sizeable effects on neighborhood relationships. Weak bonds can result in social ostracism, unhealthy family atmosphere and negative labels attached to one's reputation – with strong bond attachment being shown through healthy communal relationships and concern in the neighborhood's worth (Woldoff, 2002).

Via school environments, attachment can be interpreted as outcomes dependent on the students' care for the maintenance regarding social relationships – which can manifest in academic standings. With one of the more commonly used predictors to

[1] Looking at modern views of social control theory, consideration to self-control must be highlighted. A criticism of Hirschi's early work— namely the omission of self-control— was mentioned but not defined. Gottfredson and Hirschi (1990) responded, stating that self-control was the ability for one to restrain themselves from immediate desires. This could influence an individual by encouraging impulsivity, engaging in risky behaviors and decreasing reason and aspiration (Baron, 2003; Perrone, Sullivan, Pratt & Margaryan, 2004). This intrinsic skill is shown to develop around age ten and tends to remain constant (Gottfredson & Hirschi, 1990).

determine academic success (i.e. grade point average), research has supported the notion that the more attached students are, the higher their GPA tends to be – in both minority and majority racial groups (LeCroy & Krysik, 2008). Although this trend is see this document will be examining higher GPA indicating strong bonding. Attachment to school has also been equated to post-secondary school attainment and shown to have a negative correlation with dropout rates (Goerge, Cusick, Wasserman, & Gladden, 2007; Hallinan, 2008).

Modern tests of Hirschi's control theory note features of self-control, peer effects and morality. Replications and evaluations on the importance on an adolescent's child rearing and how it affects bonding to environments is represented. Empirical research shows that intact families (two parent households) compared to separated, divorced, single-parent and other types of households have a negative relationship with delinquency (Vanassche, Sodermans, Matthijs & Swicegood, 2014). More punitive and corporal punishment tolerant homes are related to higher violent offending behavior (Evans, Simons & Simons, 2012). Social/friend networks are also highlighted in the contemporary characterization of social control theory, in that delinquent peers not only have an effect in types of offending but also increases the probability that the influenced youth will occupy a delinquent role (Laird, Criss, Pettit, Dodge & Bates, 2008).

Commitment. Hirschi (1969) characterizes commitment as the investment one has to conventionality or conformity. Individuals who feel obligated to exhibit law-abiding behaviors are theorized to refrain from rebellious ones, thus strengthening and solidifying their stake. Strong commitment allows the individual to develop characteristics/skills linked with achievement and personal goal obtainment.

Educationally, students who show high commitment in school often value educational achievement and strive for academic success. Within communities, those with low stakes in their neighborhood contribute to non-conformity and engage in analogous activities such as smoking, drinking, fighting, property damage, etc. (Snowden, Stucky & Pridemore, 2017; Horner, Sanchez, Castillo & Delva, 2012).

Empirically, commitment has been shown to be a critical component for adolescents and their academic persona. Cross culturally, this commitment has been shown to influence positive school outcomes – specifically when associated with self-determination and involvement (Levesque et al. 2004; Cavendish, 2013). A student's trajectory on post-secondary completion is also seen to be significantly influenced by his/her level of dedication to their institution, while the analysis has indicated that school commitment is a significant factor in predicting and tracking of three types of delinquency describe in Jenkins (1995) – school crime, school misconduct, and school nonattendance. As school commitment increases, school crime/misconduct decreases.

Involvement. Conventional activities adolescents engage in as an attempt to ensure future success and achievement is the involvement factor of social bond theory (Stewart, 2006; Akers, Sellers & Jennings, 2017). Those who engage in activities, such as studying, school sports, or clubs/organizations are seen to have high involvement within educational environments. Forfeiting or showing lack of effort toward schoolwork demonstrates traits lacking involvement characteristics (Payne, 2008).

Within the educational infrastructure, student involvement has been shown to benefit adolescent outcomes. Students participating in extracurricular activities have been observed showing positive effects in their academic work over their counterparts who fail

to participate in extracurricular opportunities. MacNeal (1995) reported that involvement in athletics and arts aids in the reduction of dropout rates within an institution. Offering students a variety of activities for afterschool enrichment has been denoted to engage students more, in turn requiring improved skills of time management and effort so that this activity can continue (Bradley & Conway, 2016). Significant correlates with school involvement have likewise been found to influence academic achievement positively – more notably in educational activities and sports (Eccles, Barber, Stone & Hunt, 2003); Stearns & Glennie, 2010).

Belief. An individual is deemed to have a high belief structure if they exhibit support for conventional norms and values consistent with the betterment of society. These people are those seen as models of good character and strive for unalloyed morality. Following standards such as refraining from underage drinking/smoking, abiding curfews, and obeying authorities are examples of actions that an individual displaying adequate belief would demonstrate. Children who break rules to obtain popularity or engage in mature activities (i.e. smoking) are found to have a low belief bond and are prone to offending activity (Stewart, 2006). Views supporting cheating on tests and bringing weapons to school also demonstrate characteristics of an adolescent lacking belief bonds with their academic environment.

Social Disorganization Theory

As noted, influences stemming from both school and community are essential to adolescent development. One theory that views deviance as an ecological event is Shaw and McKay's (1942) Social Disorganization Theory, which attempts to represent how offending/deviance and community decay are the effects of internal (family dysfunction)

and external neighborhood (i.e. poverty) characteristics. They developed their theory by looking at delinquent youths in Chicago, IL, during a period of rapid increase of the city's immigrant population and crime within specific areas. After the collection of their data, they used a ring-zone marking method developed by Parks and Burgess (1925) to create a patterned area of deviance rates for the neighborhoods. The zones showed the most affluent land and the business district resided in the center of the city where commercial activities are centered (described as Zone I). They found that the surrounding areas of this ecological center (described as Zone II; or Zone in Transition) contained high concentrations of "disorganization" (Akers, Sellers & Jennings, 2017). These disorganization factors pertained to race, socioeconomic status, residential mobility, and family disruption.

Race/Ethnicity. Shaw and McKay (1942) argued that racial/ethnic diversity hindered communication amongst neighborhoods. As a result, fear of victimization and distrust manifests within heterogenic populations as they become divided and private, thereby decreasing interaction and social control. Racial composition has been shown to cause tension between communities, as diversified communities tend to produce cynicism (Thomas, 2001). Effects additionally affect other areas of life for communities and adolescents. Logan and Stilts (1999) argue that, in addition to looking at the quality of local schools and employment, home buyers have intentions on settling for a place that also includes boundaries that separate themselves from minority populations (Akins, 2007). These conventions further influence school population and diversity density within the area and surrounding. Although not shown to have an interactive effect with other social disorganization properties (i.e. poverty), it does manifest in social strain

amongst students and peer selection (Thomas, 2001; Maume, Kim-Godwin & Clements, 2010).

Poverty and Socioeconomic Status. Socioeconomic status (SES) and levels of poverty have been shown to be conducive of social disorganization (Shaw & McKay, 1942; Sampson & Groves, 1989). Neighborhoods that tend to lack the necessary resources to provide social control and supervision result in lower attainment in school (Pagani, et al.). McBride Murry et al. (2011) suggest the probability of an adolescent succumbing to poverty increases if the individual is of minority descent. African American and Latino youths are the densest population exposed to poverty (both averaging 35% respectively) in comparison to their White counterparts whose poverty rates are diminished by half.

On multiple occasions, impoverished neighborhoods have been shown to have a positive correlation with low attainment (Carney, 2007). Poverty has been seen to show a direct relationship with scholastic habits. These habits include but are not limited to daily homework allocation, time away from school, test scores, and dropping out of school (McBride Murry et al., 2011). Synchronous to these maladaptive habits, impoverished education institutions exhibit environments that are not conducive to academic success nor do they foster the resources for post-secondary education attainment for their students (Galster, Marcotte, Mandell, Wolman & Augustine, 2007). Overall, studies continue to show that students in impoverished situations fail to compete with those whose families are in more affluent income brackets (Lacour & Tissington, 2011; Hair, Hanson, Wolfe & Pollak, 2015) – unable to provide as many conventional opportunities

Residential Mobility. Shaw and McKay (1942) additionally favored the ideology of residential mobility and its effect on a neighborhood's organization. The conceptual framework presents mobility as a barrier that disrupts socialization development in peer networks, local ties, etc. (Sampson & Groves, 1989). Areas where residents tend to relocate frequently have an unstable foundation in social control due to their lack of investment.

Mobility as a barrier and within a community has shown to be problematic and detrimental regarding adolescent criminality. Effects of mobility can be seen in academic performances of students as well as behavioral issues. Significant negative effects in isolations rates, peer development, and mathematic and linguistic scores have been attributed to adolescent mobility (Anderson & Leventhal, 2017).

Hypermobility as detailed by Crowley (2003), attaches itself into familial issues such as divorce and physical violence. More importantly, these changes increase the likelihood of psychological ailments manifesting in depression, anxiety, and self-esteem issues (Jelleyman & Spencer, 2008; Anderson & Leventhal, 2017) – which affects academics. Although research has revealed multiple residential moves within a youth's life are harmful, it has not been analyzed at an incremental life stage level and its significance to their behavior (Anderson & Leventhal, 2017).

Contrary to the above, when SES is controlled, the move from one community to another acted as a way for families to reset and escape the maladaptive entitles from the previous location – producing positive outcomes (Kingston, Huizinga & Elliott, 2009).

Family Disruption. Household disorder, another component of the theory, has been argued to decrease civic level social controls. Abusive and impoverished households

show weakened familial control and results in a lack of supervision and awareness of adolescent activities (Browning, 2002). This increases disorganization within the neighborhood, allowing crime and deviance to form. Shaw and McKay's original model shows these factors disrupting community bonds due to failure to establish adequate social control, making them more disadvantaged (Akers, Sellers & Jennings, 2017).

Research has solidified the notion that the more disadvantaged a home is for an adolescent the more detrimental the effects are (Thornberry, Smith, Rivera, Huizinga & Stouthamer-Loeber, 1999; Juby & Farrington, 2001; Somers et al., 2011). Families who tend to be more disrupted also have problems regarding academic performance and social stability (Sun & Li, 2009; Barajas, 2011; Eriksen, Hvidtfeldt & Lilleør, 2017). Academic and social competency have revealed themselves as correlates of family disruption, which also has been shown to influence high school dropout and completion (Thornberry, Smith, Rivera, Huizinga & Stouthamer-Loeber, 1999; Saatcioglu, 2010).

Studies have shown an interrelated pattern regarding social disorganization theory features. The most disorganized neighborhoods have consistently shown to be ones with severely disrupted families, high turnover ratings, and have residents who procure lower than norm income (Morenoff, Sampson & Raudenbush, 2001). All of these characteristics increase a community's disorganization level and its index of concentrated disadvantage – thus lowering their collective efficacy (Browning, Dietz, & Feinberg, 2004; Akers, Sellers & Jennings, 2017)

Conceptual Framework

The framework that drives this argument is displayed through the environment's essential influence within an adolescents' life – given the time in which they spend in the respective environments. Based on prior research, it is rational to hypothesize that academic performance and neighborhood environment both have a significant impact on future success and that both are responsible for molding an adolescent. But what if an environment fails to provide a quality atmosphere? Can the effects of the disorganized neighborhood be attenuated so that bonds to school can form and possibly strengthen? For example, someone coming from a high disorganized neighborhood but also displays elevated bonds within their academic institution are predicted to be bound for success in comparison with individuals in adverse conditions and bond makeup. Some research would be torn saying due to his ecological background they are prone to academic/social failure, however, the bonds they have to school would predict optimistic vivacity.

Kula (2013) finds support for this framework with her work with second generation Latino-American students, positing that the educational institution's atmosphere can counteract negative effects coming from low performing environments and other factors that many Latin American adolescents encounter daily to enable success. Madyun and Lee (2010) note that Hmong students, with limited English proficiency, showed higher academic performance scores than their White counterparts in more advantaged conditions, supporting the idea that neighborhood disorganizations can produce academically enriched students despite their surroundings. These same Hmong populations in high poverty/crime areas showed they needed fewer academic resources and special educational services than their more racially dominating peers. Lewallen et al.

(2015) and Johnson (2016) argue that a combination of participation and assistance from schools and outside community organizations (i.e. GEAR UP and The Whole Child approach) can produce lasting effects for youths in disorganized neighborhoods. By increasing the bonds and focus within the school, attenuated effects and produce long term achievement. The following hypotheses will be tested and are considered the formal hypothesis for the analysis:

Hypothesis 1: Academic performance will have a positive relationship with school bonds, net of control variables.

Hypothesis 2: Adolescents who live in socially disorganized neighborhoods will report weaker school bonds than those living in more organized communities, net of control variables.

Hypothesis 3: Academic performance will moderate the relationship between social disorganization on school bonds, net of control variables.

The diagram below shows the conceptual framework inclusive of above hypotheses:

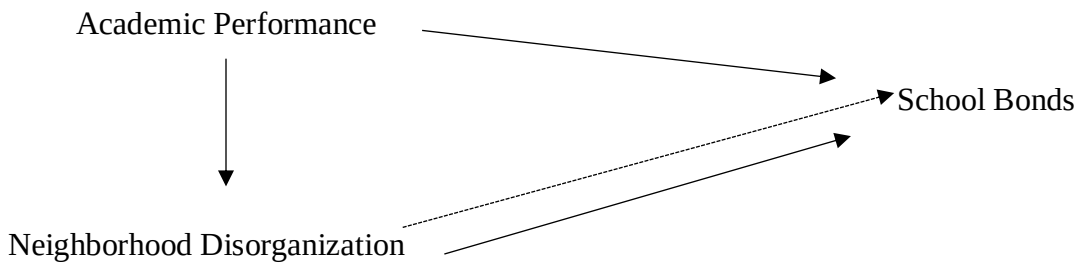

Figure 1: Thesis Conceptual Diagram

Methodology and Measures

Sample Description

The sample used for this analysis consists of participants of the National Crime Victimization Survey: School Crime Supplement. This particular portion of the survey is administered to students between the ages of twelve and eighteen who attend primary or secondary education programs (elementary through high school). These students must be enrolled within the educational institution at least six months prior to the survey's administration. The purpose of this section of the survey allowed for researchers to collect information pertaining to school victimization and offending. This allowed for city, state, and federal officials to gather information in order to influence policy and change within their respective educational sectors. The additive segment, the School Crime Supplement, allows for researchers to gather information regarding students' perceptions of their institutions operations and atmosphere, presence of weapons, drugs and other maladaptive entities, as well as, individual accounts of victimization. The interviews were conducted face to face and students were administered the 2011 version of the survey. A total of 10,341 students were interviewed for the survey, however due to sample participation criteria, 5,540 students represent the sample used. For better understanding of the variable and measures used for the following analyses, Table 1 characterizes the scales and indexes for this document.

Dependent Variable

School Bond. A measure of the adolescent's bond to school was developed for this study. The school bond index helps determine a student's attachment, involvement

and belief to the school's culture. Z score summation of these values helps compare the same on the same scale in order to produce a distribution of low and high bonds. Summation of these values help rank the students with high school bond in comparison to those who lack the characteristics. These bonds are analyzed through three of the four elements noted by Hirschi (1969) within the dataset. Descriptive statistics of the dependent variable are shown in Table 2.

The attachment subscale is an 8-item additive Likert system that evaluates the extent to which adolescents perceive social relationships with the various adults and teachers within their educational institution. This scale includes the care, respect, attention, and esteem received from these academic figures they encounter during their regular school day. Inquiries include how much an adult/teacher: a)cares about student; b) treats student with respect; c) listens to student; d)want students to do their best/succeed

Involvement was measured on a 7-item additive dichotomous subscale looking at one's participation in various extracurricular activities during the school year. The activities probed include: a) athletic teams; b) spiritual groups; c) student government; d) performing arts; e) academic clubs; f) community service/volunteering; and g) other.

Belief was measures using one item Likert query from the dataset gauging the adolescent's opinion on the fairness of their school's rules.

Note that there are no variables that corresponded to the commitment element of the bond, and so no commitment subscale is used in this analysis.

Independent Variables

Academic performance. Academic performance is measured by students' perceived performance in their classes. Students' self-reported grades that they typically received. Students chose from one of five grades: A through F. A summary of the academic performance distribution is shown in Table 2.

Neighborhood Disorganization. The disorganization scale was generated to acquire a common numerical rating to place on the student's area of residence. This disorganization measure combines the students' feelings of safety within their community and their perception of how frequently crime occurs. On a Likert-scale, the values additively will depict disorganization levels (min = 2; max = 8). Descriptive statistics of the independent variable are shown in Table 2.

It is important to note that the measures used to determine a neighborhood's disorganization (i.e. perceived neighborhood safety and perceived crime) are not the traditional measures used to test Shaw and McKay's (1942) theory (e.g., poverty, residential mobility/turnover, etc.). Instead, the current study's measure will examine crime and fear of crime within a neighborhood, which has shown to have a positive relationship with recognized social disorganization properties (Ludwig, Duncan & Hirschfield, 2001; Carney, 2007; Akers, Sellers & Jennings, 2017).

Control Variables

Univariate statistics for the study are presented in Table III. Because these descriptive characteristics are seen as invariable at the time of the survey, they will be used as controls for model analysis. Models controlled for these variables aid in interpretation accuracy and assumptions to the general population.

Gender. Gender was measured with a simple dichotomous item, where 1 = Male and 0 = Female. Approximately 50.9% of the sample identified themselves as being male (n=5264), with roughly 49.1% identifying themselves as female (n=5071).

Age. The age distribution was used as a continuous variable and is distributed as shown in Table 3. All students who refused to answer are categorized as "other". The mean age of the sample is 14.45 (SD= 3.44).

Race/Ethnicity. Analyzing the race distribution, the students reported their race/ethnicity from the six possible options: 1) White; 2) Black/African American; 3) American Indian/Alaskan Native; 4) Asian; 5) Native Hawaiian/ Pacific Islander; 6) Other. The distribution of responses is shown in Table 3.

Planned Analysis

Analyzing the data from the NCVS: School Crime Supplement allows me to operationalize my hypotheses and generate results concerning neighborhood disorganization and it relation to school bonds. In general, the procedure looks at disorganizing effects on school bonds while also taking into account student's academic performance. The complete model will additionally look for an interaction effect with performance and disorganization, hoping to show a significant effect that supports the hypothesis of attenuating effects. The initial regressions investigate the relationships academic performance and neighborhood disorganization on school bonds (shown below), as noted in the first two hypotheses.

School Bonds = Academic Performance + Control Variables

School Bonds = Neighborhood Disorganization + Control Variables

The third hypothesis looks at an interaction effect between the independent variables and an adolescent's school bond. In this case, the interaction effect says that the model's negative effects in social disorganization will be reduced by strong school bonds. The model that will be tested is as follows:

School Bonds = Disorganization + Academic performance + (Disorganization * Academic performance) + Control Variable

Table 1: Description of Variables

Variable	Description	Example
Dependent Variables		
School Bond		
Attachment	8 item additive scale including a bullying index and students perceived opinion of the teachers and other adults within their school environment care and motivation. Inquiries include how much an adult/teacher: a) cares about student; b) treats student with respect; c) listens to student; d) want students to do their Perception measured through Likert scale with 4 = Strongly Agree, 3 = Agree, 2 = Disagree, 1 =Strongly Disagree.	Thinking about the teachers at your school, would you strongly agree, agree, disagree, or strongly disagree with the following... Teachers treat students with respect
Involvement	7 item additive scale made up of dichotomous questions. Each question asks about participation in (a) athletic teams (b) spiritual groups (c) performing arts (d) academic club (e) student government (f) community service/volunteer clubs (g) other clubs/activities. All indicators code 1= Yes 0 = No	During this school year, have you participated in any of the following activities sponsored by your school: Athletic Teams?
Belief	One item Likert scale measure indicating one's belief in school rules and procedures with 4 = Strongly Agree, 3 = Agree, 2 = Disagree, 1 =Strongly Disagree.	I am going to read a list of statements that could describe a school. Thinking about your school, would you strongly agree, agree, disagree, or strongly disagree with the following... The school rules are fair.

Independent Variables		
Neighborhood Disorganization	2 item scale measuring student's perception of neighborhood crime and personal safety. Both indicators are modeled in a Likert-style with 4 = Strongly Agree, 3 = Agree, 2 = Disagree, 1 =Strongly Disagree. A summed score is used to determine disorganization shown (min = 2; max = 8).	Thinking about the neighborhood where you live, would you strongly agree, agree, disagree, or strongly disagree with the following… There is not a lot of crime in the neighborhood where you live.
Control Variables		
Age	Age in years	
Sex	A dichotomous variable with male = 1, 0 = female.	
Race	A six-item selection including:1) White; 2) Black/African American; 3) American Indian/Alaskan Native; 4) Asian; 5) Native Hawaiian/ Pacific Islander; 6) Other.	
Academic Performance	This variable is a numerical coding of the students perceived current academic standings (A=5, B=4, C=3, D = 2, F=1).	During this school year, across all subjects have you gotten mostly -

Table 2. Description of Primary Independent and Dependent Variable (N=5,540)

	%(n)	Mean (SD)
Dependent Variables		
School Bonds		14.27 (3.53)
Components		
Attachment		25.07 (2.85)
Belief		3.17 (0.59)
Involvement		
I0	32.73% (1813)	
I1	35.70% (1978)	
I2	20.13% (1115)	
I3	9.24% (512)	
I4	3.79% (210)	
I5	1.23% (72)	
I6	0.13% (7)	
I7	0.04% (2)	
Independent Variables		
Academic Performance		4.20 (2.85)
A ⇢ 5	39.87% (2209)	
B ⇢ 4	45.04% 2495	
C ⇢ 3	15.60% (864)	
D ⇢ 2	1.88% (104)	
F ⇢ 1	0.67% (37)	
Neighborhood Disorganization		6.45 (1.22)
D2	0.40% (22)	
D3	0.61% (34)	
D4	3.61% (200)	
D5	14.19% (786)	
D6	40.78% (2259)	
D7	10.70% (593)	
D8	29.71% (1646)	
Components		
Perceived Crime		3.09 (0.82)
Perceived Safety		3.36 (0.59)

D indicates the total score of the neighborhood disorganization variables.
D2 indicates the lowest level of disorganization where D8 is the environment with the most disorganization.

Table 3. Description of the Sample (N=5,540)

	% (n)	Mean (SD)
Sex		
Male	50.23% (2783)	
Female	49.77% (2757)	
Age		14.78 (1.87)
12	14.69% (814)	
13	15.87% (879)	
14	15.18% (841)	
15	15.96% (884)	
16	15.54% (861)	
17	15.29% (847)	
18	7.47% (414)	
Race		
White	79.55% (4407)	
Black	12.38% (686)	
Asian	3.70% (205)	
Other	4.37% (242)	

Results

Exploratory Figures

Given the research and variables presented in this document, exploratory plots and figures were generated prior to the regression analysis. These models are as follows:

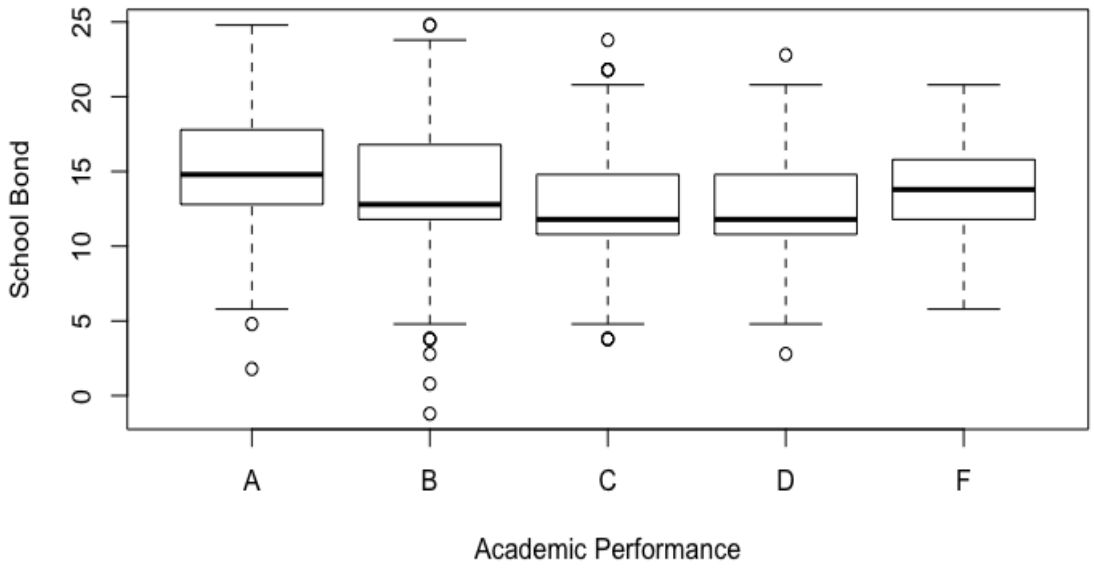

Figure 2. Academic Performance on School Bond

Figure 2 looks at the relationship between academic performance and school bond. The figure shows a relationship that parallels past research, in that students who have higher bonds show higher academic performance. The exception to his pattern are those students receiving Fs. These F students show a higher median of bonding despite receiving low grades.

Figure 3 examines the relationship between neighborhood disorganization and school bonds. The disorganization scales coded with 2 representing the lowest level of disorganization, increasing within the model (max = 8). Unlike previous research,

individuals in the sample with higher levels of disorganization have higher bonds with their school.

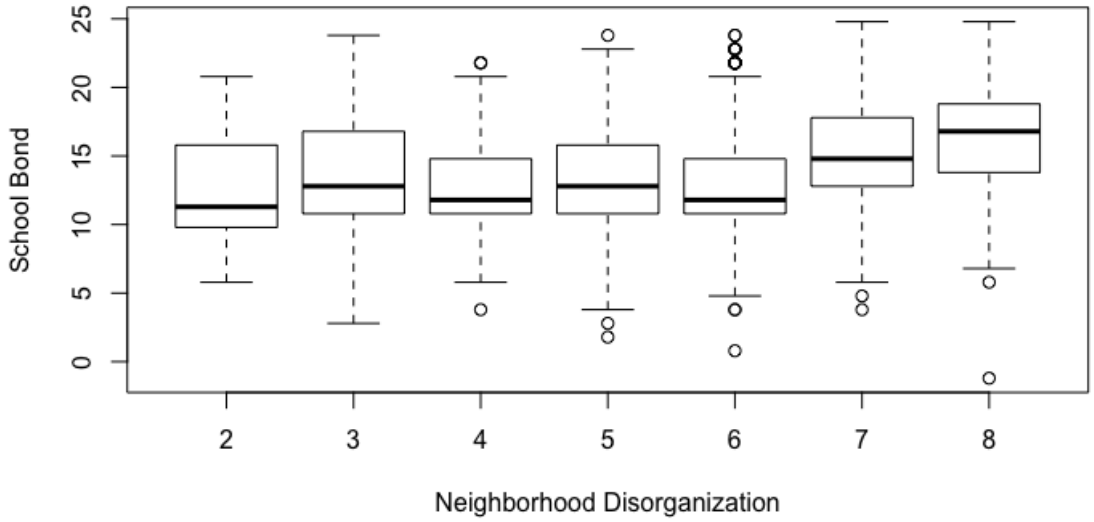

Figure 3. Neighborhood Disorganization on School Bond

Figure 4 represents the relationship between neighborhood disorganization and academic performance. Here, the grade selection has been made numeric by giving each grade a numeric operation – where F = 1 and A =5. According to the figure, students with higher perceived disorganization in their neighborhoods report higher academic performance than those in more organized communities. Only when disorganization is indicated > 8, grade distribution becomes exclusively above average.

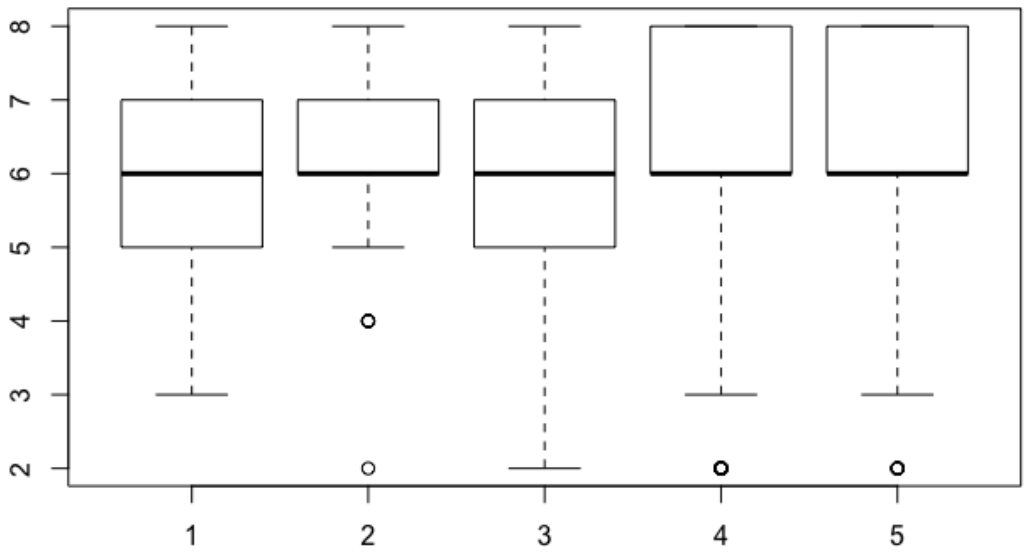

Figure 4. Neighborhood Disorganization on Academic Performance

The exploratory models have shown the following themes: 1) Higher academic performance for students generally exhibits higher school bonding; 2) Those with higher levels of disorganization have higher bonds with their school atmosphere than their peers in more organized neighborhoods; and 3) Only students with the highest perceived disorganization in their neighborhoods receive higher grades than those in any other type of organized/disorganized communities - according to Figure 4. These relationships are examined further in a series of regression analyses.

Regression Analysis

Ordinary least squares regression (OLS) was used to estimate the models (N= 5,540). Given our theoretical constructs, we have chosen to place the threshold for significance at the standard $p < .05$. All interval/ratio level variables have been mean centered for better interpretation and accuracy. As noted above, there is an assumed relationship between neighborhood disorganization and school bonds in that the effects of disorganization can be attenuated by academic performance.

To assess the hypothesized relationships, we first estimate a bivariate correlation among the study's primary variables (Table 4.) When reviewing the strength of the bivariate correlation coefficients the following ranges are considered: < |.30| are weak, |.30| to |.70| moderate, and >|.70| strong. Next, a bivariate regression looking at the effects of disorganization and academic performance on school bond respectively (Models 1 and 2) is estimated. A multivariate regression including both predictors is then generated and produced in Model 3. Model 4 will include an interaction, while the concluding model combines all models – controlling for population demographics (Model 5). All multivariate models are shown in Table 5. R^2 values measure of model fit with coefficients ≤ .1 showing weak, > .1 but <.25 showing medium, and ≥ .25 showing strong model fit.

Table 4 presents the results of the bivariate analysis of the primary independent and dependent variables. A moderate association was found between school bond and neighborhood disorganization ($r = 0.34$). All other effects were categorized as weak.

Table 5 presents the OLS regression models estimated and their effects on the dependent variable school bonds. With academic performance being a relevant part of

school bond research (Maddox & Prinz, 2003; Catalano, Haggerty, Oesterle, Fleming & Hawkins, 2004; Bryan et al, 2012), Model 3 adds both variables into a multivariate regression model, followed by an interaction addition in Model 4 amongst the significant grades.

Models 1 and 2 looks at our independent variables individually as they relate to school bonds. Models show that for every one unit change in the academic performance mean there is an increase in school bonding (b = 1.11); respectfully for every additional one unit change in our disorganization mean there is an increase in school bonding (b= 1.00). Results from Model 1 are contrast the mentioned Hypothesis 2 – which predicts a *decrease* in bonding.

Model 3 uses a multivariate regression combining both independent variables. There was a significant effect attached to both variables. Analysis states that when controlling for neighborhood disorganization, there is an increase in school bonding (b = 0.91) for one increment increase in the mean of academic performance variable. Additionally, when controlling for academic performance, there is a bond increase of 0.91 for every one unit change in the mean pertaining to neighborhood disorganization.

Given the significance within Model 3 regarding student's academic performance and neighborhood disorganization, Model 4 uses the two primary independent variables to create an interaction terms that shows the effect of one predictor variable with another will produce a greater significant effect than apart. Results indicate that there is a positive interactive relationship between a student's perceived academic performance and neighborhood disorganization (b = 0.13)

The full model (Model 5) looks at the previous multivariate testing against the control variables described in Table 1. In this new model, the significant and counterintuitive effect of social disorganization remains present. Contrary to prediction, bonds increase by .93 points for every unit increase of the disorganization mean. Academic performance also showed significant effect showing a mean unit increase for 0.93 increase in school bonding Additionally, the interaction term for our primary independent variables remains significant ($b = 0.13$, $p = 0.00399$). With regards to student gender, female students show to have a higher school bond than males. Lastly, when examining race, compared to White peers, African American students showed higher bonding to their school ($b = 0.42$).

Table 4. Bivariate Relationship Amongst Primary Variables

	1	2	3
School Bond	**1.00**		
Neighborhood Disorganization	0.34	**1.00**	
Academic Performance	0.25	0.14	**1.00**

Table 5. Multivariate Regression on School Bond

	Model1	Model2	Model3	Model4	Model5
Intercept (SE)	-2.26e-16 (0.04)	5.56e-15 (0.05)	4.396e-15 (0.04)	-0.02 (0.04)	0.15 (.07) *
Neighborhood Disorganization	1.00***		0.91 ***	0.91 ***	0.93 ***
Academic Performance		1.11 ***	0.91 ***	0.92 ***	0.91 ***
Neighborhood Disorganization * Academic Performance				0.13 **	0.13 **
Age					0.02
Sex					-0.45 ***
Race					---
African American					0.42 **
Other					0.10
R^2	0.12	0.06	0.16	0.16	0.17
F	745.9	363.9	526.4	354.3	158.2
N	5540	5540	5540	5540	5540

*** .001. **<.01. * < .05.

Discussion

The main objective of this document was to examine whether academic achievement (GPA) can diminish the effects of neighborhood disorganization on school bonds. This attenuation would be viewed by the effect and interaction of perceived academic performance alongside disorganizing elements. Given the findings, the hypotheses are not fully supported by the data.

Hypothesis 1 stated school bonds will have a positive relationship with academic performance, net of control variables. According to Table 5 academic performance does have a positive relationship, seen from the positive coefficients of the slopes – coinciding with research (Catalano, Haggerty, Oesterle, Fleming & Hawkins, 2004; Bryan et al, 2012).

Our second hypothesis predicted that adolescents who live in socially disorganized neighborhoods will report weaker school bonds than those living in more organized communities, net of control variables. Contrary to this prediction, the findings from the current study uncovered a positive relationship to between disorganization and bonds. While the reasons for this relationship are not fully known, it may be the case that students who experience weak bonds to their community (because it is disorganized) seek to compensate by forming stronger bonds to other institutions, such as school.

Lastly, the study's third hypothesis predicted that academic performance would attenuate the effects of social disorganization on school bonds, net of control variables. With controls excluded, significant attenuation through academic performance appeared

in Model 4. Interaction continued to produce a significant effect after controls were introduce, giving additional support of a moderating effect.

Results additionally found African American students bonding more to their educational institution greater than their White peers within the sample when controlling for disorganization, performance and other demographic indicators. This reason is unknown but could be due to number of African American families in disorganized situations. With this in mind, it would support the documents framework, that these students would attach more to their educational institution given their residential environment. Likewise, female students showed higher bonding than males. This is feasibly due to a cultural upbringing effect (i.e. gender roles), in the thought that males should possess more physical attributes and females should display mental capabilities (Updegraff, McHale & Crouter, 1996; Tenenbaum & Leaper, 2002).

Unlike prior research (Herrenkohl, 2000; Woolley & Grogan-Kaylor, 2006; Kingston, Huizinga & Elliott, 2009), bonds showed a positive relationship with neighborhood disorganization. This result is seen in Figure 3, which shows a positive trend amongst higher disorganized neighborhoods. Concluding models' interaction effects show that although students are in disorganized arenas, they are more capable to establish bonds to their educational environment and perceivably succeed in the classroom than those in more organized areas.

Policy Implications

School and communal environments are the contexts in which a student's time is mostly spent. Although they physically differ, these environments exhibit the main social atmospheres through which one adapts social skills, routines and characteristics. Policies and programs must be implemented to counter neighborhood disorganization, while others sustain student bonds to school in order to contribute to a whole resolution. These regimes should dual-attack entities that affect the lives of children, both in the neighborhood and school. Federal entities have been employed to address community needs; however due to budget cuts and other inconsistencies many education and school assisting programs that are established to address youths are discontinued and/or are given unreliable funding. This document, although it does not explicate a theoretical proposal, does address a need for further research regarding efforts to assist in supporting programs and initiatives tailored to adolescent development and interest in schools. To accomplish this goal, this section will direct attention for action by characterizing present/modern difficulties from weakened school bonding and effects of neighborhood disorder in the form of delinquency.

Tolls to the adolescent can manifest themselves into non-physical or tangible outcomes. Psychological impairments have shown to foster themselves within misconducting adolescents. Unhealthy environments increase the likelihood of psychological ailments manifesting in depression, anxiety, and self-esteem issues (Jelleyman & Spencer, 2008; Anderson & Leventhal, 2017).

Based on the current study and prior research, attention towards adolescent school bonding must be addressed from policy makers. Allocation of funds must be advocated for in order to generate long lasting productive programs that assist students – especially those coming from highly disorganized neighborhoods. It is not the purpose of this document to criticize neighborhood-based initiatives or to place more importance on one technique than another, however few to little resources and concentration to address onset offending may aggravate future offending opportunities for adolescents. Programs should be a tailored to not only address Hirschi (1969) bond components, but foster opportunities for synergy of environments – specifically "failing" environments.

Ultimately, the conversation has to be shifted to a more proactive conversations regarding the wellbeing. Deconstructing sub-institutions such as in school suspension and out of school suspension polies that label children as societal problems – affecting acclimation. Conversations should present policies that detail procedures addressing issues prior to initial offending. Regimes should promote more programs and fewer consequences.

Limitations

Although significant effects were found within the models, limitations of the study must be addressed. First, when using perceived safety and perceived crime we understand that these operations are not ideal variables in determining social disorganization and its components. However as mentioned, the measure does examine crime and fear of crime within a neighborhood, which are consistent with social disorganization properties (Ludwig, Duncan & Hirschfield, 2001; Carney, 2007). Another limitation presented is the measurement of commitment. Within the NCVS dataset, components measuring commitment could not be determined. Furthermore, when examining academic performance, it is important to note that these are self-reported academic grades, and do not represent official grade point averages nor academic standing. Finally, the data used of analysis is cross-sectional, leaving interpretation of cause and effect ambiguous.

Future directions for research would include generating a more inclusive survey regarding bonds and disorganization. Although the analysis did not examine school disorganization or true neighborhood bonding, these additions would provide a complete model characterizing effects of both environments. Official reports of GPA and/or academic attainment along with official neighborhood disorganization and composition would offer better support for findings as well.

Conclusion

Bonds have been shown to indicate one's stake in conformity through environmental parameters. Due to their regulated schedules, an adolescent engages mostly with their community and school environment. Many delinquent offenses are committed within the adolescents' home, community, or academic institution due to the amount of time spent in those arenas (Agnew & Brezina, 2001) – additionally caused by weakened bonding to these arenas as noted by Hirschi (1969).

Schools and communities have personified a crucial setting in which students interact socially, mentally, and physically. Within adolescent development, school and communal environments are the contexts in which a student's time is mostly spent. Although they physically differ, these environments exhibit the main social atmospheres one adapts social skills, routines and characteristics through. With these statements, this document posed the questions of what happens if an environment fails to provide a quality atmosphere (due to disorganization), and asks if the effects of those disorganized neighborhoods can be attenuated so that bonds to other institutions can form and possibly strengthen?

Results from the sample give us mixed results. Findings suggest there is attenuating effect regarding school bonding and academic performance on bonding Further, populations such as African Americans and female adolescents show higher bonding to school than their majority counterparts (gender and race respectfully).

With limitations considered, this document gives light to the importance of the two focal environments adolescents are given access to throughout their day –

neighborhoods and schools. Although further exploration is implored, this document is fundamental to understanding the connection between environments and effects on school connectedness. Pending mentioned modifications to models, this document offers an introductory look at the interconnectivity of school and communities for adolescents.

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