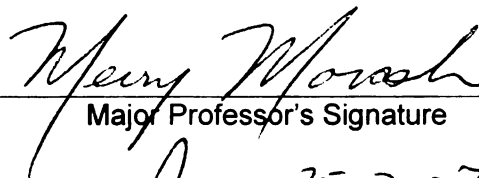This is to certify that the
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STUDENTS

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AN ECOLOGICAL PREDICTION MODEL OF BULLYING BEHAVIORS AMONG
SOUTH KOREAN MIDDLE SCHOOL STUDENTS

By

Chang-Hun Lee

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
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ABSTRACT

AN ECOLOGICAL PREDICTION MODEL OF BULLYING BEHAVIORS AMONG
SOUTH KOREAN MIDDLE SCHOOL STUDENTS

By

Chang-Hun Lee

This study is designed to address shortcomings found in bullying

literature. Specifically, this study applies ecological system theory

(Bronfenbrenner, 1979) as a theoretical framework to identify different levels of

factors influencing bullying behavior in schools. These levels include the

microsystem, mesosystem, exosystem, and macrosystem levels. In addition, this

study develops four measures of peer influence relevant to bullying behavior in

school, and improves the definition of bullying and its measures by including

severity, duration, and visibility dimensions of bullying. Using a multiple cluster

sampling method, this study randomly selected 36 classes from 6 different areas

of South Korea. Data were collected from 1238 middle school students in those

selected classes in 2007. In the first phase of the analysis, basic statistical

analyses, hypothesis testing with OLS regression, and sensitivity analysis were

performed. In the second phase, the second-order confirmatory factor analysis

and structural equation modeling were performed. A multiple group analysis for

different types of bullying was attempted. Findings suggest the utility of the

ecological approach, and that this model accounted for a high portion of variance in bullying. All of the ecological systems as well as individual traits were found to be statistically significant influences on bullying either directly or indirectly. Based on the findings, policy implications and future research are discussed.

To my dear wife, Jung-Mi Kim, and my precious son, Eugene Kim Lee

ACKNOWLEDGEMENT

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CHAPTER 1

INTRODUCTION

I. INTRODUCTION

Bullying has devastating consequences. Some victims take their lives, and others seek revenge. According to the 2005 Youth Statistics by the Korean National Statistical Office, the suicide rate among 10,000 youths in Korea dramatically increased from 3.8 to 8.2 from 2000 to 2005 (KNSO, 2005). In 2000, suicide was the third leading cause of death of teenagers in Korea after traffic accidents and cancer (Choi, 2003), but in 2003, suicide became the second leading cause of death (KNSO, 2005). A large portion (about 54.2%) of those who took their lives were reported victims of bullying in their schools (Kim, Koh, & Leventhal, 2005).

In the United States, school shootings have been reported as a disastrous response to bullying in schools (Leary, Kowalski, Smith, & Phillips, 2003; Verlinden, Hersen, & Thomas, 2000). A total of 220 school shootings occurred between 1994 and 1999, and the number of victims killed by the shootings reached 253 (Anderson, Kaufman, Simon, Barrios, Paulozzi, Ryan, Hammond, Modzeleski, Feucht, & Potter, 2001). It is difficult to compare prevalence rates of bullying for different countries, because of different definitions

of bullying and different reflection time periods used in studies (Farrington, 1993; Kim, 2004; Smith, Cowie, Olafsson, & Liefooghe, 2002). Although comparisons are difficult, there is evidence that bullying has became a more common type of school violence in many countries around the world (for review, see Olweus, 1993, 1995).

One nationwide study to determine the prevalence of bullying in the U.S. showed that it affected 29.9% of students in middle schools; 13% of the students were bullies, 10.6% victims, and 6.3% both bullies and victims (Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001). South Korea is not an exception to this pattern. Using a definition of bullying similar to the one used in Olweus' studies, a study found that, in South Korean middle schools, the prevalence rate for bullying has increased dramatically between the late 1990s and 2006. In 2006, 12% of youths were bullies, 5.3% of them were victims, and 7.2% of them were both bullies and victims (Yang, Kim, Kim, Shin, & Yoon, 2006).

These startling figures provoke a number of questions. Why are children bullying classmates? What causes bullying? Who are the bullies? Is there any effective intervention for bullying in schools? To answer these questions, many researchers from different areas of academics, such as psychology, psychopathology, and sociology, have invested their energy in carrying out research. The result is a large body of literature that investigates factors related to bullying behavior in school. Those factors found to be significant include individual personality and psychological traits (Ando, Asakura, & Simons-Morton, 2005; Bosworh, Espelage, & Simon, 1999; Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004; Espelage & Swearer, 2003; Gladstone, Parker, & Malhi, 2006;

Haynie, Nansel, Eithel, Crump, Saylor, Yu, & Simons-Morton, 2001; Unnever & Cornell, 2003), harsh physical discipline, inconsistent parenting, and family experiences (Batsche & Knoff, 1994; Bowers, Smith, & Binney, 1994; Christie-Mizell, 2003; Curtner-Smith, Culp, Scheib, Owen, Tilley, Murphy, Parkman, & Coleman, 2006; Flouri & Buchanan, 2003; Gladstone et al., 2006; Shields & Cicchetti, 2001), membership in peer groups and friendship networks that encourage bullying (Bosworh et al., 1999; Boulton & Smith, 1994; Boulton, Trueman, Chau, Whitehand, & Amatya, 1999; Buhs, Ladd, & Herald, 2006; Espelage, Bosworh, & Simon, 2000; Gest, Graham-Bermann, & Hartup, 2001; Haselager, Hartup, Lieshout, & Riksen-Walraven, 1998; Haynie, 2001; Hodges, Boivin, Vitaro, & Bukowski, 1999; Hodges, Malone, & Perry, 1997; Huttunen, Salmivalli, & Lagerspetz, 1996; Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004; Poulin, Cillessen, Hubbard, Coie, Dodge, & Schwartz, 1997; Salmivalli, Huttunen, & Lagerspetz, 1997; Salmivalli, Lappalainen, & Lagerspetz, 1998), and school environments and community characteristics (Farrington, 1993; Hoshino, 2001; Laub & Lauritsen, 1998; Menesini, Melan, & Pignatti, 2000; Naito & Gielen, 2005; Twemlow, Fonagy, & Sacco, 2001).

The outcomes of prior research, however, are somewhat disappointing for several reasons. First, bullying in school has not been featured in the criminological literature, especially in the United States (Batsche & Knoff, 1994; Espelage & Swearer, 2003; Farrington, 1993; Spivak & Prothrow-Stith, 2001). Second, there is lack of a theoretical framework to explain the causal linkages between bullying and the various facilitating influences on bullying (Espelage & Swearer, 2003; Morrison, 2002; Sullivan, Cleary, & Sullivan, 2004; Swearer &

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Doll, 2001). Third, bullying has not been understood within social contexts, particularly school settings that are the ecological environment where it occurs (Morrison, 2001; Olweus, 1993; Smith & Brain, 2000). Fourth, several aspects of bullying are left underinvestigated or uninvestigated by researchers. Examples are teacher's involvement in bullying phenomenon, school climate (Espelage & Swearer, 2003; Farrington, 1993) and quality of friendship networks (e.g., Naylor & Cowie, 1999; Pakaslahti & Keltikangas-Jarvinen, 2001; Park, 2002). These shortcomings are discussed in detail in a later section of Chapter 2, "Shortcomings of Research on Bullying."

This dissertation is designed to address shortcomings in bullying literature. Specifically, the proposed research will apply ecological system theory (Bronfenbrenner, 1979) as a theoretical framework to identify different levels of factors influencing bullying behavior in schools. These levels include the microsystem, mesosystem, exosystem, and macrosystem levels. These key concepts from ecological system theory will be defined and discussed in the section, Ecological Model of Bullying in Schools, in Chapter 2.

This study develops four measures of peer influence relevant to bullying phenomenon in schools. These four measures are power dynamics, level of difference-acceptance, coercion of public self, and pseudo friendship. Also children's interactions with teachers and parents are included as an important microsystem in this ecological model. In addition, as a part of mesosystems, parental communication with teachers and peers is studied, and school climate, which has been neglected in prior empirical work, is also included as a part of the exosystem in the ecological model.

Finally, this study uses an improved categorization of bullying behaviors. Traditional typologies of bullying focus on physical, verbal, and relational (or direct vs. indirect) dimension of bullying behaviors. This study adds temporal, visibility and severity elements to the traditional bullying typology. It will consider chronic/severe/overt (e.g., 왕따 or *wangtta*), non-chronic/severe/overt or chronic/moderate/covert (e.g., 반따 or *bantta*), and non-chronic/moderate/covert bullying (e.g., 따 or *tta*) in Korean schools[1].

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[1] The Korean terms for bullying behavior are provided since they are used in the Korean scholarly literature.

II. A BRIEF HISTORIC OVERVIEW OF BULLYING STUDIES

The phenomenon of bullying was first investigated by the Norwegian scholar, Heinemann, in 1973 (for review, see Olweus, 1993; Smith et al., 2002). Heinemann used the Norwegian term *mobbning* to refer to sudden group violence against individuals (Heinemann, 1973). Shortly after, the term *bullying* was first used by a prominent bullying scholar, Dan Olweus, in 1978. In his book, *Aggression in the Schools: Bullies and Whipping Boys*, he suggested that bullying was a one-on-one physical attack of a stronger child against a weaker child (Olweus, 1978). Later, Olweus incorporated verbal aggression and group action into the previous bullying concept, and suggested that bullying is repeated exposure to negative actions against an individual by one or more individuals, and that the negative actions could involve aggressive behaviors as well as aggressive words (Olweus, 1993, p 9). Since the initial work by Heinemann and Olweus, Scandinavian research on bullying continued to flourish throughout the 1970s and 1980s in Norway, Denmark, Sweden, and Finland, and this tradition spread to other European countries, such as England, Germany, and Spain (for review, see Farrington, 1993; Olweus, 1993).

During the late 1980s and early 1990s, in some Asian countries, especially in Japan, researchers started investigating the phenomenon of bullying in schools (e.g., Matsueda & Heimer, 1987; Naito, 1990; Naito & Gielen, 2005). It was more recent that scholars in South Korea, Turkey and the United States began to carry out research to understand the bullying phenomenon. Especially in South Korea, the phenomenon of bullying in schools has drawn academic

attention since the media first used the term *Ijime*, a Japanese term for bullying,

in the middle of the 1990s, and since then the term has become popular in

Korean society (Ahn, 2002; Farrington, 1993; KEDI, 1998; Kepenekci & Cinkir,

2006; Kim, 2004; Park & Son, 1998; Seo & Han, 2004).

III. SIGNIFICANCE OF BULLYING AND IMPORTANCE OF THE CURRENT STUDY

1. Prevalence and Incidence Rates of Bullying in Schools

A typical approach to understanding the phenomenon of bullying in schools is to see how many students are involved as perpetrators or victims of bullying behaviors during a specified period of time. Even though there are contradictions between definitions of bullying across different studies, bullying and victimization rates could provide insightful information about the seriousness and significance of the bullying phenomenon.

Criminologists commonly focus on prevalence and incidence rates as reflections of the scope of illegal behavior, including bullying. Prevalence is typically defined as "the number of different persons committing crimes or the participation rate" (Farrington, 1986, p 189). In contrast, incidence of offending is defined as "the rate at which offenders commit crimes or the individual crime rate" (Farrington, 1986, p 214). Thus, incidence is the ratio of the number of incidents in a period of time to the number of people being studied.

Studies of the prevalence of bullying found that in some schools everyday a significant number of students experience bullying. For instance, the U.S. Department of Justice reported that one out of every four students experiences bullying in schools (for review of further analysis, see Liepe-Levinson & Levinson, 2005). Using data collected from 4,263 students in a Maryland school district, Haynie and her colleagues (2001) found that 7.4% of students reported acting as bullies, 30.9% of students reported bullying victimization, and more than one half of the bullies reported that they also have been bullied. Very similar prevalence

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rates have been found in other U.S. studies. Based on analysis of nation wide data from 15,686 students in 6th through 10th grades, Nansel and others (2001) found that 13% of students were bullies, 10.6% of them were victims, and 6.3% of students were bullies and victims. More recently, Seals and Young (2003) found that 24% of 454 public school students were involved with either or both bullying and victimization (Seals & Young, 2003). Similar rates were found in a study of a predominantly Latino and black populated, U.S., low socioeconomic, urban community, where 22% of youths were involved in bullying behaviors, 7% of the 6th graders were bullies, 9% of them were victims, and 6% of them were both bullies and victims (Juvonen, Graham, & Schuster, 2003). These results indicate that, in terms of prevalence, the U.S. rates do not seem to vary by demographic characteristics of the students.

There seems to be variation in prevalence rates of bullying in different socio-cultural environments. Compared to the United States, in Japan, research has revealed a slightly higher rate of victimization in primary school. With a nationwide sample, the Japanese Council for Research on Children and Students' Problematic Behaviors found that 22% of primary school students (4th to 6th graders), 13% of junior high school students, and 4% of senior high school students reported being victims of bullying (for review, see Naito & Gielen, 2005). Korean students seem to enjoy relatively lower rates of victimization than those in Japan and the United States. A recent study of 1,344 students showed that 12% of 4th graders bullied others, 5.3% of them were victimized, and 7.2% of them were both bullies and victims (Yang et al., 2006).

Comparison of prevalence rates of bullying across different studies and

different countries is somewhat problematic. There is a considerable amount of

discrepancy between prevalence rates of bullying in different countries, and even

between different studies in a country. This discrepancy stems from different

definitions of bullying behaviors (Kim, 2004; Smith et al., 2002), different

reflection time periods considered by research subjects (Farrington, 1993), and

different systems of school semesters (Naito & Gielen, 2005). It also could be

due to actual differences.

Despite these difficulties, however, studies of prevalence of bullying in

various countries have revealed that bullying and being bullied by classmates in

schools are widespread phenomenon. Every school day, roughly between 20 and

30 percent of students are involved with bullying behaviors in many countries,

and about 10 to 15 percent of them were bullies and roughly 10 percent of them

were victims of bullying. These figures on students' involvement in the bullying

phenomenon indicate the significance of bullying in contemporary school

environments.

2. Outcomes of Bullying

Aftermaths of bullying phenomenon can be categorized into two types:

outcomes in terms of bullies and victims. Bullying produces devastating

outcomes for victims. Victims suffer from physical and psychological health

problems including depression and anxiety in childhood (Fekkes, Pijpers,

Fredriks, Vogels, & Verloove-Vanhorick, 2006; Rigby, 1998) as well as in

adulthood (Gladstone et al., 2006), suicidal ideation (Liepe-Levinson & Levinson,

2005; Park, Schepp, Jang, & Koo, 2006), especially among girls (Kim et al.,

2005), and psychosocial maladjustment to school, such as fighting, drinking, smoking, academic achievement problems, difficulty in making friends, and alienation (Nansel et al., 2001).

For bullies, researchers have found that bullying behavior is a strong and significant predictor of delinquency and violent crime during puberty and early adulthood. Research conducted in Hong Kong found that unaddressed bullying behavior leads to violent behavior during the school years and adulthood (Wong, 2004). Similarly, Andershed and his colleagues found that in Sweden bullying behavior in schools predicted a higher likelihood of engagement in street violence (Andershed, Kerr, & Stattin, 2001). Bullying behavior is also a strong predictor of antisocial behavior and drop-out from school (Morrison, 2002; Rigby & Cox, 1996). Other researchers suggested that bullying behavior in schools is easily aggravated into more severe criminal behavior in and out of school environments (Kinlock, Battjes, & Gordon, 2004).

3. Importance of the Current Study

As studies on prevalence rates of bullying phenomenon and seriousness of outcomes of bullying behaviors and victimization show, it is of importance that researchers adequately understand bullying in schools and provide appropriate methods to deter it, or at least reduce it to some extent. Since bullying has devastating consequences, such as suicide or school shootings, adequate understanding and appropriate prevention methods will greatly benefit children and society.

In addition, the existing Korean literature on bullying does not provide a

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tool to allow prediction of bullying behavior, because there is no attempt made to apply any theoretical model to analysis of empirical data. Most studies have simply correlated characteristics of society and culture with individual bullying behaviors and victimization without providing any theoretical rationale for expecting an association. For example, one study correlated living in urban/rural areas with bullying behavior and victimization without a theoretical framework (Yang, 2005). Another study correlated the number of game rooms and karaoke stores with bullying behavior and victimization, and argued that capitalized society and contemporary Korean cultural emphasis on seeking pleasure produce an increase of bullying in school (Shin, 2000). Unfortunately, in the latter study, there was no discussion of whether game rooms and karaoke stores are valid indicators of the levels of capitalization and pleasure-seeking in a culture.

Further, in South Korea, most bullying studies have a disjuncture between the literature review and actual statistical analysis of data. In other words, the studies focus on previous studies that suggest a holistic explanation of the bullying phenomenon, but the data collection and analysis do not adequately measure and consider the range of potential influences. Most of the studies reviewed suggested that bullying has been influenced by contemporary societal change from collectivistic to individualistic culture, problematic philosophies of education and educational systems, or violent and sexual content of the media. But none of them accurately measured these aspects of the environment (e.g., Lee, 2003; Lee & Kim, 2000; Park, 2003).

The lack of adequate empirical research in South Korea makes it difficult for researchers as well as educational practitioners to prevent, or at least

alleviate, bullying problems in Korean schools. In addition, to the extent that bullying is a precursor to other types of delinquency, adequate understanding of bullying phenomenon may also result in prevention of other illegal behavior. Thus, it is of importance that researchers conduct an adequate study to promote better understanding of the bullying phenomenon, and this effort will greatly improve the quality of education in schools as well as quality of life among children.

CHAPTER 2

LITERATURE REVIEW

I. DEFINITION OF BULLYING

Defining bullying is a difficult task. A consensus on the definition of bullying has not yet been achieved among researchers. For example, Coloroso (2003) defined bullying as "a conscious, deliberate hostile activity intended to terrorize and harm others through the threat of further aggression" (p13). Farrington (1993) described bullying as "repeated oppression, psychological or physical, of a less powerful person by a more powerful one" (p 381).

The most widely used definition of bullying was developed by Olweus. Olweus (1993) wrote "a person is bullied when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other persons" (pp 8 – 10). In this definition, there are three elements, negative actions, repetition, and imbalance in power. The negative actions include intentional infliction of injury or discomfort on another, which is carried out through physical aggression or aggressive words, for example threatening, taunting, teasing, and name calling. These actions should be repeated to constitute bullying, and there should

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be imbalance of power between inflictors (more powerful) and victims (less powerful). More recently, it is recognized that there is a continuum between being a bully and being a victim. Espelage and Swearer (2003) found that some portion of bullies also simultaneously suffer from victimization by others.

Even though Olweus' definition is most often used, bullying studies in different countries use this definition with some degree of dissatisfaction. For example, Japanese researchers expressed dissatisfaction with Olweus' definition, based on lack of sensitivity to socio-cultural differences in the nature of school bullying. Naito and Gielen (2005) found that Japanese bullying participants and onlookers perceived bullying more as psychological intimidation rather than physical violence, and argued that in the Japanese context, bullying is repeated negative behavior that dehumanizes others either physically or psychologically. Using a sample of 1245 8 and 14 year-old students from 14 countries, Smith et al. (2002) also found that countries differed in what is perceived as bullying. Especially in Japan, China, Thailand, and Norway, bullying is perceived as less physically aggressive, but more socially manipulative aggressive behaviors (Smith et al., 2002). In addition, an acute cultural difference in verbal aggression has also been found in research. Naito and Gielen (2005) argued that it is verbal aggression in Western countries when a person calls another names *openly*, but in Japan, "name whispering" behind the victim's back would be verbal aggression.

Typical definitions of bullying used in Korean research emphasize the importance of social isolation as an outcome of bullying behavior. Thus, the terms used to refer to bullying communicate collective ostracism, collective social exclusion, or collective harassment (Ahn, 2002; KDE, 1999; Lee, 2000; Shin,

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2000). The term, *Wangtta*, has been used to include all types of bullying behaviors, such as social ostracism and physical and verbal harassment (Park & Son, 1998; Shim, 2004). Originally the term Wangtta came from the noun, *tta*, which means ostracizing others. The prefix, *wang*, originally means a king, but in this case, it means big or worst.

A replication study of the research of Smith et al. (2002) was recently conducted in Korea. This study found that the most relevant and concurrent Korean term with the English term *bullying* was 'Wangtta,' and that the most important aspects of Wangtta (in the order of statistics significance) were social exclusion, verbal bullying, and physical bullying (Shim, 2004).

The current study conceptualizes bullying as having subcategories, such as Wangtta (see Table 2), and defines bullying as repeated behaviors by one or more individuals that are intended to impose psychological and physical harms to and social isolation of one or more victims through physical, verbal and relational aggression for an extended period of time. This definition goes beyond the Olweus' definition and the definition of the Japanese term *Ijime* in two ways, by considering not only severity, but also visibility and duration of bullying behaviors. To discuss the expansion of the definition in detail, first, the dimensionality of bullying is discussed in the next section, and then the severity, visibility and duration aspects are discussed in a later section.

1. Physical, Verbal, and Relational Bullying

According to Dishion, French and Patterson (1995), there are three aspects of aggression, *dimensionality*, *continuity*, and *progressions*.

Dimensionality refers to variation in visibility (visible, or invisible (or relational)), physicality (physical vs. non-physical), and time (early vs. late onset). *Continuity* recognizes persistence of aggression in early childhood through puberty into early adulthood, and *progressions* refers to escalation of noncompliant behavior to temper tantrums to violence (Dishion, French, & Patterson, 1995). Some bullying researchers consider only the dimensionality of bullying and categorize bullying into physical, verbal, and relational bullying (for example, Olweus, 2003). Other researchers categorize bullying as either direct or indirect (for example, Bjorkqvist, Lagerspetz, & Kaukiainen, 1992). Direct bullying includes direct physical and direct verbal violence, and indirect bullying includes relational bullying (see also, Carney, 2005; Coloroso, 2003). As Table 1 shows, some definitions are overlapped and used interchangeably. For example, physical bullying typically refers to visible and direct bullying behaviors that physically harm others, and verbal bullying typically refers to visible and direct verbal violence. In contrast, relational bullying is typically characterized as invisible and indirect harm to others through damaging their interpersonal relationships.

Table 1. Typical Categorization of Bullying

		Physicality	
		Physical	Non-physical (or verbal)
Visibility	Invisible		Indirect/relational
	Visible	Direct physical	Direct verbal

So far in bullying studies, however, an operational definition of bullying

has been limited to measures of the dimensionality aspect of bullying behavior (typically physical, verbal and relational aggression). In this operational definition, continuity and progression dimensions have been ignored by researchers. This limitation was partly due to the difficulty of getting longitudinal data to assess the continuity and progression aspects of aggression. In addition, lack of consensus on the definition of bullying also contributed to this limitation. Bullying is typically defined with three factors, negative action, imbalance of power, and repetition (Olweus, 1991, 1993, 1995). But there is no clear way to establish repetition of bullying over time. These problems contribute to difficulties with interpreting findings about differences in the prevalence of bullying in different schools and countries (Farrington, 1993; Naito & Gielen, 2005; Smith et al., 2002). More relevant to the present study, they also raise questions about the appropriate measure of bullying in Korea.

2. Chronic vs. Non-chronic and Severe/overt vs. Moderate/covert Bullying

The present study considers the persistence of bullying behavior rather than the continuity of bullying, which is usually conceptualized as the onset of bullying behavior (Dishion et al., 1995). Since bullying is defined as "repeated" aggression, duration of aggressive behavior should be recognized by the operational definition. This time dimension of bullying behavior allows differentiation of chronic bullying from non-chronic situational bullying behavior. Research found that although bullying may affect a large number of children, only a small portion of students were chronically and persistently victimizing others and victimized by others (Boulton & Smith, 1994; for review, see Graham &

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Juvonen, 1998; Salmivalli et al., 1998; Smith & Brain, 2000).

The Korean Department of Education published a study on bullying and its prevention policy in 1999. In this report, collective ostracism refers to "inflicting harms to certain students *for more than two weeks* by one or more students through psychological and verbal aggression, money extortion, or imposing physical harm." Other Korean literature suggests different types of bullying victims and bullying behaviors (Ahn, 2002; Coloroso, 2003, p 21; KDE, 1999; KEDI, 1998; Kim, 2001). For example, Ahn (2002), based on a literature review, suggested two types of bullying victims; 은따 or *euntta* and 전따 or *jeontta*, and the term *wangtta* was used to refer to both types of bullying victimizations. Others categorized bullying victims as 찌지리 or *jijiri* (those who are perceived as foolish), *bantta* (those who are bullied by classmates in a class), and *jeotta* (those who are bullied by all students of a school) (KEDI, 1998; Kim, 2004; Shim, 2004). Still others use two categories; *tta* (those who are bullied at minor/moderate level of aggression and short term exclusion) or *wangtta* (those who are bullied at severe level of aggression for a relatively long period of time) (KDE, 1999).

These different types of victims and bullying behaviors could be distinguished by different levels of severity, visibility and duration of bullying. Bullying behaviors are not only indicated by harshness and openness of the behavior, but also by the extent and duration of social isolation and rejection. Thus, chronic bullying and non-chronic bullying would differ in visibility, physicality/severity, and duration. In other words, bullies use different forms of aggression and social isolation for different types of victims for different lengths of time with different levels of openness. Table 2 shows different types of victims

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and the related bullying behaviors based on the expanded definition of bullying with temporal, severity and visibility elements added together.

Table 2. Expanded Definition of Bullying: Temporal and Visibility Elements Added to the Traditional Physicality/Severity Dimension of Bullying Behavior

	Severe/Overt	Moderate/Minor/Covert
Chronic	*wangtta/jeontta*	*bantta/euntta*
Non-Chronic	*bantta/euntta*	*tta*

It is important to distinguish different types of bullying behaviors based on temporal, severity and visibility elements, because this categorization will distinguish use of different levels of physical, verbal, and relational aggression with different levels of openness for different types of victims (e.g., Kwon, 1999). For instance, the *wangtta/jeontta* group will be the most severely, openly and chronically victimized students by other students through all types of physical, verbal, and relational aggression. Sometimes *wangtta/jeontta* status ends when the *wangtta/jeontta* students graduate from schools and move up to higher grades. In most cases, however, the *wangtta/jeontta* status remains through the entire primary, middle, and high school years (KEDI, 1998). This is why parents and other school professionals use transferring those students to another school as a solution for bullying victimization. Compared to this, the *tta* group may suffer from more open covert minor or moderate relational aggression or covert minor verbal aggression in a class for a short period of time, such as one semester or until the emergence of a new *tta* victim in the class (KEDI, 1998). Thus, the

identification of level of severity, visibility and temporal duration across different types of bullying may provide different approaches in school policy and programs to address bullying. In addition, this identification of different forms of aggressive behaviors may help to understand what types of students using what types of bullying behaviors become more anti-social and deviant adolescents and adults.

II. REVIEW OF PREVIOUS STUDIES OF BULLYING

1. Thematic Overview of Previous Bullying Studies

Previous bullying studies have several focal concerns. In addition to the prevalence and outcomes of bullying discussed in the previous chapter, there are four more major topics: types of bullying behaviors, roles-played in bullying situations and their characteristics, correlates of bullying, and the social network approach to understanding bullying. In this section, studies within each of the four additional topic areas are reviewed in detail.

Specifically, the literature on types of bullying behavior and roles played in bullying situations will be examined so that conclusions can be drawn about how to define and measure bullying behavior in this dissertation. The correlates of bullying research will be reviewed to identify factors influencing bullying behaviors, e.g., individual traits, perceptions of and experiences with parents, teachers, and school environments. Those identified factors will be used in the ecological prediction model developed by this study. The literature on the social network approach to understanding bullying will be used to develop measures of peer influences. In particular, this part of the review is the basis for advancing a measure of the pseudo friendship network to indicate the quality of friendship, as a replacement for previous measures (e.g., mutuality, popularity, centrality, or similarity) used in social network studies of bullying.

A. Types of Bullying Behaviors

The most common categorization of bullying behaviors was borrowed

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from a typology of aggressive behaviors. When Olweus first used the term, bullying, to refer to a one-on-one physical attack of a stronger child against a weaker child, he only considered physical aggression (Olweus, 1978). Later he expanded the definition of bullying to capture verbal aggression, group action and repeated exposure to negative actions against individuals, and then he categorized the bullying behaviors into physical and verbal aggression (Olweus, 1993). Recent bullying studies have used a three dimensional approach to bullying behaviors, physical, verbal, and indirect aggression (Bjorkqvist et al., 1992). Indirect aggression refers to aggressive behaviors intended to damage victims' social relationships through social isolation and exclusion. The examples of this type of aggression include gossiping and spreading rumors, and social exclusion using third parties (Bjorkqvist et al., 1992). Some researchers use the term *social* aggression (Carney, 2005), and others use the term *relational* aggression (Coloroso, 2003) to refer to indirect aggression.

B. Roles-played in Bullying Situations and their Characteristics

The typical and traditional categorization of roles played in bullying situations is based on the distinction between youths who act as bullies, who are victims, and who bully others but who also are victimized by bullies (Haynie et al., 2001; Juvonen et al., 2003). Haynie et al. (2001) found that members of the three groups share some common characteristics, but also are distinct in other ways, in terms of involvement in problem behaviors, self-control, deviance acceptance, deviant peer influences, and depressive symptoms. For example, Juvonen et al. (2003) found that bullies are psychologically the strongest students who have

high levels of self-esteem and enjoy high social status among classmates (see also Mouttapa et al., 2004), and that victims were distressed and socially marginalized. Olweus (1993; 1995) argued that bullies typically have aggressiveness and physical strength, and that victims usually suffer from loneliness, anxiety and physical weakness. According to Kim and his colleagues, the individual who is both a bully and a victim suffers the most serious suicidal ideation compared to youths who are either a bully or a victim (Kim et al., 2005).

Research has also recognized the importance of the psychosocial function of non-participants or indirect participants in bullying. For example, Coloroso (2003) suggested that bystanders who take no action against bullying or who support it have a tremendous effect on bullying because they tacitly allow deviant behaviors of bullies in schools (Coloroso, 2003; see also Harris & Petrie, 2003).

In some studies, the bystanders were subdivided into different types of students according to more specific roles they play in bullying situations. For example, Salmivalli and her colleagues (1997) argued that reinforcement of bullying behavior through a peer group network is one of the most important factors supporting bullying, and that the reinforcement could come from groups who were partly involved with actual bullying behaviors (assistant groups) or from groups who were not considered to be active participants in bullying behaviors, but who were emotionally supporting the behaviors (reinforcer groups). Those who do nothing when they witness bullying are referred to as the outsider group. Defender groups are those who become actively involve with protection of victims from bullying behaviors. Six participant roles, thus, are bully, assistant,

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reinforcer, outsider, defender, and victim (Andreou & Metallidou, 2004; Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996).

Olweus's (2003) categorization of participant's roles is also consistent with this previous categorization, 'bully,' 'followers, supporters but passive bully,' 'passive supporters but possible bully,' 'disengaged onlookers,' 'possible defenders,' 'defenders of the victim,' and 'victim' (Olweus, 2003). According to Olweus (2003), 'followers and supporters but passive bullies' are those who will not act as bullies but who will assist bullies (similar to the assistant group), and 'passive supporters but possible bullies' are those who might become bullies (similar to the reinforcer group). 'Disengaged onlookers' are similar to the outsider group and 'possible defenders' and 'defenders' are similar to the defender group in the previous categorization. Youth in the defender group enjoy the highest sociometric status among classmates (Salmivalli et al., 1996).

In Japan, instead of assistant, reinforcer and outsider groups, slightly different types of participant roles were identified. According to Morita and Kiyonaga (1994), some students were just amused by the bullying situation (audience group), and some acted as if they do not know the bullying victims in class (bystander group) (Morita & Kiyonaga, 1994). Students who enjoy watching bullying or who ignore bullying behavior are similar to the reinforcer and outsider groups. However, the significance of identifying bullying as "fun seeking" behavior among members of the audience group should be noted, and this will be discussed more fully in the later section.

In Korea, types of victims have been one of the main concerns for studies on bullying (for review, see Ah, Jeong, & Cha, 2005). Based on analyses of

languages and terms used among youths in Korea, studies suggested that there were two major types of victim; *euntta* and *jeontta* (Ahn, 2002; Kim, 2004). The term *tta* refers to overall behaviors that ostracize, bully, and harass others physically and emotionally, and also refers to the victim of those behaviors. As a combination of a prefix and *'tta,'* e*untta* refers to victims who are covertly ostracized (the term *eun* refers to 'covert'), and *jeontta* refers to those who are overtly victimized not only by others in a class, but by all students in a school (the term *jeon* refers to 'entire').

Aforementioned findings indicate the existence of different types of bullying behaviors based on levels of severity (types of bullying behavior, such as physical, verbal or relational bullying), involvement (different roles played in bullying), visibility (covert vs. overt bullying), and duration (chronic vs. non-chronic bullying victims). These findings were used to replace the traditional definition of bullying with a new expanded definition of bullying, which is used in this dissertation. The suggested new definition of bullying reflects three aspects of bullying behavior; severity, visibility, and duration (see the section, Definition of Bullying, p 14 – 21). Research could also be done on which youth take which roles, but this is not the main focus of this dissertation, which instead develops and tests theory to explain the frequency and nature of youths' bullying behavior.

C. Correlates of Bullying Behaviors

Studies of correlates of bullying focus on psychological, psychosocial, psychopathological and sociological characteristics of individuals, families and schools. Each of these types of correlates will be considered in the following

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sections.

1) Psychological, Psychosocial and Psychopathological Correlates

Studies focusing on individual psychological and psychopathological differences stress the importance of intra- and inter-individual traits. Those individual traits found to be significantly associated with bullying behavior include self-esteem (Batsche & Knoff, 1994; Smith & Brain, 2000), anger and aggression (Bosworh et al., 1999), ADHD and low self-control (Unnever & Cornell, 2003), depression and deviance acceptance (Haynie et al., 2001), anxiety and empathy (Espelage & Swearer, 2003), illness, disability and temperament (Gladstone et al., 2006), and dominance and impulsivity (Lee, 2000). Shyness and withdrawal behavior are related to increased victimization by bullying (Dill et al., 2004).

Among these, self-esteem has been found to have inconsistent effects on bullies and victims. Specifically, studies found contradicting evidence for relationships between self-esteem and bullying behavior and between self-esteem and victimization. Batsche and Knoff (1994) found that bullies have higher or average levels of self-esteem compared to lower levels of self-esteem among victims or bystanders, but others found that bullies, especially females, have low levels of self-esteem (Rigby & Cox, 1996) or average levels of self-esteem (Seals & Young, 2003). [2]

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[2] Unlike the contradicting evidence for the relationship between self-esteem and bullying behavior, a consistent finding across different studies indicates that victims of bullying behaviors have low levels of self-esteem (Rigby & Slee, 1993; Smith & Brain, 2000).

Psychosocial factors associated with bullying behaviors were also identified by numerous studies. Those factors are self-efficacy, academic and social cognition (Andreou & Metallidou, 2004), normative beliefs about bullying and social skill deficits (Bosworh et al., 1999; Espelage & Swearer, 2003), low levels of confidence in using nonviolent strategies (Bosworh et al., 1999), and positive attitudes towards bullying (Bentley & Li, 1995; Boulton, Trueman, & Flemington, 2002; Shin, 2000). For example, a recent study found that psychosocial factors, such as attitude in school; self-control of aggressiveness and impulsiveness; self-assertive efficacy against bullying; and euphemistic thinking were associated with all types of bullying (Ando et al., 2005).

2) Sociological and Social Psychological Correlates

Factors that have been given considerable attention by researchers are social psychological variables, such as experiences with family, peers, and community. The effects of parents and their parenting skills on bullying behaviors have been tested based on the idea that children internalize their family environments and that this internalization affects development of a self-concept and self-control. Studies, for instance, suggested that negative parental experiences develop negative self-concepts among children, and in turn they influence bullying behavior (Christie-Mizell, 2003; Curtner-Smith et al., 2006; Flouri & Buchanan, 2003). Other researchers argued that parental maltreatment causes emotional dysregulation, i.e., low self-control, and in turn causes more physical bullying (Shields & Cicchetti, 2001). The types of parenting thought to affect bullying behavior are authoritarian parenting using physical means of

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discipline (Gladstone et al., 2006; Lee & Kim, 2000), hostile, rejecting and inconsistent parenting, little supervision, parenting that leads to poor problem-solving skills, and encouragement of striking-back against aggressors (Batsche & Knoff, 1994).

It also should be noted that *perceived* parenting by children is an important predictor of children's behavioral pattern. Using the quota sampling method to collect data from 20 students who were bullies, 20 victims, and 20 who were both bullies and victims, Browers and others (1994) found distinct differences between those groups in terms of family system, family relations, and parenting styles. Their findings suggested that children's perspective on family relations, rather than parents' perception of family relations, is an important influence on their behaviors (Bowers et al., 1994).

Since bullying is a phenomenon that occurs within peer relationships, relationships among classmates have been extensively investigated. For example, Buhs et al. (2006) found that the best predictor of bullying victimization is peer exclusion and rejection within peer groups. Also the influence of deviant peers has been found to be a significant predictor of bullying behavior (Haynie et al., 2001). Recent research tends to empirically measure the peer relationship using social network analysis (SNA), and this area will be discussed in detail in the next section, "The Social Network Approach to Explaining Bullying."

School and community environments are likely important influences on individuals who engage in the various behaviors that carry out and support bullying behaviors. As noted previously, these factors, however, are by far the most underinvestigated. Japanese scholars emphasized the significance of

norms and value systems among students, teachers' moral authority, and the existence of collective punishment in classes as influences on bullying behaviors (Masataka, 1998; Naito & Gielen, 2005; Tai, 2001). In addition, a few scholars have argued that community characteristics have distal but significant effects on bullying behavior in schools. Farrington (1993), for example, wrote that bullying is more common in big inner cities where social disorganization is prominent (see also Laub & Lauritsen, 1998). These explanations linking school and community environment to bullying, however, have not been empirically tested.

D. The Social Network Approach to Explaining Bullying

Since an early application of the social network analysis (SNA) approach to bullying (i.e., Cairns, Cairns, Neckerman, Gest, & Gariepy, 1988), SNA became a popular method to understand peer dynamics of bullying behavior among classmates. The core argument is that peer rejection, acceptance, and affiliation through friendship networks determine the occurrence of and involvement in bullying behaviors and the prevention of victimization. Gest et al. (2001) argued that changes of friendship, measured by sociometric status, centrality, and mutuality, cause changes in level of acceptance and rejection within the peer group, which in turn cause aggressive behaviors against those who precipitate the change of friendship. Currently, there are four focuses in the SNA approach: sociometric status, mutuality and popularity, centrality, similarity and peer influence.

1) Sociometric Status

Being accepted or rejected by friends is an important element of school life among students. Typically measured through the peer nomination method, the sociometric status of an individual among classmates provides a unique idea about acceptance and rejection in friendship networks. Studies found that rejected status among classmates provokes aggression (Gest et al., 2001), and more bullying and victimization (Boulton & Smith, 1994). Highly accepted youth, that is those with high sociometric status, are typically bullies and bully assistants (Lee, 2000; Mouttapa et al., 2004). According to one study, classmates perceive bullies to be high on sociability, leadership, aggressive-disruptive behavior, and low on sensitive-isolated traits (Collins & Bell, 1996). However, those who enjoy the highest sociometric status are found to be defenders of victims. According to Salmivalli et al. (1996, p 12), defenders have the highest sociometric status, "possibly because 1) they react to bullying, so defending the victim is appreciated by peers; or 2) a high-status child does not have to be afraid of being victimized, even if he takes sides with the victim." Their results, however, suggested that the lowest status was occupied by both bullies and victims. This contradicting evidence indicates the necessity of using multidimensional measures of friendship networks, as is proposed below, and moving away from the simple measure of sociometric status.

2) Mutuality and Popularity

Reciprocity is identified as an important characteristic of friendship networks. Reciprocated peer nomination indicates that perceived friendship is not

uni-dimensional, but there is mutual interdependency. This reciprocated relationship is demonstrated in tests of what is called the friendship protection hypothesis (Boulton et al., 1999; Hodges et al., 1999; Hodges et al., 1997). For instance, using longitudinal data collected from 1170 youth at time 1 and 1158 youth at time 2 in 5 junior schools in the United Kingdom, Boulton et al. (1999) found that reciprocated best friendship could provide protection from bullying victimization (see also Hodges et al., 1997). Furthermore, Hodges et al. (1999) found that supportive friendship helps youths avoid internalizing behaviors, such as depression and low self-esteem, which are causes of bullying victimization.

The *size* of reciprocated friendship networks (popularity) is also recognized as an important characteristic of peer relationships. Gest et al. (2001) found that bullies have a great number of friends (see also Mouttapa et al., 2004), and bullies, assistants, and reinforcers belonged to larger networks than defenders, outsiders, and victims (Salmivalli et al., 1997).

In another study, popularity and mutuality were compared for bullies and victims. Huttunen et al. (1996) measured the number of friendships and reciprocated friendships among 459 students in 6th grade from 18 classes in Finland, and found that assistants, reinforcers, and bullies had larger friendship networks than outsiders, defenders, and victims. But their results suggested that mutuality is irrelevant to the participant roles in bullying situations and that mutuality is higher among girls than boys.

3) Centrality

In SNA, centrality stems from "the sociometric concept of the 'star' – that

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person who is the most 'popular' in his or her group or who stands at the centre of attention" (Scott, 2000, p 82). The idea of centrality is relevant to leadership among peers in bullying studies. Gest et al. (2001), for example, found central figures in both pro-social and anti-social peer groups. Similarly, Mouttapa et al. (2004) identified 'model boys' who are leaders of pro-social peer groups and 'tough boys' who are the center of anti-social peer groups. Based on social cognitive theory (i.e., learning theory in criminology) and social dominance theory, they found that bullies have larger friendship networks, higher sociometric status, and central network positions (Mouttapa et al., 2004). In another study, a high level of centrality was associated with the high levels of popularity among girls, but it was associated with aggressive behavior among boys (Xie, Cairns, & Cairns, 1999). These studies suggest the existence of central figures among peer groups, and that bullies typically are the central figures among their friends.

4) Similarity and Peer influence

It is common to find that a member of a peer group behaves in a very similar manner as do other members of the group. This similarity of behaviors among participants of a network group causes a controversy in SNA. The selection and attraction hypotheses suggest that those who are more similar will be more likely to be friends, and similarity factors include gender, race, poverty, aggression, withdrawn behavior, achievement, and sociometric status (Kupersmidt, DeRosier, & Petterson, 1995; Xie et al., 1999). Based on 506 students in 4th through 7th grades from 4 schools in inner-city areas, Xie et al. (1999) found that members of the same peer group were similar on multiple

behavioral dimensions, such as aggression, popularity, academic competence, affiliation, and emotional and behavioral disorder. Furthermore, Haselager et al. (1998) found that similarity among members is even greater in socially nonaccepted, anti-social groups. In addition, it is found that this similarity hypothesis is applicable only to proactive aggression, but not for reactive aggression (Poulin et al., 1997).

In contrast to the selection and attraction hypothesis, the influence model is supported in tests of the homophily hypothesis, which is that a member's behavior is influenced by other members of the peer group (Espelage, Holt, & Henkel, 2003; Salmivalli et al., 1997). Espelage et al. (2003) suggested that peer group membership influences bullying behavior, and found supportive evidence from analysis of longitudinal data from 422 students. Espelage et al. (2000) also found that involvement with delinquent peers mediates the associations of social bonds to family and delinquency (see also Elliott, Huizinga, & Ageton, 1985). Furthermore, peer influence was found to be greater among female students. Salmivalli et al. (1998) found that friends' behaviors were a better predictor of how the female students behave in bullying situations than their own former behavior in earlier grades.

These competing hypotheses (selection/attraction and influence) were cross-tested in a research project with a cross-lagged panel model using the National Youth Survey data (Matsueda & Anderson, 1998). The researchers compared learning and interactional theories of delinquency with control theory, and found that "the effect of delinquency on peer associations is larger than that of peer associations on delinquency" (Matsueda & Anderson, 1998, p 269).

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However, it is important to note that their analysis also found that there is reciprocal relationship between delinquent peer association and delinquent behavior.

Above mentioned findings from the SNA studies in bullying suggest the necessity of developing a different approach to measuring peer relationship. Particularly, the contradicting findings indicate that sociometric status is not a reliable measure of peer relationship. In addition, the measures used in the SNA studies are typically based on size of friendship networks or reciprocated friendship using peer nomination. Those measures for the mutuality, popularity, and centrality are simply counts of the frequency of particular persons' names nominated, thus those measures do not adequately address the quality of friendship. Finally, since the measures for testing the similarity and influence of peers typically require longitudinal data, this dissertation instead develops a measure of the quality of friendship networks (i.e., pseudo friendship network). This measure, as well as three other measures for peer influence, are discussed in detail in the section, Experiences with Peers.

III. SHORTCOMINGS OF RESEARCH ON BULLYING

The outcomes of aforementioned research efforts invested in understanding bullying phenomenon are somewhat disappointing for several reasons. First, bullying in school has not been a popular topic among criminologists, especially in the United States (Batsche & Knoff, 1994; Espelage & Swearer, 2003; Farrington, 1993; Spivak & Prothrow-Stith, 2001). According to this researcher's effort to search the literature in the field of criminal justice and criminology, a very limited number of studies have been related to bullying, and most of these studies focus on school violence, rather than bullying as a major dependent variable. Since bullying is generally considered as a subtype of anti-social behavior (Farrington, 1993), understanding bullying and the escalation of bullying into anti-social behavior will help criminologists to better understand the etiology of illegal behaviors among youths as well as adults in later life. Thus, more in-depth and comprehensive study on bullying behaviors is necessary for a better understanding of overall anti-social behaviors among school children.

Second, bullying has been understood as independent incidents within a context of different aspects of school life. Even though researchers acknowledge complex social fabrics influencing the incidence of bullying in schools, they typically focus on the individual or incident level in studies of bullying (Flores, 2005; Morrison, 2001; Rodkin & Hodges, 2003; Sexton-Radek, 2005; Swearer & Doll, 2001). Bullying, however, is not just an individual act against victims, but it is a manifestation of group acts against victims (Morrison, 2001; Olweus, 1993; Smith & Brain, 2000). Morrison (2001) argued that bullying and victimization in

schools is a systemic problem and is a cumulative and multifaceted phenomenon. According to her, understanding and pathologizing the problem should not be based on blaming one factor, one person, or one place (Morrison, 2001). However, most prior research has been limited to a focus on a single area of the researchers' interests, such as individual psychological traits, peer networks, family influences, or school environments.

Third, and more strikingly, no effort has previously been made to construct a theoretical framework to accommodate causal linkages between bullying and various facilitating factors for bullying (Espelage & Swearer, 2003; Morrison, 2002; Sullivan et al., 2004; Swearer & Doll, 2001). There is a body of literature investigating factors associated with bullying behavior (see aforementioned correlates in the previous section), but the absence of a theoretical framework made it difficult to develop a multi-level explanation of bullying in schools (Sullivan et al., 2004).

Fourth, several aspects of bullying are left underinvestigated or uninvestigated by researchers. For example, a number of researchers suggested the importance of possible effects of school climate and teacher's attitude towards bullying on bullying behavior, but there has not been any empirical research to exclusively and empirically investigate such influences (Espelage & Swearer, 2003; Farrington, 1993). Japanese scholars emphasized the importance of studying norms and value systems among students, teachers' moral authority, referring to how well teachers' morality is respected by students, and collective punishment (Masataka, 1998; Naito & Gielen, 2005; Tai, 2001). But those factors are neither comprehensively nor empirically investigated so far.

Finally, a recent trend in studies of bullying focuses on the application of SNA to peer relationship and social status of students involved with bullying. SNA researchers have attempted to measure peer influence through personal networks. However, those attempts failed to recognize differences in the quality of friendship networks for different peer groups. It is problematic that these three dimensions (sociometric status, centrality, and mutuality) of friendship networks have a limited association with each other. For example, some bullies belong to popular cliques (i.e., popularity or mutuality) even though they are generally disliked (i.e., sociometric status) by other classmates (Salmivalli et al., 1996). This indicates that a concept of quality of friendship networks may be useful for developing a clearer understanding of friendship dynamics as they affect bullying in schools.

Recently, the negative quality of social capital in networks has received considerable attention from social network analysts (see Portes, 2000). However, the SNA measures used in bullying studies to investigate friendship quality (i.e., mutuality, popularity, centrality, or similarity) could not reflect the negative quality of social capital in friendship networks in bullying situation. Thus, it is necessary to investigate the negative quality of friendship networks, which may increase bullying or decrease protection from bullying among friends. The negative quality of friendship networks refers to characteristics like helplessness in friendship networks or using friendship networks to avoid retaliation against bullying. The concept used in this study to signify the negative quality of a friendship network is *pseudo friendship network*, and this is further discussed in detail in the section, "Experiences with Peers."

IV. ECOLOGICAL MODEL OF BULLYING IN SCHOOLS

This study borrows Bronfenbrenner's (1979) ecological system model as a theoretical framework to understand multilevel etiological factors affecting bullying behavior within the social contexts of school environments. With the ecological system approach to bullying, school environment is viewed as "a set of nested structures" (Bronfenbrenner, 1979, p 3), which include home, school, and neighborhood settings (Flores, 2005). Each layer of the set of structures has an independent effect on a child's development of bullying behavior, but also it is interconnected and interacts with each other layer to generate a contextual effect over the development of bullying behavior. In the ecological model, the social contexts are not merely limited to immediate social settings, such as family or school, but they are extended to larger surroundings, such as community (Bronfenbrenner, 1979). Figure 1 visualizes the ecological system model applied to the school setting.

Figure 1. Bronfenbrenner's Ecological System Model Applied to the School
Setting
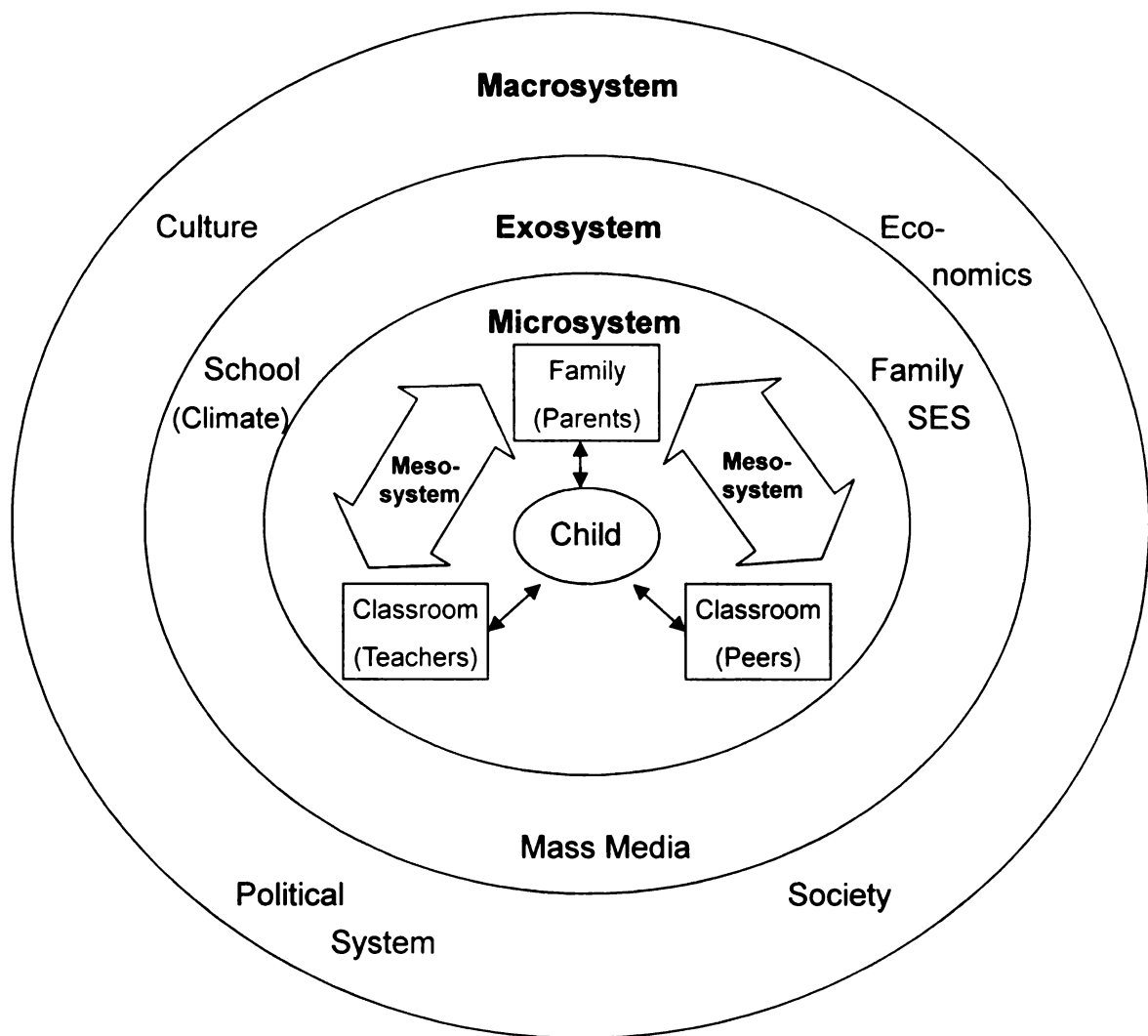
The importance of the contextual effects of the school environment as
well as the effects of individual differences on aggressive and bullying behaviors
has been previously recognized by many scholars. For example, Fagan and
Wilkinson (1998) criticized studies that focus only on individual traits as causes of
violence for overlooking other factors, such as school environments and
community characteristics (Fagan & Wilkinson, 1998; Laub & Lauritsen, 1998).

Cairns and Cairns (1991) argued that bullying phenomenon should be understood as a continuum of children's developmental process, and that the developmental approach to bullying requires an ecological perspective, social network analysis, and a multilevel explanatory model, which measures different levels of causal factors. Since a developmental model of social behavior presumes that social behavior patterns are determined by multiple factors including ontogenetic and social contexts, it is a necessary step to use an ecological approach to explaining bullying for further development in this area of study (see also, Sexton-Radek, 2005).

Despite recognition of the problems with existing theory to explain bullying, there has been no empirical research guided by an ecological model. Theory on bullying in schools has neglected the importance of the interactions of people across different systems, for example parents and teachers, or parents and a youth's peers. As a result, there is much empirical evidence of the correlates of bullying, but there is no theory to make sense of the different sorts of predictors.

Because it views bullying as a developmental outcome for children, Bronfenbrenner's ecological system model could provide a framework for explaining how the different systems influence children to behave as bullies (Flores, 2005). Dishion, French, and Patterson (1995) also argued that the ecological model does not ignore the importance of the context in which children interact with each other and in which social relationships are embedded. Based on vigorous acknowledgement of the importance of both individual differences and social contexts, Dishion and his colleagues argued that using one theory to

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explain antisocial behavior is reductionistic, and suggested that an integrative model that considers individual, school, and other influences is essential to understand individuals in context.

Since bullying is an "ecological phenomenon that emerges from social, physical, institutional and community contexts as well as the individual characteristics of youth of both bully and victim" (Swearer & Doll, 2001, p 7), it is of importance that each component of the ecological structures of school environment as well as social interactions between the components are thoroughly investigated. Bronfenbrenner's (1979) ecological system model includes 4 layers of systems relevant to the school environment, microsystem, mesosystem, exosystem, and macrosystem. In this section, the components of each system and their relevance to bullying are discussed in detail.

1. Child as a Center of School Ecology

According to Bronfenbrenner (1979), children are perceived as a developmental entity that plays an important role in interacting with surroundings. The interactions and interconnections are characterized by types of ecological settings as well as individual traits (Bronfenbrenner, 1979, 1989). Some individual traits relevant to explaining bullying include age, prior experience of bullying victimization, dominance, impulsivity, attitude towards aggression, and fun-seeking tendency.

A. Age

Studies have documented the age-graded nature of the bullying

phenomenon. Most of the studies found that prevalence of bullying peaks during middle school between 6th grade and 8th grade (Espelage et al., 2003; Harris & Petrie, 2003; Lee, 1999; Nansel et al., 2001; Pellegrini & Long, 2002; Seals & Young, 2003). Within the range, researchers found that prevalence of bullying escalates from 6th to 8th grade (Espelage et al., 2003; Seals & Young, 2003), and then it gradually decreases during high school (Pellegrini & Long, 2002). Despite the general pattern, a small portion of bullies and victims continues to experience aggression at the end of middle school and in high school. Thus, there is some stability and continuity of bullying behaviors and victimization even when youth move into the upper grades with new classmates (Boulton & Smith, 1994; Kim, 2001; Salmivalli et al., 1998).

B. Prior Experience of Bullying Victimization

Previous studies have recognized that prior experience of bullying victimization could result in bullying behaviors to others. Two explanations are possible for the association between prior bullying victimization and bullying behavior. First, exposure to violence and experience of bullying could lead to bullying behaviors to other students through a social learning process (Ah et al., 2005; Baldry, 2003; Lee, 1999). Second, fear of victimization could precipitate student engagement with powerful, deviant peer groups and involvement in bullying behaviors to avoid bullying victimization (Farrington, 1993; Kim, 2001; Park, 2002). Both explanations suggest that prior experience of bullying victimization influence bullying behavior to other students in school.

C. Dominance and Impulsivity

Other personal psychological factors found to be important influences on bullying behavior are dominance and impulsivity. Particularly, one study in Korea found that personal psychological characteristics, i.e., impulsivity and dominance, are significantly different between bullies and victims (Lee, 2000). Based on comparison of 54 bullies and 41 victims, Lee (2000) found that bullies scored significantly higher than victims on impulsivity (average scores on impulsivity scale: 69.09 vs. 50.95) and dominance (average scores on dominance scale: 67.44 vs. 50.59). In Western countries, researchers also found that impulsivity is significantly and positively associated with levels of bullying behaviors (e.g., Bosworth, Espelage, & Simon, 1999).

D. Attitude towards Aggression

Many studies found that one of the most important psychosocial factors that significantly predicts high levels of bullying behaviors is attitude towards aggression (Bentley & Li, 1995; Bosworth et al., 1999; Boulton et al., 2002; Espelage & Swearer, 2003; Shin, 2000). Bentley and Li (1995) found that elementary school bullies (grades between 4 and 6) were more likely to have positive beliefs toward aggression than youth who did not bully. Bosworth et al. (1999) also found that beliefs supportive of violence significantly increased the levels of bullying behaviors.

E. Fun Seeking Tendency

Social information processing theory has been used to explain bullying as

a fun seeking behavior in Japan. Even though Naito and Gielen (2005) did not specifically mention the theory, they argued that some students misinterpret bullying behaviors as normal and acceptable forms of joking and kidding. More specifically, they argued that school norms are interpreted ambiguously and situation-specifically. Thus, students tend to disregard some norms in some situations, and go into a "play mode" when they engage in bullying as pleasure seeking (Naito & Gielen, 2005, p 182). They said that, such misinterpretation of normal school norms helps students to more easily engage in bullying behaviors, and the engagement makes their boring school lives less dull and more fun in the short run. A similar finding has been reported by Rigby (2004), who wrote that bullying was a response to peer pressure, and that powerful peer groups were motivated to bully less powerful others by grievance, or imaged grievance, a prejudice, and desire to have fun. In Korea, Shin (2000) also found that fun seeking is an important determinant of bullying behavior especially in urban areas (see also Seo & Han, 2004).

2. Microsystem

Microsystem is defined as "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics" (Bronfenbrenner, 1979, p 22). According to Bronfenbrenner, the most critical notion in the microsystem is *experience* in face-to-face *interaction* through activity, role, and interpersonal relations at home, school, and community. The experience is constituted not only with "objective properties" of the environment, but also with "properties [that] are perceived by

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the persons in that environment" through interaction (p 22). Thus, this phenomenological view emphasizes the importance of meanings of experience within interpersonal interactions, which are "most powerful in shaping the course of psychological growth" (p 22).

The microsystems not only contain the objective characteristics of places or social institutions, but also include other persons, such as parents, peers, or teachers. Griffore and Phenice (2001) argued that family, as an example of a microsystem, is not simply defined by the physical setting, and that "the essence of the family as a microsystem is the interaction that occurs there" (Griffore & Phenice, 2001, p 70). Likewise, experiences (i.e., interactions between children and peers and between children and teachers) in school classrooms have been recognized as important microsystems in the school setting (Bronfenbrenner, 1979; Griffore & Phenice, 2001). Thus, three interactions a child may have with the immediate microsystems in family and school settings are experiences with parents, experiences with teachers, and experiences with peers.

A. Experiences in the Family

In studies of bullying, experiences in the family and perception of the experiences have been identified as important factors in the prediction of bullying behavior. For example, for a sample of Italian youths, Baldry (2003) found that bullying and victimization were predicted by exposure to parental violence and child abuse, especially for female children (Baldry, 2003). In addition, as mentioned previously, authoritarian parenting using physical discipline, hostile and rejecting parenting, lack of supervision, and a permissive attitude toward

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bullying significantly affect the development of children's poor self-image and emotional dysregulation, and then these psychosocial factors influence children's bullying behaviors in school (Batsche & Knoff, 1994; Christie-Mizell, 2003; Curtner-Smith et al., 2006; Espelage et al., 2000; Espelage & Swearer, 2003; Shields & Cicchetti, 2001). In particular, children's perception of family and interactions with parents have been empirically found to be significant predictors of bullying behaviors (Bowers et al., 1994; Stevens, Bourdeaudhuij, & Oost, 2002).

In addition, parents' emphasis on the importance of education was recognized as having important impacts on the interaction between parents and children in Korea and Japan. Research found that parents who demand academic success tend to discourage their children from involvement in any types of school activities other than studying in school (Kim, 2001; Kim & Lee, 2000; Lee & Kim, 2000; Moon, 2002; Naito & Gielen, 2005; Shin, 2000). This parenting practice could generate stress among students (Agnew, 1992, 2001; Lee & Kim, 2000; Naito & Gielen, 2005), but also it may promote a positive school climate through parental involvement in school.

B. Experiences with Teachers

Relatively little research has been conducted to investigate the effect of teacher's attitude towards bullying and interaction between students and teachers in regard to bullying behavior in schools (Espelage & Swearer, 2003; Rodkin & Hodges, 2003). Recently, a study suggested that teachers perceived relational bullying as the least serious type of bullying, and responded to that with

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the least severe actions (Bauman & Rio, 2006). In Japan, teachers' lack of moral authority has been found to be associated with an increase in bullying phenomenon in the classroom (Naito, 1990). According to Naito (1990), teacher's moral authority is how much students respect teachers for their morality. Naito (1990) argued that once students think teachers lack moral authority, then teachers do not have influence over what students should and should not do.

In South Korea, studies found that teachers' ineffective intervention in bullying situations as well as teachers' attitude towards bullying were significantly associated with levels of bullying in schools (Park, 2003; Yang, 2005). Based on a literature review, Park (2003) argued that teacher's dysfunctional supervision and instruction in relation to bullying behavior could be possible causes of bullying in schools. In addition, Yang (2005) suggested that students' perceptions of teacher's positive attitude towards bullying might increase bullying in the classroom. However, there is a lack of empirical study on perceptions of teacher's attitude toward bullying and student-teacher interaction around the issue of bullying.

C. Experiences with Peers

Since students spend most of their day with friends and since they are in the middle of a developmental process in which collective peer judgment provides a guideline for their behaviors (Kim, 2004), peer influence can be enormous. Studies of peer influence, so far, have focused on various topics, such as relationships with peer groups, social roles and status among classmates, and perceived sociability, leadership, and sensitivity to others. More specifically,

research found that social exclusion from peer groups (Bollmer, Milich, Harris, & Maras, 2005; Buhs et al., 2006; Dill et al., 2004; Natvig, Albrektsen, & Qvarnstrom, 2001), friendship with deviant peers (Haselager et al., 1998; Poulin et al., 1997; Xie et al., 1999), peer dissimilarity (Lease, McFall, & Viken, 2003), and seeking a higher sociometric status that are typically occupied by bullies (Collins & Bell, 1996; Mouttapa et al., 2004) increase the likelihood of bullying others. However, these studies were limited in that each focuses on a single aspect of peer relationship, or because they ignore the possibility that friendship networks can have a negative quality.

Based on the results of the previous studies on peer relationship in bullying situations, this dissertation considers four factors relevant to peer influence in school environments. They are the power-dynamic (PD), the level of difference-acceptance, coercion of public self, and pseudo friendship networks.

1) Power-Dynamic (PD)

Some youth view bullying as a way to gain higher social status among classmates. Especially when there is power inequality between two or more peer groups, a more powerful group will (both individually and collectively) bully the less powerful groups in an effort to obtain dominance (Seo & Han, 2004). The tendency for seeking power has been captured by the concept, power dynamic. Twemlow and his colleagues (2001) suggested that the power dynamic refers to "a conscious or unconscious pattern in which an individual or group controls the thoughts and actions of others" (p 377). Long and Pelegrini (2003; see also Pellegrini & Long, 2002) found that middle school youth used bullying to achieve

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dominance over other classmates, and once dominance was established, bullying tended to increase, resulting in even more dominance. Consistent with this finding, based on an extensive literature review, Rigby (2004) concluded that among social groups with different levels of power, such as males and females, certain groups sought domination to enjoy a powerful status. According to Rigby, since boys were trying to assert hegemonic masculinity, and therefore dominance, they were more likely to bully other youth (see also, Young & Sweeting, 2004).[3]

2) Level of Difference-Acceptance

Level of difference-acceptance refers to how much students and their peer groups tolerate dissimilarity with other classmates, especially victims and themselves. A low level of difference-acceptance among students seems to be significantly associated with bullying others.

Consistent with the notion that bullying involves tolerance, Coloroso (2003, p 20) argued that "bullying is not about anger, [but] it's about contempt – a powerful feeling of dislike toward somebody considered to be worthless, inferior, or undeserving of respect." Further, she argued that contempt consists of three psychological advantages, a sense of entitlement [power], an intolerance toward differences, and a liberty to exclude (Coloroso, 2003, pp 20 - 21). According to her, intolerance is a major cause of bullying based on racial and gender differences (see also Young & Sweeting, 2004).

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[3] Due to the fact that boys' tendency for hegemonic masculinity, gender arrangements that are part of the exosystem (discussed in the Section, Exosystem), and which are a constant in the present research, may influence the power dynamic.

There is empirical evidence that students with similar characteristics are more likely to be friends (Huttunen et al., 1996; Kupersmidt et al., 1995), and this tendency is especially strong for delinquent peer groups (Haselager et al., 1998). In contrast, based on analysis of data collected from 478 students from 26 classrooms in 4th through 6th grades, Lease et al. (2003) found that perceived dissimilarity was positively related to views that a student was odd, which in turn was related to social exclusion and bullying.

In Japan, there is some evidence that interpersonal comparison is a major reason for bullying (Naito & Gielen, 2005). In Korea, Ahn (2002) suggested that one of the most important motives to bullying others is that victims would not, or could not, follow patterns and trends of behaviors, clothing, or even hair styles common in peer groups. Even though contemporary youths in Korea seem to emphasize individuality, they tend not to accept others who do not share common interests or characteristics (Shin, 2000). This may occur in Korea because there is an enormous investment of energy, concern, and money into rearing children (Moon, 2002), which can lead to unusually high levels of self-esteem among students, and a related low tolerance for peers who are "different" (Kim & Lee, 2000).

3) Coercion of Public Self

A discrepancy between self-image and perceptions of how peers see you (or 'internal image' and 'public self' in Cairns and Cairns (1991, p 256)) seems to be another important reason for bullying. This means that youth who act consistently with their own self images, but differently than how other youth

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expect them to act, are likely to be bullied. It also means that youth would act as bullies because they feel that their victims are behaving incongruently with expectations, or their "public selves."

The notion of bullying to coerce peers to act in accord with expectations is particularly applicable to a collectivistic society, like South Korea. Korean studies of bullying found that about 75% of bullies said that they bullied others because their victims "pretended" to be beautiful, strong, or smart (KEDI, 1998). The KEDI study concluded that those who could not live according to the norms of a collective culture tended to be victimized by others due to their pretense of being beautiful, strong, or smart, and that to avoid victimization, students needed to behave according to "public images" in the minds of their peers (see also, Kim & Park, 1997; see also, Lee & Kaok, 2000). Similarly, other studies found that most of the students who bullied others said that victims deserved bullying because they did not behave according to peer culture (Lee, 2003), and that especially in urban areas, they bullied to *correct victims' wrong doing* (Shin, 2000). Another study found that students collectively agreed on images of other students, and they coerced them to behave according to those images (Kim, 2004). This kind of coercion was more common in collectivistic peer groups or schools (Lee, 2004). In Korea, consequently, collective judgment of oneself by others functions as a guideline for behaviors in schools, and this coercion of public self seems to be more reinforced and practiced in a collectivistic peer group or school.

4) Pseudo Friendship Network

Social network theory focuses on the tie between individuals, specifically on individual communication (a tie) between people (actors) in an organization. This perspective emphasizes quantification of interaction (i.e., communication), selection of actors, and influence of actors over other actors by measuring the transaction of social capital through personal networks. In this sense, it is a more direct and methodologically explicit approach to studying relationships and their influence over individual behavior than traditional approaches to the study of social relationships.

Recently, a concept of negative social capital has received academic attention. This concept considers the quality of social capital and suggests that social capital is not only positive in that it provides help and resources to actors within a network, but also some social capital does have negative consequences, such as social exclusion of others who do not belong to the network or helplessness in the social networks (Portes, 1998).

Some types of peer support networks can produce a negative outcome for other individuals and groups. It was found that without proper adult supervision, the presence of a peer support system does not bring a decrease in bullying (Naylor & Cowie, 1999). Some male peer supporters reported the experience of ridicule and sabotage of their supporter role from other classmates (Cowie, 1998). Helplessness in friendship networks was found among aggressive peer groups (Pakaslahti & Keltikangas-Jarvinen, 2001), and help provided to bullying victims is withdrawn due to fear of retaliation and victimization (Slee, 1994).

Typical measures used in social network analysis have not reflected the quality of friendship networks, since they focused on measuring reciprocated friendship. For example, the emphasis has been on sociometric status, mutuality, popularity, or centrality as indicated by either peer nomination or reciprocated nomination (Huttunen et al., 1996; Mouttapa et al., 2004; Salmivalli et al., 1997; Salmivalli et al., 1996). Typical questions used in the peer nomination are 'who is your best friend?,' or 'who is a bully in your classroom?' Once a student nominates a friend, and the friend nominates the student, then researchers assume the friendship between them brings a positive outcome.

The measure ignores the possibility of negative outcomes of a relationship. For some students, fear of retaliation and victimization and helplessness in friendship networks prevents development of a genuine friendship network which contains positive social capital. For instance, a frequent method that students use to avoid bullying victimization in Korean schools is to demonstrate friendship with youth who have a high sociometric status and dominate the class (Park, 2002). This kind of friendship may serve as a protection mechanism by showing membership in a powerful peer group, and thereby borrowing power from the peer group to avoid victimization (see also, Kim, 2001).

However, in addition to this type of protection, a pseudo friendship network can facilitate bullying behaviors, because youth behave (i.e., bullying others) according to their friends' expectations to maintain their friends' willingness to protect them. A focus on pseudo friendship networks is unique in criminological theory, which has instead focused on how deviant peers learn from

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each other (Akers, 1996; Akers, 2000; Sutherland & Cressey, 1970; Vold, Bernard, & Snipes, 1998; Wolfgang & Ferracuti, 1981). The concept of a pseudo friendship network focuses attention on short-term superficial friendships that provide protection from bullying victimization. With this kind of friendships, students may not share favorable definitions or norms toward bullying with the leader of groups that does have these values, but they may still be influenced to bully other youth.

In sum, since having a number of friendships helps students to avoid bullying victimization (Boulton et al., 1999; Rodkin & Hodges, 2003), and because of fear of victimization (Farrington, 1993; Park, 2002), students may want to make or maintain a superficial pseudo friendship with peer groups that dominate in classes. They may even get involved with bullying others. Thus, pseudo friendship networks with peers who support bullying behaviors will increase involvement in bullying behavior.

3. Mesosystem

Mesosystem refers to "the interrelations among two or more settings in which the developing person actively participates (such as, for a child, the relations among home, school, and neighborhood peer group; for an adult, among family, work, and social life)" (Bronfenbrenner, 1979, p 25). As a system of microsystems, the mesosystem comprises a net of social interconnections among participants, such as students, teachers, and parents, in schools. The forms of interconnections are "[*participation* in both or more settings, e.g., family and school], *intermediate links* in a social network, *formal and informal*

*communications...*the extent and nature of *knowledge and attitudes existing in one setting about the other*" (p 25).

Once a child enters a new environment (e.g., school), which is called a *setting transition*, the child becomes a *primary link* between family and school, so as to constitute a mesosystem (Bronfenbrenner, 1979). According to Bronfenbrenner (1979, p 210), a *primary solitary link* refers to a person who "participates in more than one setting of a mesosystem" with no other persons involved in the setting. For instance, according to him, when a child "goes to school on the first day with no one else from her home" (p 210), she becomes the primary solitary link between family and the school. *Supplementary dual links*, in addition to the primary solitary link, develop when other persons are involved in the two settings, e.g., "when Mary's mother attends a PTA meeting, her teacher pays a visit to the home, or Mary brings home a classmate to play" (Bronfenbrenner, 1979, p 210).

In terms of school environments, thus, the family relationship remains a microsystem until children go to school on the first day. Once children go to school, there is a mesosystem developed by the links among the children, parents, peers, and teachers, if they participate in each other's setting, for instance parents talk to teachers. In contrast, within a school setting, experiences and communication with teachers and a child's peers remain microsystems, since there is no other microsystem involved with it. Parents' communication with teachers or with children's friends in school will develop mesosystems for bridging between the family system and the school system. This distinction of experiences with parents (a microsystem) from parental participation within

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schools (a mesosystem), including communications with teachers and with peers, could reveal distinct preventive effects of parental involvement with schools on bullying.

There is research evidence that low parental involvement, an indicator of a lack of interconnections of microsystems, significantly contributes to bullying behavior (Flouri & Buchanan, 2003). Scholars also have emphasized that parental interconnections with peers prevent bullying behavior (Harris & Petrie, 2003; Sullivan et al., 2004). Thus, exchanges of knowledge and information about attitudes towards bullying through communications between parents and teachers, and parents and students should have an influence over bullying phenomenon in schools.

4. Exosystem

Exosystem refers to "one or more settings that do not involve the developing person as an active participant, but in which events occur that affect, or are affected by, what happens in the setting containing the developing person" (Bronfenbrenner, 1979, p 25). The exosystem provides a place where the microsystem and mesosystem interplay, and examples of an exosystem for students include gender of children, parents' socioeconomic status, especially jobs, and school climate including school policies and rules established by school boards. Gender of children is considered in this study as an exosystem, because of the gendered nature of bullying phenomenon in schools. School climate is generally defined as the total environmental quality within a school (Anderson, 1982). In this section, each part of school's exosystem is discussed in detail.

A. Gender

Researchers have agreed on the gendered nature of bullying (Simpson & Cohen, 2004). Most of the bullying studies found that boys are more likely to bully others (Baldry, 2003; Espelage & Swearer, 2003; Farrington, 1993; Nansel et al., 2001; Natvig et al., 2001; Olweus, 1993, 1995; Rigby, 2005; Rivers & Smith, 1994; Seals & Young, 2003; Wolke, Woods, Stanford, & Schulz, 2001). Typical roles boys play in bullying situations are bully, reinforcer, and assistant, while girls are more likely to be defender and outsider (Salmivalli et al., 1996). In terms of types of bullying behaviors, studies found that boys are more likely to commit direct physical and verbal bullying against other boys and girls, but that girls are more likely to use indirect, relational bullying using third-parties to isolate victims (e.g., Rivers & Smith, 1994). More specifically, studies found that girls tend to be involved more in cyber bullying through emails and instant messages (e.g., Keith & Martin, 2005). Based on prior work, it is expected that there will be gender differences in prevalence of involvement in bullying behavior and types of bullying behaviors.

B. Family SES

Batsche and Knoff (1994) argued that family SES is one part of the exosystem because children have no say about their social class, and social class has distal effects on children's behaviors. One way that children are influenced by the family SES is through distress stemming from economic strain (Batsche & Knoff, 1994). Empirical studies, however, found contradicting evidence of the effect of parental SES on bullying behavior. For example, Wolke

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et al. (2001) collected data from 2377 students aged between 6 and 8 in England and 1538 students aged 8 years in Germany, and found a significant, but weak, negative association between SES and bullying behavior. In Korea, Shin (2000) collected data from 578 subjects from both rural and urban areas, and found that those who have low SES and mothers whose educational level is low are more likely to bully others. In contrast, based on an extensive literature review, Rigby (2004) argued that parental SES was an irrelevant factor to school bullying in different countries, such as France, Spain, and Portugal (for review, see Rigby, 2004; Yang, 2005).

An absence of association between parental SES and bullying behavior is possibly due to a U-shaped distribution of the relationship of bullying and parental SES, which cancels out the effects of both extremes. In terms of bullies, Korean research found two distinct groups of students; the first group consists of students who are from the high or middle level of SES and the other group consists of those from the lower level of SES (Park & Son, 1998; Yang, 2005). The first group of bullying students has high academic achievement and self-esteem and shows leadership, and acts like 'opinion leaders' in class (e.g., Kim, 2001; Lee, 1999), and their higher parental educational level is associated with a higher level of physical bullying (Ah et al., 2005). The second group of students, by contrast, has low academic achievement and self-esteem, but shows leadership among delinquent peers (e.g., Lee, 2000; e.g., Lee, 1999), and their low parental educational and SES levels were associated with verbal bullying (Ah et al., 2005). These groups are consistent with a categorization of the 'model boy' and 'tough boy' in Western research (Rodkin & Farmer, 2000). In light of these

findings, therefore, it will be important to examine the shape of the relationship of social class to bullying.

C. School Climate

School climate is typically defined as the total environmental quality within a school (Anderson, 1982). The total environment includes ecology, milieu, social system, and culture (Tagiuri, 1968). Many studies found that school climate is an important influence on students' behaviors. For example, studies found that improving general school climate could reduce delinquency and misconduct among non-delinquent youths (Gottfredson, 1986, 2001; Gottfredson & Gottfredson, 1985). Specifically, Gottfredson (1986) found that environmental interventions, which aimed to improve school climate, reduced delinquency and misconduct slightly but statistically significantly. The environmental interventions included improving the general image of the school and cohesion between teachers and students, and generating peer pressure to resolve problems in a socially acceptable way (Gottfredson, 1986). However, according to Gottfredson (1986), targeted direct interventions (e.g., services aimed to increase experiences of academic success, self-concept, and bonds to the social order) for high-risk students did not reduce overall delinquent behavior and misconduct.

A relatively small number of empirical studies have been carried out to test the influence of school climate on bullying behaviors. Menesini et al. (2000) selected 17 bullies, 18 victims, and 35 control group students, whose ages were between 8 and 11, and conducted an experiment to test the effect of competitive and cooperative school settings imposed by teachers on children's behaviors in

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bullying situations. They found that bullies showed less assertive and aggressive behaviors in a cooperative setting than in a competitive setting (Menesini et al., 2000). Espelage and Swearer (2003) argued that school climate could actually decrease bullying in schools, and that the school climate could be measured by school policy, rules, and programs, high academic standards, and high parental involvement in school boards.

In Japan, school norms and value systems, collective justice, and the moral atmosphere have been studied as factors contributing to school climate (Masataka, 1998; Naito & Gielen, 2005; Tai, 2001). Naito and Gielen (2005) argued, based on the Japanese literature on bullying, that bullying tends to more frequently occur in classes where students perceived a poor moral atmosphere. Another researcher also argued that in classes where bullying is common, students are not controlled by positive formal school norms accepted by school authorities (e.g., teachers' moral authority), and they behave without concern for others and conform to deviant peer group norms (Hoshino, 2001). In such classes, collective justice becomes distorted into collective punishment administered by deviant peer groups on bullying victims (Naito, 1990; Tai, 2001). These formal and informal norms and values in schools could be revealed through investigating school policy, rules and programs; perceived effectiveness of these school policy, rules and programs; collective justice; level of academic standards; and level of parental involvement in school boards that make decisions about school policies, rules and programs (Espelage & Swearer, 2003; Rigby, 1996; Swearer & Doll, 2001).

It should be also noted that the school climate could be influenced by

microsystem and mesosystem factors. According to Bronfenbrenner (1979), each layer of the set of systems is interconnected and linked with each other layer to generate a contextual effect over individual behavior. As a place where the micro- and meso-systems interplay, the school climate is expected to be connected with the micro-and mesosystem factors. Especially, since children and parents bring their experiences to school, and since they interact with teachers and peers in school, the school climate could be affected by them.

Specifically, as noted earlier, parents' emphasis on the importance of education may promote a positive school climate, for example, through parental involvement in school boards. As a part of the microsystem, the parents' emphasis on education may alter academic standards, which is a part of school climate. In addition, perceived moral atmosphere is heavily related to teachers' moral authority and collective punishment (Hoshino, 2001; Naito, 1990; Tai, 2001). Also there is a strong association between the power dynamics among peers and school climate (Twemlow et al., 2001). These findings indicate that the school climate could be influenced by the microsystem. Finally, school policies, rules, and regulations are decided by school boards which could be heavily influenced by parents and teachers, who discuss and share ideas about bullying in schools. Consequently, this study hypothesizes that the school climate will be related to micro- and mesosystem factors.

5. Macrosystem

Macrosystem refers to "consistencies, in the form and content of lower-order systems (micro-, meso- and exo-) that exist, or could exist, at the level of

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the subculture or the culture as a whole, along with any belief systems or ideology underlying such consistencies" (p 26). According to Bronfenbrenner (1979), belief systems and lifestyles differ for socioeconomic, ethnic, religious, and other subcultural groups as well as different countries. Such intrasocietal contrasts, according to him, could reveal functions and effects of each distinct macrosystem.

Children are reared within social interaction, which is regulated by norms and values espoused by a culture. Childrearing differs between different cultures, and children's behaviors are regulated by parents' and their culture's norms and values. By citing an African phrase, "it does take a village to rear a child," Espelage and Sweaer (2003) argued that community has its distal but significant effect over individual children's behavior in schools. For example, one study found that children's pretend play greatly differs for different countries, and this discrepancy stems from culture-specific parental teaching norms and values in terms of personal interaction (Farver & Shin, 1997). Thus, understanding cultural difference may be critical in understanding bullying in schools.

A recent comparative study on bullying found that the likelihood of bullying others depends on societal characteristics, such as individualism and collectivism (Nesdale & Naito, 2005) and social disorganization (Farrington, 1993; Laub & Lauritsen, 1998). Specifically, Nesdale and Natio (2005) collected data from 158 Japanese and 157 Australian students on behavioral intentions, and found that compared to their Australian counterparts, Japanese participants have a greater likelihood of bullying others and a lower likelihood of helping victims. They concluded that this discrepancy stems partly from different

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orientations of individualism and collectivism.

Hofstede (1991) explained,

> "Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onwards are integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty." (Hofstede, 1991, p 51)

These unidemensional definitions of individualism and collectivism have been criticized and expanded by Triandis (Kim, Triandis, Kagitcibasi, Choi, & Yoon, 1994). Triandis (1995) defined individualism and collectivism as follows;

> *Collectivism* may be initially defined as a social pattern consisting of closely linked individuals who see themselves as parts of one or more collectives (family, co-workers, tribe, nation); are primarily motivated by the norms of, and duties imposed by, those collectives; are willing to give priority to the goals of these collectives over their own personal goals; and emphasize their connectedness to members of these collectives. A preliminary definition of *individualism* is a social pattern that consists of loosely linked individuals who view themselves as independent of collectives; are primarily motivated by their own preferences, needs, rights, and the contracts they have established with others; give priority to their personal goals over the goals of others; and emphasize rational analyses of the advantages and disadvantages to associating with others." (Triandis, 1995, p 2)

Parents in a collectivistic society teach their children to control the display of emotion, to value group harmony, and to minimize conflicts with others (Farver &

Shin, 1997; Kim, 1991), and a collectivistic society emphasizes relatedness, interdependence or "we" (Maday & Szalay, 1976). Furthermore, collectivistic Korean parents discourage children from expressing their own opinions (Kim & Choi, 1994; Lee & Lee, 1987), and teach them to talk "around" an issue and pay a great deal of attention to the other's sensitivity to understand the point of the conversation (Chu, 1978; Farver & Shin, 1997).

Within this kind of collectivistic society, school bullying can be understood as a group-based problem. When there is a person who violates group goals or group-oriented norms, or who deviates from group similarities, he or she is more likely to be bullied by others. In Korea, a study found that students who violate 'tacit rules' of peer groups were more likely to be bullied by the groups (Park & Son, 1998). Also researchers found that collectivistic orientation within a peer group induced more lenient and more tolerant reactions towards such rule violators, but harsher and less tolerant reactions, such as physical attacks, towards students who do not belong to the peer group (Kim & Lee, 2000). Another empirical study found that students who perceived themselves as more individualistic were more likely than those who perceived themselves as collectivistic to bully others as well as to be bullied by others (Lee, 2004).

In Japan, Naito and Gielen (2005) argued that Ijime could be well explained from a collectivistic point of view. They argued that Ijime has several collectivistic characteristics, such as viewing bullying as "enmeshment" among girls, and secrecy surrounding Ijime (p 184), meaning that bullies collectively and secretly ostracize victims so that only members of the bullies group know what is happening. Tai (2001) also found that in Japan, bullying occurs more frequently

"when classes have some forms of group competition and collective punishment, in this case anybody seen as interfering with collective goals is in danger of being bullied" (Tai, 2001).

This collective judgment and punishment, however, depends on the level of social disorganization. Naito and Gielen (2005) argued that bullying as a form of collective punishment does not necessarily occur more often in a collectivistic society than in an individualistic society, but that "poorly integrated collective society oriented toward collective punishment and relentless group competition will have more bullying (Naito & Gielen, 2005, p 184). Farrington (1993) also argued, based on his literature review, that bullying occurred more frequently in big inner-city and socially disorganized areas (see also Laub & Lauritsen, 1998).

An empirical study in Korea, which was not based on social disorganization theory, found that in urban areas, the prevalence of bullying is significantly greater than in rural areas, and suggested social isolation as a major source of bullying behavior (Shin, 2000). Even though some have argued that a higher prevalence of bullying in individualistic communities is due to a higher reporting tendency among individualistic people (Seals & Young, 2003), and others argued that urbanization negatively affects bullying prevalence (Park & Son, 1998), it seems obvious that community characteristics have influence over students' behavior in schools. Especially, a comparison of rural areas with low levels of social disorganization and urban areas with high levels of social disorganization might reveal acute differences in the effect of community characteristics on bullying behavior.

6. Summary of the Current Ecological Model of School Bullying

Table 3 summarizes the Bronfenbrenner's (1979) ecological system model and factors relevant to bullying in schools.

Table 3. Bronfenbrenner's Ecological System Model and Factors Relevant to Bullying in Schools

Ecological system model	Factors	Variables
Child as a Center of School Ecology	Individual traits	- Age - Prior experience of bullying victimization - Dominance - Impulsivity - Attitude towards aggression - Fun-seeking
Microsystem	Family interactions	- Perceptions of parents' attitude toward bullying - Perceptions and experiences of authoritarian parenting - Child's experience and witness of domestic abuse - Importance of education
	Teacher interactions	- Perception of teachers' attitude toward bullying - Perception of effectiveness of teacher's intervention - Perception of teacher's moral authority
	Peer interactions	- Power dynamic - Level of difference-acceptance - Coercion of public self - Pseudo friendship

Table 3 continued

Mesosystem	Parental communication	● Parents' communication about knowledge and information regarding bullying with teachers ● Parents' communication about knowledge and information regarding bullying with peers
Exosystem	Gender	● Gender
	Family SES	● Financial strain
	School Climate	● Academic standards and general image of school ● Competitive vs. cooperative school climate ● Cohesion between students and teachers ● Perception of moral atmosphere ● Parental involvement in school boards ● Policy, rules, programs
Macrosystem	Community characteristics	● Individualism vs. Collectivism ● Social disorganization

V. A SUMMARY OF THE CURRENT STUDY

This study recognizes the importance of a holistic and integrative approach to bullying in schools. Since bullying is not isolated behaviors (Farrington, 1993, pp 406-408), bullying should be viewed as a systematic abuse of power within school ecology by an individual or a group of students against one or more individuals. This study borrows Bronfenbrenner's (1979) ecological system model as a theoretical framework to understand multilevel etiological factors affecting bullying behavior within the social contexts of school environments.

The current study attempts to expand the definition of bullying and types of bullying behaviors based on findings from Korean studies. Temporal, severity and visibility elements are added to measure different types of bullying behaviors. This study also recognizes that in different countries, there may be different reasons for bullying. This dissertation, thus, suggests three concepts, fun seeking tendency, level of difference-acceptance and coercion of public self, as important culture-specific reasons for bullying behaviors in South Korea[4].

In addition, this study examines the effect of perceived teacher's attitude toward bullying and social interaction between youths and teachers. These two potential influences are uninvestigated in prior work. This study also will consider school climate as an influence on bullying behaviors. Quality of interaction

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[4] Other influences should be considered for other countries. For example, according to a study conducted in Turkey, the most important and common reason to bully other students was to pretend to be strong (Kepenekci & Cinkir, 2006).

between friends is also measured in this study. Unlike previous SNA research on bullying, this study recognizes the importance of quality of friendship measured not by mutuality, popularity, centrality, or similarity, but by genuineness of the helping network (i.e., whether it is or is not a pseudo friendship network). The proposition is that, to avoid bullying victimization, some students develop a pseudo friendship network with a certain peer group, and to maintain the pseudo friendships, they bully others.

In sum, based on the review of literature and the ecological prediction model developed, this study uses a measure of bullying behaviors, which takes into account visibility, physicality/severity, duration and involvement. It is expected that the following factors increase the levels of bullying behavior in school environments:

- high scores in prior victimization through bullying, dominance, impulsivity, and fun-seeking tendency
- negative perceptions of and experiences with family
- negative perceptions of teachers
- negative peer interactions
    - high score in power dominance tendency
    - low score in levels of difference-acceptance
    - high score in coercion of public self
    - high score in pseudo friendship network
- low levels of parental communications with teachers and with peers
- being male
- lower and upper levels of family SES

-   negative perceptions of school climate

-   more collectivistic communities / peer groups

-   high level of community social disorganization

VI. HYPOTHESES

1. Child as a Center of School Ecology

Individual traits

Hypothesis 1a: Age and grade of students are negatively related to bullying behaviors.

Hypothesis 1b: Prior experience of bullying victimization is positively related to bullying behaviors.

Hypothesis 1c: A strong tendency for dominance is positively related to bullying behaviors.

Hypothesis 1d: Impulsivity is positively related to bullying behaviors.

Hypothesis 1e: Positive attitude towards aggression is positively related to bullying behaviors.

Hypothesis 1f: Fun-seeking tendency is positively related to bullying behaviors.

2. Microsystem Level (Interactions among Individuals)

Experiences in the Family

Hypothesis 2a: Perceived parents' positive attitude towards bullying is positively related to bullying behaviors.

Hypothesis 2b: Perceived and experienced authoritarian parenting is positively related to bullying behaviors.

Hypothesis 2c: Experience and witness of parental domestic abuse is positively related to bullying behaviors.

Hypothesis 2d: The perceived parents' view of the importance of academic

achievement is negatively related to bullying behavior.

Experiences with Teachers

Hypothesis 2e: Perceived teacher's positive attitude toward bullying is positively related to bullying behaviors.

Hypothesis 2f: Perceived effectiveness of teacher's intervention in bullying situations is negatively related to bullying behaviors.

Hypothesis 2g: Perceived lack of teacher's moral authority is positively related to bullying behaviors.

Experiences with Peers

Hypothesis 2h: Power dominance tendency is positively related to bullying behaviors.

Hypothesis 2i: Level of difference-acceptance is negatively related to bullying behaviors.

Hypothesis 2j: Coercion of public self is positively related to bullying behaviors.

Hypothesis 2k: Pseudo friendship is positively related to bullying behaviors.

3. Mesosystem Level (Interactions among Microsystems)

Interactions between Family, Peer, and Teacher

Hypothesis 3a: Perceived level of parent-teacher communication about attitude and information on bullying is negatively related to bullying behaviors.

Hypothesis 3b: Perceived level of parent-peer communication about attitude and information on bullying is negatively related to bullying behaviors.

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4. Exosystem Level (Interactions among Mesosystems)

Interactions between SES, Gender, School Climate and Individuals

Hypothesis 4a: Being male is positively related to bullying behaviors.

Hypothesis 4b: Very high and very low family SES are positively related to bullying behaviors.

Hypothesis 4c: High academic standard in school is negatively related to bullying behaviors.

Hypothesis 4d: General positive image of school is negatively related to bullying behaviors.

Hypothesis 4e: Competitive school climate is positively related to bullying behaviors.

Hypothesis 4f: Cohesive relationship between teachers and students is negatively related to bullying behaviors.

Hypothesis 4g: Positively perceived moral atmosphere is negatively related to bullying behaviors.

Hypothesis 4h: Perceived level of parental involvement in school boards is negatively related to bullying behaviors.

Hypothesis 4i: Perceived effectiveness of school policies, rules, and programs targeting prevention and punishment of bullying behaviors in school is negatively related to bullying behaviors.

5. Macrosystem Level

Interaction between Community and Individuals

Hypothesis 5a: Perceived level of collectivism is positively related to bullying behaviors.

Hypothesis 5b: Perceived social disorganization is positively related to
                   bullying behaviors.

Hypothesis 5c: More collectivistic peer groups are more likely to bully others
                   than less collectivistic peer groups.

CHAPTER 3

METHDOLOGY

I. INTRODUCTION

Traditional bullying research has been criticized for its lack of a theoretical framework and the lack of a multi-level model to view children's environment as a multi-layered ecological setting. As previously mentioned, the definition of bullying also has been controversial, especially when different countries and cultures are considered. In addition, the lack of empirical study of school climate and of the influence of a community's characteristics on bullying behavior in school, especially in Korean studies, has been criticized. This dissertation is designed to address these shortcomings in the bullying literature.

Specifically, this study develops a multiple level prediction model based on ecological system theory. Since the ecological system theory views school settings as complex and multi-layered social contexts in which children and others interact and interconnect with each other, this theoretical framework allows investigation of individual as well as contextual effects. This study also expands the traditional definition of bullying by considering severity, visibility and

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duration of behavior all together. For peer influence, instead of relying on social network measures, such as reciprocated friendship, this study develops four measures of peer group interaction: the power dynamic, level of difference-acceptance, coercion of public self, and pseudo friendship networks. This is an improvement because these four measures of peer group interaction build on the literature on bullying and allow investigation of different aspects of friendship relationships as well as quality of friendship networks.

In terms of research design, this dissertation uses cross-sectional data that will be collected through a multistage cluster sampling method. Even though some scholars have argued that a developmental, ecological approach to bullying requires longitudinal data (e.g., Cairns & Cairns, 1991; Sexton-Radek, 2005), this study is based on cross sectional data due to the time and resource constraints. Scholars have argued that cross-sectional design is inferior to longitudinal design in that the causal direction between factors cannot be conclusive with cross-sectional data (Cairns & Cairns, 1991; King, 2001; MacCallum & Austin, 2000; Singleton & Straits, 1999). Even with structural equation modeling, making causal inferences based on a cross-sectional data is somewhat problematic due to difficulty in establishing the time sequence of causes and effects (Gollob & Reichardt, 1987, 1991; MacCallum & Austin, 2000). This limitation and several reasons for use of cross-sectional data will be discussed further in the next section, Cross-Sectional Research Design. Also, it should be noted that the dissertation research takes a first step in providing evidence of causation, by focusing on hypothesized associations. It is recognized that next steps would be to design longitudinal research that can establish time

order.

Structural equation modeling (SEM) will be used to test and develop the theoretically driven model that has the best fit to the data. SEM is a series of statistical methods that allows the researcher to find a best fitting model having both observed and latent variables (Kline, 1998). In addition, since structural equation modeling is mainly based on covariance, which represents the strength of association between variables, SEM explains patterns of correlation among a set of variables as well as their covariance within a model (Kline, 1998). In other words, SEM allows the researcher to investigate the nature of covariance (i.e., direct and indirect effects) among the variables, and SEM also allows the researcher to find a model that best fits the data by specifying paths of influences.

Since the ecological prediction model of bullying behaviors developed in this study requires multivariate analyses among those systems, as well as investigation of the nature of covariance among those systems, structural equation modeling is considered to be the most appropriate statistical method. With SEM used for this ecological model, it is possible to investigate the influence of each system on bullying behaviors.

In this chapter, specific methodological procedures for research design, measurement, and sampling will be presented. First the use of a cross-sectional design will be discussed. Next will be a discussion of the multistage cluster sampling procedure, as well as specific steps taken for sampling and data collection. In the measurement section, the level of analysis as well as detailed information about measures used in this study will be presented. Finally in the last section of this chapter, analysis procedures will be discussed in detail.

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II. CROSS-SECTIONAL RESEARCH DESIGN

For this dissertation, a cross-sectional design will be used for several reasons. First, since there are time and resource constraints, this study will be based on cross-sectional data. Scholars recognize that cross sectional designs are economical in terms of time and resource compared to longitudinal design (e.g., King, 2001). Since data are collected at one time, there is no need to maintain contacts with subjects, and therefore costs and problems with subject attrition are reduced.

Second, some ecological variables, e.g., perceived community characteristics and school climate, are more easily and efficiently compared with cross-sectional data rather than longitudinal data (Singleton & Straits, 1999). Some scholars have argued that a longitudinal design would be consistent with the developmental approach to bullying phenomenon in schools (e.g., Farrington, 1993). However, a cross-sectional design has some advantages when the focus is on contextual and other effects on dependent variables, especially when there are not many changes over time in the context (Duncan & Kalton, 1987; Singleton & Straits, 1999, pp 247 - 248). Since community characteristics and school climates are not rapidly changing, variation in context is best achieved by sampling different contexts rather than the same context over time.

Third, studies have found that the anonymous questionnaire is a more valid and reliable medium for investigating bullying behaviors (see Section 2. Self-evaluative and Anonymous Measures). Since longitudinal research design usually requires identifiers to link data collected at different times, it requires

researchers to collect any personal information. Collection of any personal information in longitudinal research on bullying, thus, may possibly hinder valid and reliable data collection. Consequently, it is possible that a cross-sectional research design is most suitable for the study of bullying behavior.

In addition, even though cross-sectional data has limitations for drawing conclusions about causal direction or reciprocal relationships between factors (Cairns & Cairns, 1991; Elliott & Harwin, 1974), establishing correlations between variables is an important first step in drawing any inference about causation (Singleton & Straits, 1999). Furthermore, especially when writing about structural equation modeling (Gollob & Reichardt, 1987, 1991; MacCallum & Austin, 2000), some scholars have argued that to some extent investigation of causal direction and reciprocal relationship is possible when one of the following two assumptions is met, the instantaneous time interval assumption, and the assumption of unchanged causal variables (MacCallum & Austin, 2000). The instantaneous time interval assumption, which cannot be met in the present study, and which is inconsistent with the developmental perspective, means that the time interval in which the causal influence operates is instantaneous. This justifies "concurrent measurement of variables in a cross-sectional design" (MacCallum & Austin, 2000, p 214). The assumption of unchanged causal variables, which is consistent with the theoretical framework for this research, is that causal variables do not change between the time that causal effects occur and the time that the causal variables are measured (MacCallum & Austin, 2000). When one of the two assumptions is met, then, researchers can draw causal inferences using structural equation modeling and cross-sectional data, although the inference will

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not be as strong as it would be from a longitudinal research design (Gollob & Reichardt, 1987, 1991).

In addition to this justification, this study attempts to test for the possible impact of omitted variable(s) which may have strong influence on bullying behavior. With cross-sectional non-experimental data, inferences about causality are weak, in part because of the possible existence of one or more variables which may be omitted but important in the relationship between the dependent variable and independent variables (Frank, 2000; Rosenbaum, 1986; Sobel, 1995, 1996). In other words, to make causal inference stronger, or even feasible, research using cross-sectional non-experimental data should identify possible confounding variable(s) that may alter statistical inference based on regression coefficients. In this dissertation, there is a possibility that a confounding variable could alter the statistical significance of a correlation between bullying behavior (a dependent variable) and other independent variables. The confounding variable suspected but which will not be studied is prior propensity for bullying behavior.

There are three reasons for omitting variables measuring the prior propensity for bullying behavior in this study. First, bullying within Korean schools has not been recognized as illegal behaviors. Not many school authorities have punished bullies unless there were severe criminal charges against bullies and physical damage to victims. Thus, there are no official records of punishment of bullying behavior, such as suspension records, in Korean schools. Second, even if there were records of punishments for bullying, in Korea family SES has a significant influence on punishment of deviant youths. Parental involvement,

especially when families have high standing in the society, would greatly reduce the number of formal reactions to bullying behaviors. Finally, it is likely that youths may not accurately recall their prior bullying behaviors. In addition, it is also possible that youths may distinguish their prior bullying behaviors from current bullying behaviors since situations and/or victims have changed.

To investigate the potential influence of the confounding variable, i.e., prior propensity for bullying behavior, this study employs a statistical method (i.e., ITCV: Impact Threshold for a Confounding Variable, Frank, 2000), which is an innovation in sensitivity analysis, compared to the sensitivity analysis originally suggested by Rosenbaum (1986). According to Frank (2000), there are basically two ways to make causal inference stronger based on regression coefficients, using experimental data with random assignment or including confounding variable(s) in a regression model. However, in some situations, such as this study, it is not possible to include such variables. Frank's ITCV addresses this issue, by indexing "the impact of confounding variable on the inference of a regression coefficient" (p 147). In this case, the confounding variable is a hypothetical unobserved variable, and the index is a function of "the hypothetical correlations between the confound and outcome, and between the confound and independent variable of interest" (p 150). Unlike the original sensitivity analysis, the ITCV allows researchers to focus on causal inference based on testing the credibility of the statistical significance test (Frank, 2000). Using this method, this study examines how large the correlations between the confound and the dependent / independent variables should be to alter causal inferences that this study will draw based on results of the statistical significance tests using cross-sectional

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non-experimental data. In other words, this method will provide a range of

correlations between the prior propensity for bullying behavior with other

variables, within which causal inferences that this study will draw are treated as

credible.

III. SAMPLING AND DATA COLLECTION PROCEDURES

1. Sampling

This dissertation used a multistage cluster sampling method. Since it was impractical to collect the complete list of all middle school students in South Korea, this project broke down the population into several clusters. According to sampling theory, sampling error can be reduced by two factors in the sample design: 1) a large sample produces a smaller sampling error than a small sample does, and 2) a homogeneous population produces samples with smaller sampling error than a heterogeneous population does. The stratification is based on this second element in the sampling theory. The ultimate function of stratification is to organize the population into homogeneous subsets by maintaining heterogeneity between subsets and to select proportionate samples from each stratum.

To ensure variation in effects of community characteristics on bullying behaviors, this study used levels of social disorganization, measured by mobility and population density (for more information, see Bursik, 1988; Moriatry, 1999; Sampson & Groves, 1989; Shaw & McKay, 1969), as the first stratification of the population. This stratification involves forming lists of high, medium, and low disorganization areas, and proportionately sampling communities from these lists (see Singleton & Straits, 1999). Since Korean school districts are based on governmental administrative districts (the total number of the districts = 232), the annual governmental report on population mobility and density was used to stratify the districts. The population mobility per 10,000 is calculated by,

$$Mobility = \frac{Input + Output}{Total} \times 10,000$$

where the input is the total number of emigrant population, the output is the total number of immigrant population, and the total is the total number in the population of each district during 2004. The population density is simply calculated by,

$$Density = \frac{Total}{Area(Km^2)}$$

where the total is the total number in the population, and the area is the total square kilometers of each district. These two proxy measures were then combined to create a scale for the levels of social disorganization. Based on the score, the 232 Korean governmental districts were divided into three categories, low, medium, and high levels of social disorganization areas. The result of this process is presented in Appendix A. 232 Korean Governmental Districts Categorized into Three Levels of Social Disorganization.

Based on the sampling frame, this study randomly selected two districts from each stratum, i.e., high, medium, and low levels of social disorganization areas. This study, then, performed random selection of one middle school (secondary sampling units) from each area. This random sampling process generated six middle schools (two middle schools from each high, medium, and low social disorganization district). Typically, Korean middle schools contain three

grades (from 7th to 9th grade). Within each school, two classes (third sampling units) were selected from each grade of the schools. Studies found that bullying rates dramatically decrease in the third grade of the middle school period due to emphasis on academic achievement to enter better high schools (KDE, 1999; Moon, 2002). Hoping to capture this variation, this study included all three grades of middle school to see the effect of emphasis on academic achievement on bullying behavior. This multistage cluster sampling process produced the total number of 36 classes. Finally, a self-report survey was administered to students who were in the classes selected. Since typical classes contain about 40 students, the total expected sample size was 1440. Figure 2 shows the multistage cluster sampling process used in this study.

Figure 2. Multiple Cluster Sampling of Korean Middle School Students
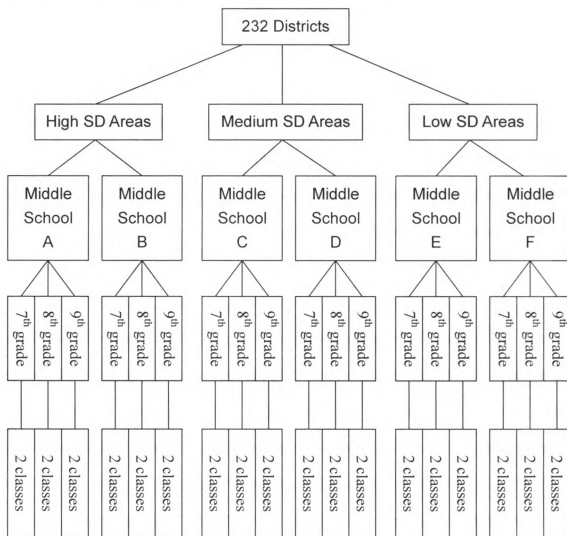
2. Data Collection Procedure and Response Rates

Before administration of the survey, this researcher conducted a field test of the Korean version of the survey questionnaire. For the field test, this researcher recruited five Korean students who were enrolled in middle schools in the United States. (It is common for Korean students to study in the United States for one or two years during middle school.) Each individual was asked to read

about 30 items without responding to the questions. Once they finished reading them, in individual interviews, they were asked questions, such as "Is there any question you don't understand?", "Is there any word that you don't know the meaning?", "Is there any suggestion to improve this survey?", or "What do you think these questions are asking?" After individual interviews with five students, the youths were asked to discuss what this researcher wanted to know. During the interview sessions, students were encouraged to talk about whatever they felt and thought of this survey and their ideas to improve this survey. Based on field test results, necessary revisions were made.

To administer the self-report survey developed for this study, the researcher recruited data collectors to actually administer the survey. The data collectors were recruited from appropriately educated individuals (e.g., teachers, social scientists) known personally to the researcher, and were further educated and trained about subjects' right to privacy and appropriate procedures to handle the survey questionnaires. Specifically, the data collectors were trained in a protocol to recruit youth and teachers to participate in the study, and obtain parental consent in writing. To obtain the consent forms, the data collectors first sent out the parental consent forms to the subjects' schools, and explained the right to privacy, anonymity, and volunteerism to students. During the second visits to the schools (between February 12 and 17, 2007), the data collectors collected the consent forms. Once the data collectors fulfilled the consent process adequately, then the data collectors handed out the survey questionnaire to students whose parents agreed to voluntary participation of their children in the survey. Children also could refuse to participate in the research at this point.

Since the survey was anonymous, there was no chance to identify subjects once they handed in the questionnaire to the data collectors.

Table 4 shows the response rates for each of six different schools. Overall, the average response rate was 92%. Interestingly, the largest and the smallest schools had lower response rates than other schools.

Table 4. Response Rates for Survey Questionnaire

School	Total number of students	Number of survey returned	%
A	219	205	93
B	298	234	78
C	237	234	98
D	199	198	99
E	159	132	83
F	238	235	98
Total	1350	1238	92%

IV. MEASUREMENT

This dissertation uses self-evaluative anonymous measures of bullying behaviors. Consistent with ecological systems theory and research in the tradition of that theory, the measurements used in this study are carefully developed to reflect individual level perceptions or experiences on specific factors. In this section, the individual level, self-evaluative and anonymous measures used in this study are discussed in detail. In addition, a threat to measuring context through perceptions of exo- and macro-system factors, and a technique used to minimize the threat to validity are discussed.

1. Level of Analysis

According to Bronfenbrenner (1979), the effects of different levels of factors on individual behaviors can be measured at the individual level, because the effects are perceived not as properties of the factors at different levels, but as individual psychological outcomes of interactions between the person and the factors at different levels. In other words, individual developmental changes are not measured by correlations between static characteristics of an individual and environments, but they are studied in terms of changes in "content – what is perceived, desired, feared, thought about, or acquired as knowledge, and how the nature of this psychological material changes as a function of a person's exposure to and interaction with the environment" (Bronfenbrenner, 1979, p 9). Consequently, it is assumed that individual level measures of experiences and perception can be used to measure the multiple factors at different levels.

Despite the tradition of measuring multilevel influences with individual reports in the research that has built on Bronfenbrenner's ideas, the appropriateness of use of individual level measures should receive serious consideration. It can be argued that once school climate and community characteristics are measured by individual level perceptions, then such social contexts may change quickly, because perception as a function of individual behaviors and attitudes could change fairly quickly. For example, how consistently do children perceive that their school is competitive or is well equipped with anti-bullying policies? How consistently do children perceive that their neighborhood is collectivistic? Do their perceptions remain unchanged during a month, a semester, or a year? If the perception does change fairly quickly, then the individual measures of perception of the social contexts may not be reliable measures for the exo- and macro-system levels. In addition, this further weakens the strength of causal inference to be drawn from this cross-sectional research.

To deal with the threat to the validity of individual level measures of organizational level factors, this study provides choices that encourage respondents to consider stability of the context they are rating. Specifically, youth are asked to rate how often parents and teachers have interacted during the last school year, not just how strongly they agree that such interaction has occurred.

2. Self-evaluative and Anonymous Measures

Researchers in criminology have validated self-evaluative anonymous measures of delinquency by comparing those measures with official delinquency

records. Since the earliest prototype of self-reported delinquency scales was developed by Short and Nye (Short & Nye, 1957), the self-report measure of delinquency has greatly evolved to become a reliable and valid method (Huizinga & Elliott, 1986; Thornberry & Krohn, 2000). More relevant to bullying, previous bullying studies found that self-report anonymous measures are reliable and valid. Even though there is contradicting evidence in a study that suggests that peer and teacher reports yield consistent identification of bullies and victims (Cornell & Brockenbrough, 2004), the majority of bullying studies found that a self-evaluative and anonymous measure of bullying is a reliable method (Ahmad & Smith, 1990; Chan, Myron, & Crawshaw, 2005; Farrington, 1993; Xie et al., 1999). For example, based on review of six previous studies on bullying, Farrington (1993) argued that the self-report survey is more reliable than the interview method. Ahmad and Smith (1990) also suggested that the anonymous questionnaire is more valid and reliable because denial of bullying behavior could be the biggest source of invalidity of measurement through the interview method with identification. In another study, Xie et al. (1999) found that teacher evaluation is far different from self-evaluation in bullying studies, because teachers often were not aware of bullies and victims. More recently, one study of 562 students in Toronto, Canada, suggested that respondents reported the same amount of bullying and victimization regardless of whether they put their names on the surveys (Chan et al., 2005).

In addition to these previous findings, this study uses the self-evaluative method to identify bullying behaviors because it is possible that teacher evaluation in Korea may not be reliable due to the Asian culture. Naito and

Gielen (2005) found that in Japan, teacher reports of bullying are unreliable, because teachers tend to under-report bullying incidents to protect their reputation and jobs. They suggested that the Asian culture's emphasis on the importance of dignity and reputation might prevent teachers from reporting school violence (Naito & Gielen, 2005). The actual anonymous self-report survey questionnaire used for this dissertation is presented in Appendix B.

3. Operationalized Variables

    A. Dependent Variable: Bullying Behaviors

There are at least 9 instruments developed to measure bullying behaviors in schools (for review, see Crothers & Levinson, 2004). Among them, this dissertation uses an improved Korean version of the Olweus' bully/victim questionnaire. This survey questionnaire is commonly used in Korean studies and its validity and reliability have been tested in a couple of studies (e.g., Lee, 2004, reliability =.92). In addition to the questions about frequency of bullying behaviors, self-reports will also be obtained to categorize youth according to the type of bullying they are involved in (i.e., severe chronic, moderate chronic / severe non-chronic, and moderate/minor non-chronic bullying). The source of scale items for the different dimensions of bullying are:

    1) Visibility (Dishion et al., 1995)
- Covert bullying
- Overt bullying

2) Physicality/Severity (Carney, 2005; Coloroso, 2003; Dishion et

   al., 1995; Olweus, 1995, 2003)

   ■ Relational bullying: spreading rumors, leaving out of things

     on purpose, ignoring

   ■ Verbal bullying: threatening, taunting, teasing, name

     calling, harassing sexually or talking about physical

     defects

   ■ Physical bullying: kicking, hitting, cutting with knife,

     breaking bones

3) Duration (Boulton & Smith, 1994; KEDI, 1998; Kim, 2004;

   Salmivalli et al., 1998; Shim, 2004; Smith & Brain, 2000)

   ■ Week, month, semester, year

   ■ Middle school, high school

All items are presented in Appendix B.

B. Independent Variables

The independent variables in this study are divided into the five

categories: 1) individual traits, 2) microsystem, 3) mesosystem, 4) exosystem,

and 5) macrosystem variables. Whenever possible, existing items shown to be

valid in prior research, and items previously used in Korea, were used. Of course,

in some cases, these were no measures that had been used in research in Korea

or in any country. Consistent with Bronfenbrenner's and ecological theorists'

approach, all variables are measured at individual level.

1) Individual Traits

This dissertation measures individual traits, such as age, prior experience of bullying victimization, tendencies for dominance and impulsivity, attitude towards aggression, and fun-seeking tendency (Ah et al., 2005; Baldry, 2003; Bentley & Li, 1995; Bosworth et al., 1999; Boulton & Smith, 1994; Espelage & Swearer, 2003; Farrington, 1993; Kim, 2001; Lee, 2000; Lee, 1999; Naito & Gielen, 2005; Park, 2002; Rigby, 2004; Seals & Young, 2003; Seo & Han, 2004; Shin, 2000). The respondents' age is simply measured in an open-ended question. The prior experience of bullying victimization is measured by an item: Have you experienced the above things [15 items of bullying behaviors] in an earlier grade? To measure tendency for dominance, a modified version of the Standardized Personality Evaluation Test (Lee, Byun, & Jin, 1969) is used. This version includes four items: 1) It is difficult to refuse when my friends ask me to do a favor, 2) I usually try to avoid confrontation even if I am right, 3) I usually try to observe rules and regulations, and 4) I hate to lose in an argument. To measure impulsivity, a modified version of the four-item scale in the Standardized Personality Evaluation Test (Lee et al., 1969) is used. The four items are 1) It is difficult for me to sit still during the class, 2) I start things but have a hard time finishing them, 3) I do things without thinking or planning, and 4) I need to use a lot of self-control to keep out of trouble. To measure attitude towards aggression, a modified version of the Beliefs Supportive of Violence Scale from the Houston Community Project Scale (Dahlberg, Toal, & Behrens, 1998) is used. This modified version was developed by Bosworth et al. (1999), and the reliability was .71. The present study will use four of the six original items: 1) If I walked

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away from a fight, I'd be a coward, 2) It's okay to hit someone who hits you first, 3) If a kid teases me, I usually cannot get him/her to stop unless I hit him/her, and 4) If I refuse to fight, my friends will think I'm afraid. Fun-seeking tendency is measured by the agree-disagree items: 1) Did you do these things [bullying behaviors] to another person? For fun? and 2) My friends enjoy it, because they think I am having fun with them, 3) It is fun to watch Wangtta students go through these things [bullying behaviors], and 4) There is nothing wrong with these things [bullying behaviors] because they are just for fun. These items were developed specifically for the present research, since no similar measures have been used in other studies.

2) Microsystem Variables

Family interactions are indicated by perceptions of parents' attitude towards bullying, perceptions and experiences of authoritarian parenting, child's experiences and witness of domestic abuse, and perceived parental views on the importance of education (Baldry, 2003; Batsche & Knoff, 1994; Christie-Mizell, 2003; Curtner-Smith et al., 2006; Espelage et al., 2000; Gladstone et al., 2006; Kim, 2001; Kim & Lee, 2000; Lee & Kim, 2000; Moon, 2002; Naito & Gielen, 2005; Shields & Cicchetti, 2001; Shin, 2000). Parents' attitude towards bullying in schools is measured by six agree-disagree items: 1) I think my parents do not like me teasing other students, 2) I think my parents do not like me hitting other students, 3) I think my parents do not like me making fun of other students, 4) I think my parents do not care about me teasing other students, 5) I think my parents do not care about me hitting other students, and 6) I think my parents do

not care about me making fun of other students. The two measures of authoritarian parenting were developed based on the results of previous studies (Baldry, 2003; Batsche & Knoff, 1994; Flouri & Buchanan, 2003; Shields & Cicchetti, 2001). The two items are: 1) My parents use physical discipline for punishments, and 2) I think my parents want to have control over almost every aspect of my life.

Teacher interactions are measured by youths' perception of teachers' attitude towards bullying, perception of effectiveness of teachers' intervention in bullying situation, and perception on teachers' moral authority (Espelage & Swearer, 2003; Naito, 1990; Park, 2003; Rodkin & Hodges, 2003; Yang, 2005). The six items for perception of teachers' attitude towards bullying are: 1) I think my teacher does not like me teasing other students, 2) I think my teacher does not like me hitting other students, 3) I think my teacher does not like me making fun of other students, 4) I think my teacher does not care about kids teasing classmates in school, 5) I think my teacher does not care about kids hitting classmates in school, and 6) I think my teacher does not care about kids leaving out classmates in school. Three items for the perception of teachers' moral authority are developed based on the results of the study conducted by Naito (1990). The three items are: 1) I don't care about what my teacher says about morality, 2) I think my classmates do not care about what my teacher says about how classmates treat each other, and 3) I think my teacher's moral standard is old-fashioned, so that it isn't acceptable in my generation. These items were developed specifically for the present research, since no similar measures have been used in other studies.

Peer interactions are measured by four aspects of peer relationship interactions: 1) power dynamic, 2) level of difference-acceptance, 3) coercion of public self, and 4) pseudo friendship (Cairns & Cairns, 1991; Coloroso, 2003; Graham & Juvonen, 1998; KEDI, 1998; Kim & Lee, 2000; Kim, 2004; Lee, 2004; Long & Pellegrini, 2003; Naito & Gielen, 2005; Park, 2002; Park & Son, 1998; Pellegrini & Long, 2002; Rigby, 2004, 2005; Seo & Han, 2004; Shin, 2000; Twemlow et al., 2001; Young & Sweeting, 2004). Each of these four aspects of peer interactions is measured by a four-item scale carefully developed based on the results of the previous studies. In addition, since Korean school districts have a very high proportion of students who stay together as classmates from elementary through high school, peer groups are usually not different inside and outside of school. Thus, the focus will be on school-based peer groups.

3) Mesosystem Variables

Mesosystem variables measure interactions between two microsystems. Two measures are 1) perceived frequency of parent-teacher communication regarding knowledge and information about bullying in school, and 2) perceived frequency of parent-peer communication regarding knowledge and information about bullying in school (Flouri & Buchanan, 2003; Natvig et al., 2001). The items for parents' communication with teachers are: 1) how often in this school year did your parents and teachers talk to each other to share information about students teasing others?, 2) how often in this school year did your parents and teachers talk to each other to share information about students hitting others?, and 3) how often in this school year did your parents and teachers talk to each other to share

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information about students making fun of others? Three similar questions were developed to measure the parents' communication with peers: 1) how often in this school year did your parents and friends talk to each other to share information about students teasing others?, 2) how often in this school year did your parents and friends talk to each other to share information about students hitting others?, and 3) how often in this school year did your parents and friends talk to each other to share information about students making fun of others? Responses for these perception measures are intended to encourage students to report not on just a recent communication, but rather on a consistent pattern of communication over time. Thus the answers are "this never happened this school year," "this happened once this school year," "this happened a few times this school year," "this happened more than a few times this school year," and "this happened very often this school year."

4) Exosystem Variables

Exosystem variables include gender, family SES, and school climate. The family SES is measured by 1) perceived levels of family SES, 2) parents' jobs, and 3) monthly parental income (Batsche & Knoff, 1994; Kim, 2001; Lee, 2000; Lee, 1999; Park & Son, 1998; Rigby, 2004; Rodkin & Farmer, 2000; Shin, 2000; Wolke et al., 2001; Yang, 2005). The school climate variable consists of five subcategories, perceived school's academic standards, perceived competitive vs. cooperative school climate, perception of moral atmosphere, perceived parental involvement in school boards, and perceived effectiveness of school's policies, rules, and programs for anti-bullying phenomenon. Each of these subcategories

is measured by two agree-disagree questions (three questions for perception of effectiveness of anti-bullying policies, rules and programs) developed based on the results of the previous studies (Espelage & Swearer, 2003; Hoshino, 2001; Masataka, 1998; Naito & Gielen, 2005; Swearer & Doll, 2001; Tai, 2001).

5) Macrosystem Variables

Macrosystem variables include levels of individualism or collectivism, and levels of social disorganization. The levels of individualism and collectivism are measured by the Korean version of the INDCOL (*Ind*ividualism and *Co*llectivism) measure developed by Kim (1996). The original INDCOL measure was developed by Singelis, Triandis, Bhawuk, and Gelfand (1995). The Korean version of the INDCOL included some culture-specific measures and excluded culturally irrelevant questions to Korean context (Kim, 1996). According to the original developers of the measure, a vertical dimension emphasizes hierarchical order, and a horizontal dimension emphasizes equality among members (Singelis, Triandis, Bhawuk, & Gelfand, 1995). Thus, vertical individualists (VIND) are competitive and emphasize victory over others, horizontal individualists (HIND) emphasize independence and autonomy. By contrast, vertical collectivists (VCOL) value the group and its goals over family and individuals, and horizontal collectivists (HCOL) emphasize cooperation and affection among members. Each measure contains 8 questions, but this dissertation uses 4 questions for each category based on reliability scores presented by Kim (1996).

To measure youths' perception of levels of social disorganization, this study develops three items based on previous research results (Sampson &

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Groves, 1989; Sampson, Raudenbush, & Earls, 1997): 1) my neighbors do not

care what my friends do in this area, 2) teenagers in my neighborhood are out of

control, and 3) it is difficult for kids to make friends in my neighborhood.

V. ANALYSIS PROCEDURE

The analysis of the data in this study consisted of two phases. In the first phase, data preparation, the first-order factor analysis, basic statistical analyses, hypothesis testing, and sensitivity analysis were carried out. In the second phase, the second-order confirmatory factor analysis, SEM, and multiple group analysis were carried out.

Specifically, in the first phase, frequency distributions were examined for all variables to check accuracy of data entry. In addition, by examining the descriptive statistics, outliers were identified. To perform SEM, careful treatment of missing data is required. Thus, this study carefully dealt with missing information by using the multiple imputation method. More specific procedures which have been followed are presented in the next section. In the next step, factor analysis and reliability tests were performed to develop scales for the variables identified in the literature review section. This first-order factor analysis was carried out to prepare for testing the hypotheses presented in Chapter 2. The multiple regression analysis was used to test for the connection of each independent variable to the dependent variables. Descriptive statistics were obtained, and bivariate and multivariate analyses were performed. Multicollinearity tests (i.e., tolerance and variance inflation factor) were also performed, when suspected intercorrelations among some variables were observed. Once multivariate regression analysis was completed, the ITCV, a type of sensitivity analysis, was performed to estimate impacts of the omitted variable, e.g., prior bullying propensity, on significant relationships found in the regression.

In the second phase, the second-order confirmatory factor analysis was performed for the dependent variables and some independent variables (i.e., the scales created through the factor analyses and the reliability tests in the data preparation stage) to make appropriate decisions about which items to include as indicators of latent variables. With path modeling, this study suggested a basic hybrid model (a combination of the confirmatory factor analysis and the path model), and respecified the basic model based on the results of a series of SEM analyses. Finally, multiple group analysis was attempted to examine any difference between subgroups which were divided by severity, duration, and visibility of bullying behaviors.

As a simplified basic model, the following theoretically derived model was tested to establish the fit to the sample data:

Figure 3. An Ecological Prediction Model of School Bullying
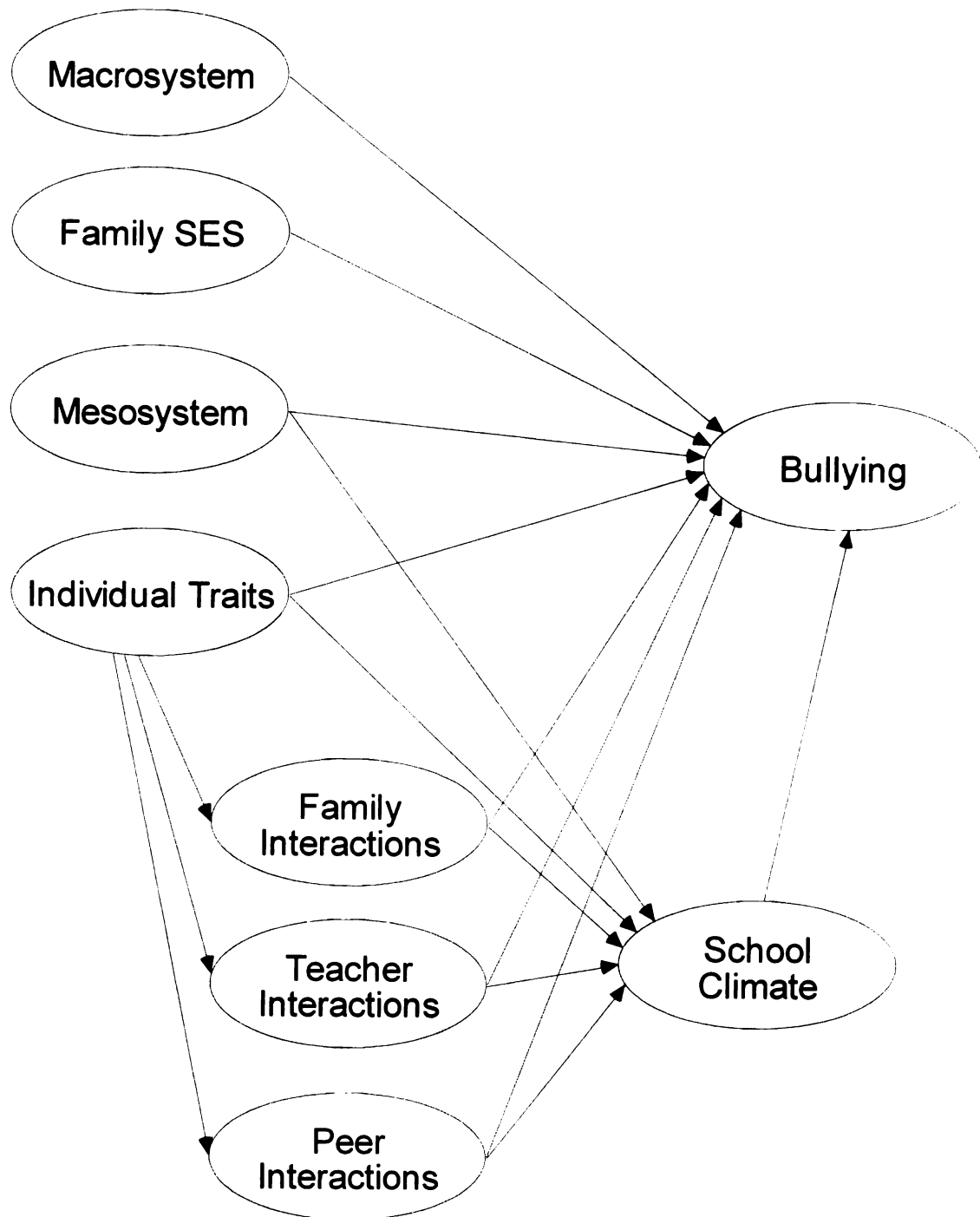
The .05 alpha level was the criterion for the statistical significance test in this analysis. For testing the model fit, the following standardized fit indexes were used: x^2/df, the Jöreskog-Sörbom *Goodness of Fit Index* (GFI), and the *Adjusted Goodness of Fit Index* (AGFI). Other fit indexes, such as the Bentler Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA), were reported. For the multiple imputation for missing data, LISREL 8.80 was used. For the descriptive statistics, correlation, and the multicollinearity tests, the Statistical Package for the Social Science (SPSS) 13.0 was used, and for the structural equation model, the AMOS 5.0 program was used.

CHAPTER 4

FINDINGS

I.   Data Preparation

II.   Factor Analysis, Scales, and Reliability Tests

III.   Univariate, Bivariate and Multivariate Analyses

IV.   Sensitivity Analysis: ITCV

V.   Structural Equation Modeling: Basic Model

VI.   Structural Equation Modeling: Multiple Group Analysis

I. DATA PREPARATION

Structural equation modeling (SEM) requires careful preparation and screening of a raw data set to avoid violations of assumptions and failure in the iteration process, which is often referred to as a "crash" (Kline, 1998, p 67). In this section, the procedures taken to prepare the raw data for a model-fitting analysis will be described. The procedures included treating outliers, checking normality in distributions, checking patterns of incomplete data, and later imputing the missing observations for SEM analysis.

First, the results of simple univariate frequency tests of all the variables identified no extreme values. Second, since SEM requires more conservative adherence to the normal distribution assumption than other statistical analyses, such as ANOVA (Kline, 1998), this study examined normality of frequency distributions by running normal probability plots of all variables except the dependent variables measuring frequency, severity, visibility, and duration of bullying behaviors. Table 5 shows the results of the univariate normality tests.

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Table 5. Univariate Normality Tests: Skew and Kurtosis Values

Items	Skew	Kurtosis
120. How often in this school year did your parents and teachers talk to each other to share information about students teasing others?	4.2	18.8
121. How often in this school year did your parents and teachers talk to each other to share information about students hitting others?	4.5	22.9
122. How often in this school year did your parents and teachers talk to each other to share information about students making fun of others?	5.3	30.4
123. How often in this school year did your parents and friends talk to each other to share information about students teasing others?	4.4	19.9
124. How often in this school year did your parents and friends talk to each other to share information about students hitting others?	4.6	22.6
125. How often in this school year did your parents and friends talk to each other to share information about students making fun of others?	4.7	24.5
All other items	-3.0 ~ 3.0	-10.0 ~ 10.0

The values of the univariate skew index indicate the direction and magnitude of skew. It is difficult to provide clear guidelines about how much non-normality is problematic, but an acceptable range for skewness is -3.0 ~ +3.0, and an acceptable range for kurtosis is -10.0 ~ +10.0 (Chou & Bentler, 1995; Hu & Bentler, 1995; West, Finch, & Curran, 1995). As shown in the Table 5, the values of skew and kurtosis for all independent variables fell in the acceptable ranges respectively, meaning that those variables have normal distributions. However, six items measuring parental communication with teachers and peers

were extremely positively skewed. Almost all subjects answered that their parents have never met teachers or their friends during the 2006 school year (see Table 6). These high percentages were not unexpected within Korean schools. Unfortunately, it is unlikely that any transformation will normalize those variables.

Table 6. Univariate Statistics of the Non-normally Distributed Items 120 – 125

Item Number	Mean	St.D.	Percentage of "Never"
120	1.13	.50	92.0
121	1.13	.48	91.4
122	1.09	.43	93.9
123	1.14	.56	91.8
124	1.14	.55	91.7
125	1.12	.51	92.6

Finally, this study tried to identify any pattern of incomplete data. Most of the variables have less than 16 missing cases. Six variables were identified as having more than 19 missing cases. To see whether there is any systematic pattern of missing data, this study examined the frequencies of missing data by grouping those six variables (see Table 7).

Table 7. Group Comparison of Frequencies of Missing Data

Items (# of missing data)	Q31 (20)	Q32 (22)	Q51 (24)	Q148 (22)	Q149 (19)	Q156 (19)
School (Region)						
School A	6 (2.9)*	6 (2.9)	4 (2.0)	6 (2.9)	6 (2.9)	5 (2.4)
School B	8 (3.4)	9 (3.8)	4 (1.7)	3 (1.3)	5 (2.1)	3 (1.3)
School C	1 (0.4)	1 (0.4)	2 (0.9)	2 (0.9)	1 (1.4)	1 (0.4)
School D	4 (2.0)	4 (2.0)	5 (2.5)	3 (1.5)	2 (1.0)	2 (1.0)
School E	0 (0.0)	0 (0.0)	5 (3.8)	6 (4.5)	4 (3.0)	5 (3.8)
School F	1 (0.4)	2 (0.9)	4 (1.7)	2 (0.9)	1 (0.4)	3 (1.3)
Sex						
Male	8 (1.1)	10 (1.4)	14 (2.0)	11 (1.5)	8 (1.1)	9 (1.4)
Female	12 (2.3)	12 (2.3)	10 (1.9)	11 (2.1)	11 (2.1)	9 (1.7)
Grade						
7th grade	6 (1.5)	6 (1.5)	6 (1.5)	8 (2.0)	6 (1.5)	6 (1.5)
8th grade	5 (1.0)	6 (1.2)	7 (1.4)	6 (1.2)	6 (1.2)	5 (1.0)
9th grade	9 (2.6)	10 (2.9)	11 (3.2)	8 (2.3)	7 (2.1)	8 (2.3)
Family SES						
Missing	0 (0.0)	0 (0.0)	2 (9.5)	0 (0.0)	0 (0.0)	0 (0.0)
Upper class	2 (1.9)	2 (1.9)	5 (4.7)	4 (3.8)	3 (2.8)	1 (0.9)
Upper-middle	2 (0.6)	3 (0.9)	2 (0.6)	5 (1.5)	4 (1.2)	4 (1.2)
Middle class	16 (2.6)	17 (2.7)	13 (2.1)	12 (1.9)	10 (1.6)	13 (2.1)
Lower-middle	0 (0.0)	0 (0.0)	2 (1.4)	1 (0.7)	2 (1.4)	1 (0.7)
Lower class	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Academic achievement						
Missing	1 (4.3)	1 (4.3)	3 (13.0)	1 (4.3)	1 (4.3)	1 (4.3)
Upper 10%	3 (1.5)	3 (1.5)	3 (1.5)	5 (2.6)	3 (1.5)	1 (0.5)
Upper 20%	3 (1.7)	4 (2.3)	0 (0.0)	3 (1.7)	3 (1.7)	2 (1.1)
Upper 30%	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.7)	2 (1.7)	0 (0.0)
Middle	8 (2.1)	9 (2.3)	9 (2.3)	5 (1.3)	4 (1.0)	8 (2.1)
Lower 30%	3 (1.6)	3 (1.6)	3 (1.6)	4 (2.1)	3 (1.6)	4 (2.1)
Lower 20%	0 (0.0)	0 (0.0)	5 (5.4)	2 (2.2)	2 (2.2)	3 (3.2)
Lower 10%	2 (3.3)	2 (3.3)	1 (1.7)	0 (0.0)	1 (1.7)	0 (0.0)

* Note: Figure in the parenthesis is percentage of the missing data.

The numbers in percentages are the proportion of missing data for each of the subgroups being compared. For example, in the first column, for Q31, 2.9% of responses were missing for School A, 3.4% of responses were missing for School B, and so on.

Items 31 and 32 asked about visibility of bullying victimization (see Appendix B). Item 51 measured duration of bullying behavior, and items 148 and 149 measured subjects' perception of having an independent personality. Item 156 measured subjects' perception of collectivistic characteristics. As shown in the table, the missing data of those six variables have been categorized into different subgroups of each of the demographic variables, regions (schools), sex, grade, family SES, and academic achievement. The results suggest that there is no systematic pattern of missing data. In other words, the missing observations occurred completely at random (*missing completely at random*, MCAR) (Kline, 1998; Rubin, 1976). Since there is no systematic loss of data, dealing with missing data can be carried out, with a certain level of confidence, by either deletion (listwise or pairwise) or imputation. For model-fitting analysis (SEM), this study used the multiple imputation method for dealing with missing data to retain as many cases as possible. According to Rubin (1987), multiple imputation replaces missing values with a set of possible values, and the multiple imputation contains uncertainty of selecting the right value to impute (Rubin, 1987, see also; Schafer, 1997). Many scholars suggested that the best *ad hoc* method of imputation is the multiple imputation method (Canchola, Neilands, & Catania, 2002; SAS, 2002; Schafer, 1997; Toit & Mels, 2005). This study used LISREL 8.8 to conduct the multiple imputation, and used the EM (Expected Maximization)

algorithm rather than MCMC (Markov chain Monte Carlo) algorithm, since the data set showed monotone missing data patterns. The monotone missing data pattern is the case in which a certain variable is missing, and then a set of subsequent variables are missing. The results from the multiple imputation showed that the convergence was achieved after 6 iterations, and the percentage of the missing values was 0.76, meaning that only .76% of the total data were missing.

II. FACTOR ANLAYSIS, SCALES, AND RELIABILITY TESTS

Factor analysis and reliability tests were used to develop scales. First, a factor analysis was done for the items hypothesized to be part of each scale to determine whether one or more constructs was being indicated. All factor analyses were done with Varimax rotation. All variables presented in Table 8 had all items load on one factor, except two variables, perceptions of parents' attitude towards bullying and perceptions of teachers' attitude towards bullying. These two variables loaded in two factors: parents (or teachers) "don't like bullying" and parents (or teachers) "care about bullying." Thus two separate scales were developed for perceived parent and teacher attitude towards bullying.

For all scales, reliability coefficients were calculated to determine whether items formed a reliable scale. When there was a possibility of increasing a reliability coefficient, items have been selected and/or deselected based on changes to the reliability when items were dropped from the scale. Table 8 shows the final results of factor analysis followed by reliability tests for all scales developed for this study. The alpha levels for most of the scales were relatively high and fell in an acceptable range. However, several scales have weak, but acceptable, alpha scores. Those scores of the scales are highlighted in the Table below.

Table 8. Reliability Coefficients for Scales Used

Scales	# of Items	Alpha
Dependent Variables		
Relational bullying	4	.84
Verbal bullying	6	.81
Physical bullying	5	.78
Duration	3	.61
Visibility	5	.67
Involvement	3	.50
Independent Variables		
Individual traits		
Academic achievement	2	.92
General positive behaviors	3	.76
Prior experiences of bullying victimization		
Relational bullying	4	.76
Verbal bullying	6	.80
Physical bullying	5	.81
Dominance	3	**.45**
Impulsivity	3	.55
Attitude toward aggression	4	.61
Fun-seeking tendency	4	.80
Microsystem level		
Family interaction		
Perceptions of parents' attitude towards bullying: Parents don't like bullying	3	.90
Perceptions of parents' attitude towards bullying: Parents care about bullying	3	.93
Authoritarian parenting	2	**.41**
Experience/witness of domestic abuse	4	.68
Parents' view of the importance of education	2	.76
Teacher interaction		
Perceptions of teachers' attitude towards bullying: Teachers don't like bullying	3	.95
Perceptions of teachers' attitude towards bullying: Teachers care about bullying	3	.92

Table 8 continued

Effectiveness of teachers' intervention	2	.58
Teachers' moral authority	3	.68
Peer interaction		
Power dynamic	4	.79
Level of difference-acceptance	4	.66
Coercion of public self	3	.71
Pseudo friendship	3	.72
Mesosystem level		
Parents' communication with teachers	3	.87
Parents' communication with peers	3	.90
Exosystem level		
Family SES	5	.71
Academic standard and general image of school	2	.76
Competitive vs. cooperative school climate	2	.71
Student – teacher cohesion	3	.78
Moral atmosphere	2	**.42**
Parents' involvement with school boards	2	.56
Effectiveness of policies, rules, and programs	2	.79
Macrosystem level		
Individualism		
Vertical individualism	2	.80
Horizontal individualism	2	.70
Collectivism		
Vertical collectivism	2	.72
Horizontal collectivism	2	.76
Levels of collectivism of peer group	3	.61
Social disorganization	2	**.43**

III. UNIVARIATE, BIVARIATE AND MULTIVARIATE ANALYSES

1. Univariate Analysis

A. Demographic Characteristics and Academic Achievement of Sample

Table 9 summarizes the demographic and achievement characteristics of the students who participated in this study. There are more male subjects (57.8% of the total subjects) than female subjects (42.2% of the total). Among the randomly selected six schools, there is one non-coed male school (School F). Slightly more female subjects participated in the survey (in 4 schools). However, the sex ratio is similar to that for the Korean population age 10 – 19. According to the census data reported by the Korean National Statistical Office in 2005, the male vs. female ratio was 112.8:100 among teenagers (KNSO, 2005). The sample in this study consists of roughly 15% more male students than female students, indicating that the sex ratio is similar to that of Korean population. Age of most of the subjects is that of the typical Korean students for the grade level, but there are 62 students who are 1 year younger than the regular 7th grade students. There is one student whose age is 17.

The majority of the students' parents have an educational level higher than a high school diploma. Overall, subjects' fathers had higher levels of education than subjects' mothers. For both parents, however, 4 year university graduate is the second largest category following the high school graduate category. This result is consistent with the demographic characteristics of the general population (i.e., parents who have middle school students, KNSO, 2005).

About 30 percent of students reported that their parents' monthly income

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is greater than 3,000,000 won, which is the average monthly household income of South Korea in 2006 (Korean National Statistical Office, 2007). The monthly income of the majority of students' parents is less than the average monthly income level of South Korea. In terms of academic achievement, about the same portion (approximately 30 %) of students reported that their academic achievement level is either upper 30%, middle, or lower 30% of their class.

Table 9. Demographic and Academic Achievement Characteristics of Sample (N = 1238)

			n	%
Sex (Total)				
	Male		716	57.8
	Female		522	42.2
School				
	School A	Male	98	47.8
		Female	107	52.2
	School B	Male	112	47.9
		Female	122	52.1
	School C	Male	101	43.2
		Female	133	56.8
	School D	Male	105	53.0
		Female	93	47.0
	School E	Male	65	49.2
		Female	67	50.8
	School F	Male	235	100
		Female	0	0
Age				
	13		62	5.0
	14		409	33.0
	15		465	37.6
	16		301	24.3

Table 9 continued

	17	1	.1
Grade			
7th Grade		407	32.9
8th Grade		490	39.6
9th Grade		341	27.5
Family SES			
Father's educational level			
No education		2	0.2
Elementary school graduate		44	3.7
Middle school graduate		62	5.2
High school graduate		537	44.8
2 year college graduate		55	4.6
4 year university graduate		362	30.2
Graduate school or more		137	11.4
Mother's educational level			
No education		3	0.3
Elementary school graduate		35	2.9
Middle school graduate		79	6.6
High school graduate		692	58.0
2 year college graduate		32	2.7
4 year university graduate		286	24.0
Graduate school or more		66	5.5
Parents' monthly income			
500,000 won or lower		28	2.4
500,000 – 1,000,000 won		69	5.9
1,000,000 – 1,500,000 won		138	11.8
1,500,000 – 2,000,000 won		195	16.7
2,000,000 – 2,500,000 won		194	16.6
2,500,000 – 3,000,000 won		193	16.5
More than 3,000,000 won		352	30.1
Academic achievement			
Upper 10% of the class		196	15.8
Upper 20% of the class		174	14.1
Upper 30% of the class		115	9.3

Table 9 continued

Middle of the class	384	31.0
Lower 30% of the class	193	15.6
Lower 20% of the class	93	7.5
Lower 10% of the class	60	4.8

B. General Characteristics of Sample

The general characteristics of subjects are presented in Table 10. The table includes the mean and the standard deviation scores of the scales developed based on the results of the first-order factor analysis and the reliability tests. As mentioned in the previous section, Data Preparation, the variables seem to be normally distributed around means, except the variables measuring parental communication with teachers and peers. In addition, overall, the standard deviations for all variables seem to be low and acceptable. The mean for relational bullying behaviors (4 – 20) is 6.14, the mean for verbal bulling (6 – 30) is 9.89, and the mean for physical bullying (5 – 25) is 6.53. Many responded that they have positive behaviors (11.82 out of range between 3 and 15). The mean for impulsivity (3 – 15) is 9.30. Also, on average students said that they perceived that their parents and teachers would have a negative attitude towards bullying behaviors and they would be concerned with bullying behaviors (12.89 and 12.65 respectively out of ranges between 3 and 15). The mean for the teachers' moral authority (3 – 15) is 10.02. In terms of peer interactions, the mean for coercive conformity (3 – 15) is 10.89 and the mean for pseudo friendship (3 – 15) is 9.04. The mean for levels of collectivism of peer group (3 – 15) is 9.22.

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Table 10. General Characteristics of Sample (N=1238)

Scales	Mean	St.D.
Dependent Variables		
Relational bullying (4 – 20, more bullying)	6.14	3.10
Verbal bullying (6 – 30, more bullying)	9.90	4.82
Physical bullying (5 – 25, more bullying)	6.53	3.02
Duration (3 – 10, longer)	4.16	2.06
Visibility (5 – 25, more visible)	14.02	1.99
Involvement (3 – 15, more involved)	10.31	2.47
Independent Variables		
Individual traits		
Academic achievement (2 – 15, higher)	9.99	3.44
General positive behaviors (3 – 15, positive)	11.82	2.38
Prior experiences of bullying victimization		
Relational bullying (4 – 20, more bullying)	5.80	2.60
Verbal bullying (6 – 30, more bullying)	9.51	4.60
Physical bullying (5 – 25, more bullying)	6.82	3.42
Dominance (2 – 10, more dominance)	7.82	2.16
Impulsivity (3 – 15, more impulsive)	9.30	2.68
Attitude toward aggression (4 – 20, more aggressive)	12.45	3.26
Fun-seeking tendency (4 – 20, higher tendency)	7.80	3.50
Microsystem level		
Family interaction		
Perceptions of parents' attitude towards bullying: Parents don't like bullying (3 – 15, positive)	12.89	2.78
Perceptions of parents' attitude towards bullying: Parents care about bullying (3 – 15, positive)	12.46	3.00
Authoritarian parenting (2 – 10, more authoritarian parenting)	6.29	2.11
Experience/witness of domestic abuse (4 – 20, more experiences/witness)	15.99	3.64
Parents' view of the importance of education (2 – 10, less important)	6.12	2.49
Teacher interaction		

Table 10 continued

Perceptions of teachers' attitude towards bullying: Teachers don't like bullying (3 – 15, positive)	12.65	2.89
Perceptions of teachers' attitude towards bullying: Teachers care about bullying (3 – 15, positive)	12.00	3.11
Effectiveness of teachers' intervention (2 – 10, less effective)	5.81	2.07
Teachers' moral authority (3 – 15, less authority)	10.02	2.61
Peer interaction		
Power dynamic (4 – 20, less power-seeking)	8.26	3.62
Level of difference-acceptance (4 – 20, more tolerance)	9.46	3.14
Coercive conformity (3 – 15, less coercive)	10.89	2.69
Pseudo friendship (3 – 15, less pseudo)	9.04	2.87
Mesosystem level		
Parents' communication with teachers (3 – 15, more)	3.35	1.25
Parents' communication with peers (3 – 15, more)	3.40	1.48
Exosystem level		
Family SES (5 – 34, higher SES)	23.04	4.64
Academic standard and general image of school (2 – 10, higher standard, better image)	5.36	2.16
Competitive vs. cooperative school climate (2 – 10, more cooperative)	5.98	2.04
Student – teacher cohesion (3 – 15, more cohesive)	8.94	2.97
Moral atmosphere (2 – 10, more positive)	5.92	1.69
Parents' involvement with school boards (2 – 10, more involvement)	6.20	1.66
Effectiveness of policies, rules, and programs (2 – 10, more positive perception)	5.37	1.94
Macrosystem level		
Individualism		
Vertical individualism (2 – 10, less individualistic)	6.66	1.85
Horizontal individualism (2 – 10, less individualistic)	4.73	1.75

Table 10 continued

Collectivism		
Vertical collectivism (2 – 10, more collectivistic)	6.01	1.59
Horizontal collectivism (2 – 10, more collectivistic)	6.61	1.81
Levels of collectivism of peer group (3 – 15, more collectivistic)	9.22	2.34
Social disorganization (2 – 10, more socially disorganized)	5.94	1.74

C. Validity of School Climate Measures

In this section, the individual level measures (i.e., measures of individual students' perceptions) of school climate are compared with the teachers' perceptions of school climate, teacher's moral authority, and moral atmosphere. Those measures are also examined across six schools. Although this study provided choices that were worded to encourage students to consider stability of the context they were rating, the analysis in this section will provide useful insight into the validity of the students' perceptions. To do this, the items (q31, q40, q37 in teacher survey) similar to the items in student survey (q128, q101, q135) were selected for the comparison. Table 11 shows the results of the comparison.

Table 11. Mean Comparison across Six Schools

| | | Total | School | | | | | |
			A	B	C	D	E	F
Student	Academic Achievement	Mean:3.31 St.D:1.22	2.98	3.08	3.55	3.22	3.24	3.71
	Moral authority	Mean:2.60 St.D:1.08	2.32	2.66	2.75	2.63	2.51	2.68
	Moral atmosphere	Mean:2.53 St.D:1.06	2.62	2.60	2.12	2.61	2.72	2.59
Teacher	Academic Achievement	Mean:3.26 St.D:1.08	3.00	3.20	3.5	3.67	2.40	3.67
	Moral authority	Mean:3.29 St.D:.84	3.50	3.20	3.17	2.67	4.00	3.33
	Moral atmosphere	Mean:2.82 St.D:.87	2.17	3.40	3.50	2.17	3.00	2.83

Also, the followings three figures display the differences in the average scores of students and teachers' responses for three questions, academic achievement, teacher's moral authority, and school moral atmosphere. Although there are slight differences in the mean scores for each item (shown in the table and figures), all of the mean scores for each school from both groups fall within less than one standard deviation away from the total means. Mean difference tests between the two groups found no statistically significant difference across six schools. In addition, correlations between average scores of teachers' and students' responses to above three variables in all schools and in three classrooms showed that they were highly correlated (see Table 12). These results indicate that to some extent the individual level measures for the students' perceptions toward school climate provide adequate results.

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Table 12. Correlations between Average Scores of Teachers and Students

Responses to Measures of Academic Achievement, Moral Authority, and Moral

Atmosphere.

	All schools	Class 1	Class 2	Class 3
Academic achievement	.50	.51	.53	.50
Moral authority	.48	.50	.51	.49
Moral atmosphere	.53	.51	.55	.52

Figure 4. Mean Difference in Academic Achievement across Six Schools
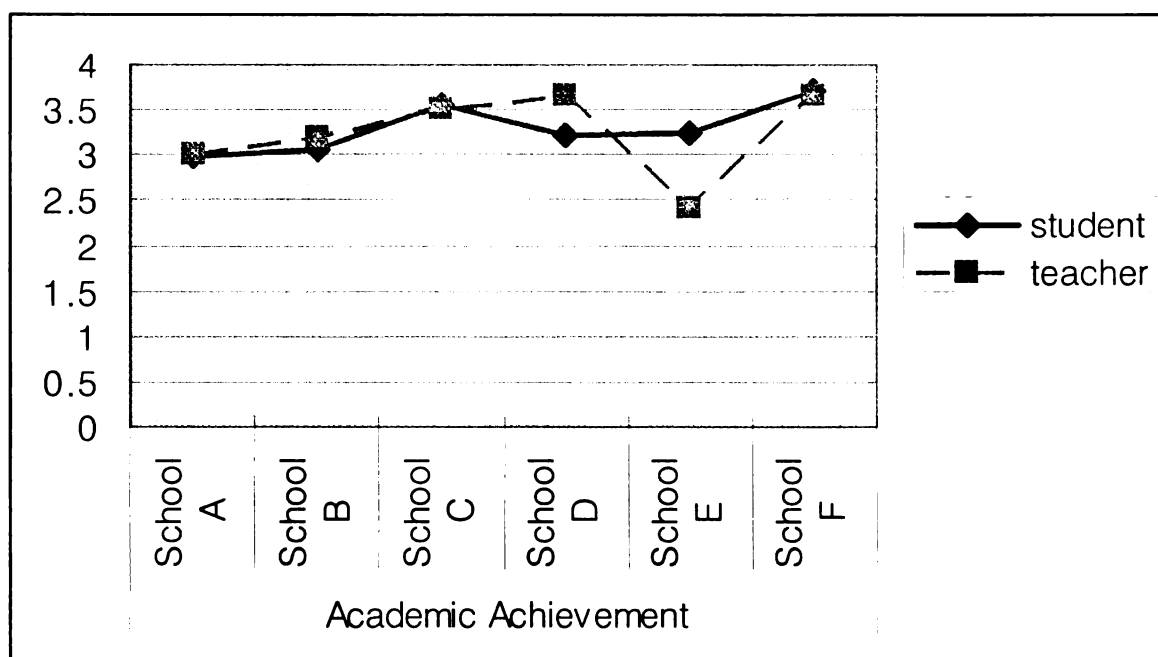
Figure 5. Mean Difference in Teacher's Moral Authority across Six Schools
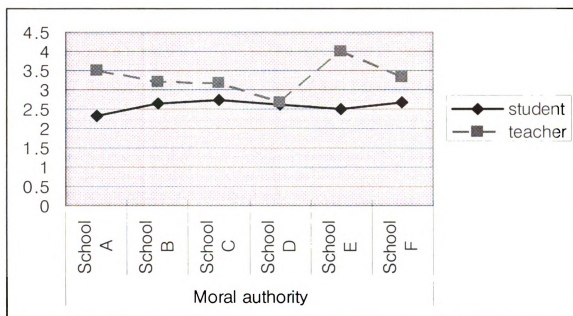
Figure 6. Mean Difference in Moral Atmosphere across Six Schools
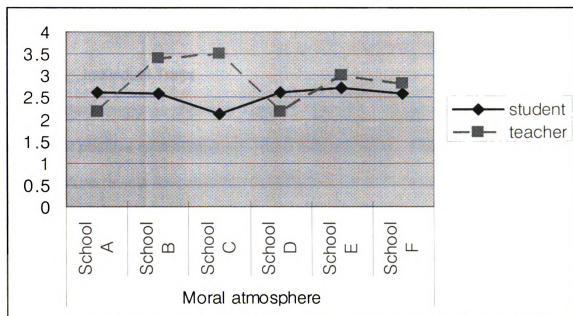
2. Bivariate Analysis

Bivariate correlations were computed between all independent variables used to predict each dependent variable to see whether there is any serious intercorrelation among the variables. The results are presented in Table 13 through 17. The correlation results indicated that there were no high intercorrelations among independent variables, suggesting no multicollinearity problem in the data. In the presentation of findings, VIF and tolerance statistics are examined for moderate correlations.

The dependent variables are significantly correlated with each other. Relational bullying behavior is significantly correlated with verbal bullying behavior ($r = .70$, $p < .001$), and verbal bullying behavior is significantly correlated with physical bullying behavior ($r = .68$, $p < .001$). In Table 13, the three types of previous bullying victimizations are moderately and significantly correlated with bullying behaviors.

A. Individual Traits

Interestingly, as shown in Table 13, age (13 – 17 year-old) has a significant positive relationship with three different types of bullying behaviors. The literature review revealed that bullying behaviors increased from 6th to 8th grade and then decrease as youth get older. However, there seems to be a different pattern in South Korea. There was no significant change throughout the middle school years, but it is suspected that frequency of bullying behaviors would decrease during the high school years. However, this expectation cannot be examined with the data collected fro this dissertation. The relationship of

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bullying to age will be further discussed in the Limitations and Recommendations section.

Previous experiences of bullying victimization were strongly positively correlated with all types of bullying behaviors. Especially, verbal bullying victimization was strongly correlated with verbal bullying behaviors ($r = .50$, $p < .001$), and physical bullying victimization was also strongly correlated with physical bullying behaviors ($r = .51$, $p < .001$).

Dominance was significantly positively correlated with all three types of bullying behaviors ($r = .12$, $r = .08$, $r = .07$ respectively). As the literature suggested, impulsivity, attitude towards aggression, and fun-seeking tendency were significantly positively correlated with all types of bullying behaviors.

Table 13. Correlations between Individual Traits and Bullying Behaviors

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
V1 Relational Bullying	1.00										
V2 Verbal Bullying	.70***	1.00									
V3 Physical Bullying	.55***	.68***	1.00								
V4 Age	.06*	.10***	.06*	1.00							
V5 Relational Victim	.38***	.32***	.25***	.03	1.00						
V6 Verbal Victim	.33***	.50***	.36***	.07**	.62***	1.00					
V7 Physical Victim	.34***	.46***	.51***	.08**	.44***	.68***	1.00				
V8 Dominance	.12***	.08**	.07**	-.05*	-.03	-.02	-.04	1.00			
V9 Impulsivity	.15***	.18***	.16***	.04	.14***	.13***	.15***	-.03	1.00		
V10 Violence attitude	.21***	.27***	.25***	.04	.05	.05*	.07**	.06*	.24***	1.00	
V11 Fun-seeking	.30***	.36***	.32***	.09**	.04	.12***	.16***	.07**	.19***	.34***	1.00

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

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B. Microsystem Variable

Overall, youths' experiences and perceptions of their experiences have significant relationships with their bullying behaviors (see Table 14). Specifically, youth's perceptions of authoritarian parenting and their experiences / witness of domestic abuse have significant positive relationships with bullying. The more negative the perceptions and experiences of parenting and abuse, the more frequent are bullying behaviors. Interestingly, parent's emphasis on the importance of education is significantly positively correlated with all three types of bullying behaviors, meaning that the more parents emphasize education, the more youths bully others in all three different ways. In addition, youths' perception of their parents' attitude towards bullying behaviors was not significantly correlated with their bullying behaviors. Only the parents' concern about bullying behaviors was significantly negatively correlated with verbal and physical bullying behaviors.

Teachers' attitude towards bullying behaviors also did not have significant relationships with youths' bullying behaviors. Only teachers' concern about bullying was negatively correlated with verbal and physical bullying behaviors. Youth's perception of the effectiveness of teacher's intervention has significant negative correlations with relational and verbal bullying behaviors. However, teacher's moral authority has negative relationships with all types of bullying behaviors.

Finally, peer variables seem to have some important associations with bullying. Specifically, the power dynamic among peers has positive significant correlations with all types of bullying behaviors (r = .21 for relational and physical

bullying, and $r = .23$ for verbal bullying). Level of difference-acceptance also has significant but weak positive relationships with relational, verbal and physical bullying behaviors ($r = .06$, $r = .05$, $r = .07$ respectively). Coercion of public self has significant relationships with relational ($r = .14$, $p < .001$) and verbal bullying behaviors ($r = .09$, $p < .01$), but not with physical bullying behaviors. As predicted based on the literature review, the pseudo friendship network has significant positive relationships with relational, verbal and physical bullying behaviors ($r = .13$, $r = .14$, and $r = .08$).

It is worth noting that the two measures of perceived parents' attitudes toward bullying behaviors are moderately and significantly correlated with the corresponding measures of perceived teachers' attitude toward bullying behaviors ($r = .51$ for don't like bullying, and $r = .44$ for care about bullying). However, neither correlation indicates any severe multicollinearity issue (tolerance = .74, VIF = 1.35 for don't like bullying, and tolerance = .75, VIF = 1.34 for care about bullying). Similarly, Table 14 shows that the parents' communication with teachers is highly and significantly correlated with the parents' communication with peers ($r=.67$, $p < .001$). Although the level of correlation is high, there is no multicollinearity issue in this level (tolerance = .56, VIF = 1.79). Table 15 and 16 also show that there is no single variable that is highly intercorrelated with other variables, suggesting that there is limited risk of having multicollinearity problem in this data set.

Table 14. Correlations between Microsystem Variables and Bullying Behaviors

	V1	V2	V3	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24
V1	1.00															
V2	.70***	1.00														
V3	.55***	.68***	1.00													
V12	-.02	-.02	-.04	1.00												
V13	-.04	-.08**	-.09***	.42***	1.00											
V14	-.08**	-.12***	-.09**	-.04	.12***	1.00										
V15	-.12***	-.15***	-.12***	.10***	.23***	.47***	1.00									
V16	.09**	.14***	.11***	-.02	-.13***	-.34***	-.23***	1.00								
V17	.01	.00	-.01	.51***	.31***	-.03	.04	.05*	1.00							
V18	-.04	-.05*	-.05*	.29***	.44***	.07**	.15***	-.06*	.42***	1.00						
V19	-.11***	-.10***	-.05	-.08**	.05*	.09**	.12***	-.07**	-.08**	.17***	1.00					
V20	-.19***	-.20***	-.10***	.08**	.22***	.08**	.16***	-.14***	.08**	.28***	.32***	1.00				
V21	.21***	.23***	.21***	-.20***	-.24***	-.15***	-.21***	.19***	-.15***	-.29***	-.13***	-.36***	1.00			
V22	.06*	.05	.07*	-.13***	-.17***	-.05*	-.13***	.11***	-.10***	-.18***	-.07**	-.18***	.32***	1.00		
V23	.14***	.09**	.04	.15***	.11***	-.07*	.00	.08**	.19***	.08**	-.06*	-.11***	-.01	.08**	1.00	
V24	.13***	.14***	.08**	.00	-.01	-.11***	-.16***	.13***	.03	-.05*	-.15***	-.19***	.19***	.25***	.16***	1.00

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

Variables: V1(Relational bullying), v2(verbal bullying), v3(physical bullying), v12(parents' attitude: don't like), v13(parents' attitude: care), v14(authoritarian parenting), v15(domestic abuse), v16(importance of education), v17(teacher's attitude: don't like), v18(teacher's attitude: care), v19(effectiveness of teacher's intervention), v20(teacher's moral authority), v21(power dynamic), v22(level of difference-acceptance), v23(coercive conformity), v24(pseudo friendship)

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C. Mesosystem Variables

Unexpectedly, as shown in Table 15, youth's perception of parental communication with teachers and peers has weak but positive relationships with all types of bullying behaviors. Parents' communication with teachers regarding bullying behaviors was correlated with relational ($r = .15$), verbal ($r = .18$), and physical bullying ($r = .21$), suggesting that youth, who perceived their parents talking about bullying to their teachers frequently also bullied other students more often. Also, youth, who perceived their parents talking to their friends about bullying behaviors, said they bullied others more often ($r = .16$, $r = .21$, $r = .22$ for relational, verbal and physical bullying).

It is worth noting that there is a strong significant relationship between parents' communication with teachers and parents' communication with peers ($r = .76$). Although the level of correlation is high, there is no multicollinearity issue (tolerance = .55, VIF = 1.81).

Table 15. Correlations between Mesosystem Variables and Bullying Behaviors

	V1	V2	V3	V25	V26
V1 Relational Bullying	1.00				
V2 Verbal Bullying	.70***	1.00			
V3 Physical Bullying	.55***	.68***	1.00		
V25 Parents' communication with teachers	.15***	.18***	.21***	1.00	
V26 Parents' communication with peers	.16***	.21***	.22***	.67***	1.00

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

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D. Exosystem Variables

The correlations reveal that male students commit more bullying behavior (relational, verbal, and physical) (see Table 16). The expectation was that there would be a U shape distribution between bullying and family SES. However, scatterplots and mean-difference tests for the relationship between family SES and all types of bullying behaviors revealed that there was no U shape distribution, and the correlation was not significant.

Overall, school climate has a strong correlation with bullying behaviors. Specifically, higher academic standard and general positive image of the school have significant negative correlations with all types of bullying behaviors. Especially, a cooperative school climate has a negative relationship with bullying behaviors ($r = -.12$, $r = -.17$, $r = -.11$ for relational, verbal, and physical bullying). Moral atmosphere also has negative correlations with relational ($r = -.09$) and verbal bullying behaviors ($r = -.08$). Parental involvement with school boards has a negative correlation with all three types of bullying behaviors ($r = -.05$, $r = -.05$, $r = -.06$ for relational, verbal, and physical bullying). Finally, perception of effectiveness of school policies, rules, and anti-bullying programs has negative relationships with relational ($r = -.08$) and verbal bullying behaviors ($r = -.05$).

Table 16. Correlations between Exosystem Variables and Bullying Behaviors

	V1	V2	V3	V27	V28	V29	V30	V31	V32	V33	V34
V1 Relational Bullying	1.00										
V2 Verbal Bullying	.70***	1.00									
V3 Physical Bullying	.55***	.68***	1.00								
V27 Sex	-.07**	-.27***	-.24***	1.00							
V28 Family SES	.02	.01	.03	-.04	1.00						
V29 Academic standard	-.08**	-.12***	-.07**	.04	-.06*	1.00					
V30 Competitive climate	-.12***	-.17***	-.11***	.05*	-.10**	.10***	1.00				
V31 Moral Atmosphere	-.07**	-.08**	-.01	-.04	-.07*	.28***	.01	1.00			
V32 Cohesion	-.10***	-.10***	-.07**	.05	-.10***	.42***	.13***	.37***	1.00		
V33 Parental involvement	-.05*	-.05*	-.06*	.01	.00	.30***	.01	.38***	.33***	1.00	
V34 School policy	-.08**	-.05*	-.03	-.10***	-.10***	.25***	.08**	.42***	.34***	.33***	1.00

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

E. Macrosystem Variables

The statistics in Table 17 suggest a significant relationship between community characteristics and bullying behaviors. A higher level of horizontal collectivism has negative correlations with all three types of bullying behaviors (r = -.10 for relational, r = -.07 for verbal, and r = -.05 for physical bullying). However, there was no significant correlation between vertical collectivism and bullying behaviors. As expected, higher levels of social disorganization are positively correlated with bullying behaviors (r = .07, r = .09, r = .08 for relational, verbal, and physical bullying), and the more collectivistic peer groups more often bully other students in two ways, verbally and physically (both r = .07).

Table 17. Correlations between Macrosystem Variables and Bullying Behaviors

	V1	V2	V3	V35	V36	V37	V38
V1 Relational Bullying	1.00						
V2 Verbal Bullying	.70***	1.00					
V3 Physical Bullying	.55***	.68***	1.00				
V35 Vertical Collectivism	-.02	-.02	.03	1.00			
V36 Horizontal Collectivism	-.10***	-.07**	-.05*	.22***	1.00		
V37 Peer Collectivism	.05	.07**	.07**	.10***	.24***	1.00	
V38 Social Disorganization	.07**	.09**	.08**	-.04	-.22***	.05	1.00

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

3. Multivariate Analysis

To examine the hypothesized relationship between the dependent variables and the independent variables, and to see which variables have stronger effects than others, multivariate regression was carried out, and the results are presented in Table 18. First, a multivariate regression analysis was carried out with a composite measure of three types of bullying behaviors and a composite measure of three types of prior bullying victimizations. The result suggested that the composite measure of prior bullying victimization (Beta=.468) was the most significant variable in the prediction of overall bullying behavior. Other important predictors were fun-seeking tendency (Beta=.252), parents-peer communication (Beta=.126), attitude towards aggression (Beta=.125), dominance (Beta=.096), difference-acceptance (Beta=-.065), coercive conformity (Beta=.060), and cooperative climate (Beta=-.056). The adjusted R-square value (.429) suggested that about 43% of overall bullying behaviors were explained by the multivariate model. Subsequently, each type of prior bullying victimization and all other variables were regressed to each type of bullying behaviors. The results are discussed in the following subsections.

A. Individual Traits (H1a – H1f)

Although there were significant positive correlations between age and bullying behaviors, there was no significant relationship between them in the multivariate regression. The literature review revealed that bullying behaviors increased from 6th to 8th grade and then decrease as youth get older. However, the correlations and regression results indicates that it seems different in South

Korea. Unfortunately, it is impossible to compare the frequency of bullying in middle school years with that of elementary or high school years due to the sampling frame.

Previous experience of bullying victimization was the strongest positively related predictor for the different types of bullying behaviors. Especially, each type of bullying victimization was the strongest predictor for the same type of bullying behaviors. Relational bullying victimization had the strongest association, after controlling for other independent variables, with relational bullying behavior (Beta=.256). Verbal bullying victimization was the strongest predictor of verbal bullying behavior (Beta=.313). Physical bullying victimization also was the strongest predictor of physical bullying (Beta=.452). Also physical bullying victimization has significant relationships with both relational and verbal bullying (Beta=.186/.174 respectively).

The multivariate regression results also showed that dominance was a significant predictor of all three types of bullying behaviors (Beta=.118/.075/.069 for relational, verbal, and physical bullying). Although the literature suggested that impulsivity, attitude towards aggression, and fun-seeking tendency would be significantly and positively related to bullying behaviors, the results showed that there are different relationships. Impulsivity was not a significant predictor of any types of bullying behaviors. Attitude toward aggression and fun-seeking tendency, however, were significant predictors of all three types of bullying behaviors. Especially, fun-seeking tendency was a significant and strong predictor of all three types of bullying behaviors (Beta=.220/.226/.190 for relational, verbal, and physical bullying).

Overall, relational bullying had the strongest association with relational bullying victimization. Fun-seeking tendency had the second strongest association with relational bullying. For verbal bullying, verbal bullying victimization had the strongest effect, and fun-seeking tendency was the second strongest predictor of verbal bullying. Physical bullying victimization had the strongest association with physical bullying.

B. Microsystem Level (H2a – H2k)

In Table 14, the correlations suggested that youths' family, peer, and school experiences are related to their bullying behaviors. However, the multivariate regression analysis revealed that indicators of the microsystems did not significantly predict all types of bullying behaviors (see Table 18). Parents' attitude toward bullying behaviors was not a significant predictor of any types of bullying. Teachers' attitude toward bullying behaviors only predicted physical bullying (Beta=.059). Unlike previous research findings, this study showed null relationships of experience of authoritarian parenting, domestic abuse, importance of education, teacher intervention, and pseudo friendship with each type of bullying behaviors. However, teachers' moral authority was a significant predictor of verbal bullying (Beta=-.058). The peer variables, dynamic, level of difference-acceptance and coercive conformity, were significant predictors of relational bullying. Level of difference-acceptance and coercion of public self were also significant predictors of verbal bullying (Beta=-.067/.049 respectively).

C. Mesosystem Level (H3a – H3b)

As noted previously, youth's perception of parental communication with peers has strong positive relationships with all types of bullying behaviors, and this variable was significant in the multiple regression analyses (Beta=.089/.122/.131 for relational, verbal, and physical bullying). Youth's perception of parental communication with teachers was not significantly predictive of any type of bullying behaviors.

D. Exosystem Level (H4a – H4g)

As expected, sex was a significant predictor of all types of bullying behaviors (Beta=.068/-.066/-.058 respectively at $p < .05$). Many variables measuring different aspects of school climate were found to be insignificant predictors of all types of bullying behaviors, but a cooperative climate was a significant negative predictor of verbal bullying (Beta=-.075).

E. Macrosystem Level (H5a – H5c)

Unexpectedly, unlike the previous arguments on the effects of community and cultural level variables on bullying behavior, the results showed all variables at the macrosystem level were insignificant direct predictors of bullying.

Table 18. Multivariate Regression

Hypothesized Relationship	Dependent Variables							
	Composite of bullying		Relational		Verbal		Physical	
	Beta	St.E	Beta	St.E	Beta	St.E	Beta	St.E

Table 18 continued

Individual traits									
H1a	Age	.010	.252	.009	.090	.010	.127	-.006	.083
	Composite of victimization	**.468**	.025						
H1b	Prior bullying victimization								
	Relational			**.256**	.038	.019	.053	.050	.035
	Verbal			.028	.026	**.313**	.037	-.024	.024
	Physical			**.186**	.031	**.174**	.044	**.452**	.029
H1c	Dominance	**.096**	.101	**.118**	.036	**.075**	.051	**.069**	.033
H1d	Impulsivity	.028	.084	.013	.030	.025	.043	.030	.028
H1e	Attitude on aggression	**.125**	.074	**.077**	.027	**.125**	.038	**.117**	.025
H1f	Fun-seeking tendency	**.252**	.073	**.220**	.026	**.226**	.037	**.190**	.024
Microsystem level									
H2a	Parents' attitude								
	Don't like bullying	-.004	.095	-.027	.034	.014	.048	-.011	.032
	Care about bullying	.027	.087	.049	.031	.026	.044	.001	.029
H2b	Authoritarian parenting	.040	.118	.028	.042	.034	.060	.044	.039
H2c	Domestic abuse	.019	.069	.025	.025	.011	.035	.030	.023
H2d	Importance of education	.001	.093	.003	.033	.003	.047	-.011	.031
H2e	Teachers' attitude								
	Don't like bullying	.046	.091	.029	.033	.043	.046	**.059**	.030
	Care about bullying	.041	.083	.046	.030	.035	.042	.015	.028
H2f	Teacher intervention	-.011	.113	-.041	.041	-.001	.057	-.003	.038
H2g	Teacher's moral authority	-.026	.098	-.036	.035	**-.058**	.050	.022	.033
H2h	Power dynamic	.040	.072	**.076**	.026	.017	.036	.032	.024
H2i	Difference-acceptance	**-.065**	.074	**-.061**	.026	**-.067**	.037	-.039	.024
H2j	Coercive conformity	**.060**	.084	**.088**	.030	**.049**	.042	.022	.028
H2k	Pseudo friendship	-.032	.080	-.020	.029	-.022	.041	-.019	.027
Mesosystem level									
H3a	P-T communication	-.009	.228	-.008	.082	-.030	.116	-.014	.076
H3b	P-P communication	**.126**	.191	**.089**	.069	**.122**	.097	**.131**	.063
Exosystem level									
H4a	Sex (male=1, female=2)	-.032	.476	**.068**	.174	**-.066**	.245	**-.058**	.162
H4b	Family SES	.033	.046	.031	.017	.016	.023	.038	.015
H4c	Academic standard	-.016	.108	.005	.039	-.028	.055	-.003	.036

Table 18 continued

H4d	Cooperative climate	**-.056**	.109	-.028	.039	**-.075**	.055	-.044	.036
H4e	Moral atmosphere	-.018	.146	-.012	.052	-.048	.074	.016	.049
H4f	Parental involvement	-.005	.145	.008	.052	.014	.073	-.037	.048
H4g	School policies	-.014	.127	-.014	.046	-.002	.064	-.011	.042
	Macrosystem level								
H5a	Collectivism								
	Vertical collectivism	.016	.139	.001	.050	.004	.070	.043	.046
	Horizontal collectivism	-.023	.133	-.034	.048	-.012	.067	-.035	.044
H5b	Social disorganization	-.002	.126	-.008	.045	-.009	.064	-.002	.042
H5c	Collectivistic peer group	.019	.095	.022	.034	.011	.048	.013	.031

Adjusted R-square	.429	.291	.416	.361

* Note: Variables found to be significant at least at p < .05 are in Bold.
** Note: Beta = Standardized Coefficients

Overall, the independent variables predicted roughly 30 – 40 % of variance in the three different types of bullying behaviors. It is worth noting that the literature review revealed that those variables included in this analysis were all important predictors of bullying behaviors, but that this study found that many of them were not significant predictors at least of some types of bullying. This is partly because the previous empirical studies did not include all different levels of variables in their analyses, but this study included them all in one model. Unlike correlation results between the independent variables and the dependent variables, the multivariate regression analysis results showed that further investigation is necessary to see whether there is evidence of different paths of causal influence among the independent variables, as would be suggested by theory.

IV. SENSITIVITY ANALYSIS: ITCV

As mentioned in the section, Cross-Sectional Research Design, it is important to pay attention to confounding variable(s), which may alter causal inferences made based on statistical analyses without the unmeasured confounding variable(s). In other words, careful investigation of the impact of omitted confounding variable(s) will help to support a strong causal inference, especially with outcomes from cross-sectional research design. Previously, it was argued that prior propensity for bullying behavior could be an important confounding variable for this ecological model. In this section, ITCV (Impact Threshold for a Confounding Variable) is estimated for each relationship between the dependent variables and the variables found to be significant in the multivariate regression. Using this method, this study examines how large the correlations between the confounding and the dependent / independent variables would need to be to alter causal inferences that this study will draw based on results of the statistical significance tests using cross-sectional non-experimental data. In other words, this method will provide a range of correlations of the prior propensity for bullying behavior with other variables, within which causal inferences drawn from study findings will be treated as credible.

According to Frank (2000), the impact of the unobserved confounding variable is calculated by the following equation.

$$k = ITCV = r_{x \cdot cv} \times r_{y \cdot cv}$$

$$= (\sqrt{(1-r_{x \cdot z}^2)(1-r_{y \cdot z}^2)}) \left(\frac{t^2 - t\sqrt{d}}{-(n-q-1)} + \left[\frac{-d + t\sqrt{d}}{-(n-q-1)} \right] r_{y \cdot x | z} \right)$$

where, $r_{x \cdot cv}$ is the correlation between x and an unobserved confounding variable, $r_{y \cdot cv}$ is the correlation between y and an unobserved confounding variable, $r_{x \cdot z}$ is the correlation between x and covariates z, $r_{y \cdot z}$ is the correlation between y and covariates z, t is the critical value of t, n is the total number of cases, q is the number of parameters estimated, and $d = t^2 + (n-q-1)$. The following table contains the ITCV scores calculated from the equation for three different types of bullying behaviors.

As already noted, previous bullying victimization was a strong and significant predictor of all types of bullying behaviors. For relational bullying, previous relational bullying victimization was the strongest predictor of relational bullying. This inference can be altered when the impact of the confounding variable, i.e., prior bullying propensity, is greater than .114 (ITCV=.114, see Table 19). The robustness to percent bias score (.747) indicates that there should be about 75% bias to make the relationship become insignificant.

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Table 19. ITCV Scores

	Relational Bullying				Verbal Bullying				Physical Bullying			
	ITCV	$r_{x \cdot cv}$	$r_{y \cdot cv}$	R^a	ITCV	$r_{x \cdot cv}$	$r_{y \cdot cv}$	R	ITCV	$r_{x \cdot cv}$	$r_{y \cdot cv}$	R
Relational bullying victimization	.114	.318	.359	.747								
Verbal bullying victimization					.097	.277	.349	.770				
Physical bullying victimization	.061	.225	.270	.631	.058	.231	.251	.643	.197	.404	.489	.847
Dominance	.065	.273	.239	.575	.029	.190	.150	.393	.022	.162	.134	.318
Attitude toward aggression	.017	.130	.127	.273	.057	.253	.225	.591	.050	.231	.215	.547
Fun-seeking tendency	.111	.326	.341	.728	.110	.352	.336	.758	.093	.305	.303	.702
Teacher's attitude: Don't like												
Teacher's moral authority					.004	.062	.058	.079	.001	.037	.038	.024
Power dynamic	.011	.102	.107	.208	.016	.137	.116	.275				
Level of difference-acceptance	.007	.088	.082	.130	.003	.060	.049	.055				
Coercion of public self	.033	.191	.173	.413	.036	.186	.192	.515				
Parents-peers communication	.014	.112	.127	.274	.013	.122	.107	.243	.039	.190	.206	.526
Gender	.011	.105	.101	.188	.027	.181	.147	.383	.005	.072	.066	.093
Cooperative climate					.027	.181	.147	.383				

a. R = Robustness to % bias

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Fun-seeking tendency also has a strong significant relationship with relational bullying. The ITCV is .111, and the robustness to percent bias score also shows that a strong causal inference can be made (Robustness to % bias = .728).

In terms of verbal bullying behavior, previous verbal bullying victimization and fun-seeking tendency have strong associations, and it would be difficult to invalidate them due to the impact of unobserved prior propensity of bullying behavior (ITCV = .097 and .110 respectively). The inference drawn from the relationship between the teacher's moral authority and verbal bullying can be easily invalidated by the impact of the confounding variable (ITCV = .004), and the same coercive conformity (ITCV = .003).

For physical bullying behavior, previous physical bullying victimization and the fun-seeking tendency were found to have strong associations, that would be difficult to invalidate by the impact of the omitted variable (ITCV = .197 and .093 respectively). The inferences for the relationships of physical bullying with teacher's attitude toward bullying and with gender can be easily invalidated by the confounding variable (ITCV = .001 and .005 respectively).

Overall, each type of prior bullying victimization has the most significant and non-spurious relationship with each corresponding type of bullying behavior. Based on the ITCV results, fun-seeking tendency was also found to be a significant predictor of relational and physical bullying behaviors. Those relationships are the most certain that is that they are least likely to be spurious due to prior propensity to bully others.

Finally, to compare impacts of the confounding variable (ITCV) with

impacts of covariates on relationships between types of prior victimizations and bullying behaviors, impact k (= $r_{x \cdot z} X r_{y \cdot z}$) of each independent variable has been calculated (see Table 20). Since the prior bullying victimization was one of the most important predictors of bullying, the comparison is made for prior bullying victimization as a predictor of primary interest. As mentioned previously, ITCV indicates the necessary impact of a confounding variable to alter inference between each type of bullying victimizations and each type of bullying behaviors. As the results indicate, the prior physical bullying victimization has impact k=.150, which is large enough to invalidate the inference for relational bullying. Also, it has impact k=.317, which is also large enough to invalidate the inference for verbal bullying. The impact magnitude of the prior physical bullying victimization is three times greater than the impact of the confounding variable for verbal bullying.

Table 20. Comparison between ITCV and Impact of Covariates

	Types of Bullying		
	Relational	Verbal	Physical
ITCV (Prior bullying propensity)			
Relational bullying victimization	.114		
Verbal bullying victimization		.097	
Physical bullying victimization			.197
Impact k(= $r_{x \cdot z} X r_{y \cdot z}$)			
Physical bullying victimization	**.150**	**.317**	
Dominance	.004	.000	.001
Attitude towards aggression	.011	.014	.018
Fun-seeking tendency	.012	.045	.055
Teacher's attitude: Don't like	.000	.000	.001
Teacher's moral authority	.019	.011	.001

Table 20 continued

Power dynamic	.019	.033	.024
Level of difference-acceptance	.066	.004	.005
Coercion of public self	.007	.000	.000
Parents-peers communication	.016	.025	.034
Gender	.002	.071	.062
Cooperative climate	.012	.016	.006

V. STRUCTURAL EQUATION MODELING: BASIC MODEL

1. Confirmatory Factor Analysis

Before conducting SEM, the second-order confirmatory factor analysis

was carried out for all 8 constructs and their 34 indicators. Table 21 contains the

standardized regression weights (factor loadings), the squared multiple

correlation coefficients (R^2), and the different types of indexes (chi-square, GFI[5],

AGFI[6], CFI[7], and RMSEA[8]) for all variables.

Three steps were taken to conduct confirmatory factor analysis, 1) basic

CFA, 2) separated individual trait factor CFA, and 3) CFA with variables dropped.

The basic CFA included all variables that were found to be important in the

previous literature. Most factor loadings were in an acceptable range, but there

were several variables with low loading scores. Variable with low loading scores

are dominance, impulsivity, attitude toward aggression, fun-seeking tendency,

parents' attitude (Don't like bullying), teachers' attitude (Don't like bullying),

coercive conformity, cooperative climate, social disorganization, and peer group

collectivism. It is obvious that three items related to previous bullying

victimization load on a common factor, while the standardized regression weights

for individual tendency (4 items) are near zero. This indicates that separation of

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[5] GFI (the Goodness of Fit Index) tells what proportion of the variance in the sample variance-covariance matrix is accounted for by the model.
[6] AGFI (Adjusted GFI) is a GFI adjusted for the number of parameters in the model.
[7] CFI (Comparative Fit Index) is a result of comparison between the model and the independence model.
[8] RMSEA (Root Mean Square Error of Approximation) estimates lack of fit compared to the saturated model.

the individual tendency factor from previous bullying victimization is necessary.

CFA was conducted again with separated individual trait factors, 1) the individual traits of victimization, and 2) the individual traits of a tendency to bully. By doing this, the squared multiple correlation coefficients (R^2) increased from .04, .01, and .04 to .12, .29, and .41 respectively for impulsivity, attitude toward aggression, and fun-seeking tendency. Overall, the model improved slightly, but the fit indexes are still not in acceptable ranges (although GFI (.900) and RMSEA (.052) are in acceptable ranges). However, there were still variables which had low standardized regression weights, such as dominance. Their squared multiple correlation coefficients were near zero (ranging from .00 to .07, see the numbers in bold in the R^2 column of the separated CFA section in Table 20). Thus, another CFA was carried out with those variables dropped from the analysis. Overall, although x^2 is still significant, meaning that the null hypothesis of good model fit should be rejected, the model improved greatly (GFI=.936, AGFI=.917, CFI=.903, RMSEA=.047) and significantly (Δx^2=938.257). Thus, this study uses the measurement model developed from the final CFA for further SEM.

Table 21. Confirmatory Factor Analysis

	Basic		Separated		Dropped	
	Loadings	R^2	Loadings	R^2	Loadings	R^2
DV: Bullying Behaviors						
Relational	.75	.56	.74	.55	.74	.55
Verbal	.94	.88	.94	.88	.94	.88
Physical	.72	.52	.72	.52	.72	.52
IV: Individual Traits						

Table 21 continued

Prior relational victim	.66	.43	.66	.43	.66	.43
Prior verbal victim	.90	.80	.93	.86	.93	.86
Prior physical victim	.75	.57	.73	.54	.73	.54
Dominance	-.02[a]	**.00**	.07	**.00**		
Impulsivity	.19	**.04**	.35	**.12**	.35	.12
Attitude on aggression	.12	**.01**	.54	**.29**	.54	.29
Fun-seeking tendency	.19	**.04**	.64	**.41**	.64	.41
IV: Family Interactions						
Parents' attitude: Like	.10	.01	.11	**.01**		
Parents' attitude: Care	.29	.08	.31	.10	.29	.09
Authoritarian parenting	.65	.42	.64	.41	.65	.42
Domestic abuse	.68	.47	.67	.45	.67	.45
Importance of education	-.45	.20	-.45	.20	-.45	.26
IV: Teacher Interactions						
Teachers' attitude: Like	.09	.01	.11	**.01**		
Teachers' attitude: Care	.36	.13	.36	.13	.32	.10
Teachers' intervention	.44	.19	.41	.17	.41	.17
Moral authority	.72	.52	.75	.57	.76	.58
IV: Peer Interactions						
Power dynamics	.64	.41	.69	.48	.70	.49
Difference-acceptance	.45	.20	.44	.19	.44	.19
Coercive conformity	.11	.01	.10	**.01**		
Pseudo friendship	.40	.16	.35	.12	.34	.12
IV: Parental Communication						
Parent-Teacher	.88	.78	.88	.78	.88	.78
Parent-Peer	.76	.57	.75	.57	.75	.57
IV: School Climate						
Academic standard	.49	.24	.49	.24	.49	.24
Cooperative climate	.09	.01	.09	**.01**		
Moral atmosphere	.65	.43	.65	.43	.66	.43
Parental involvement	.58	.33	.57	.33	.58	.33
Policies, regulations	.58	.34	.58	.34	.58	.34
IV: Community character						
Vertical collectivism	-.30	.09	-.30	.09	-.34	.12

Table 21 continued

Horizontal collectivism	-.78	.61	-.79	.62	-.64	.41
Social disorganization	.26	.07	.26	.07	.30	.09
Peer group collectivism	.26	.07	.26	**.07**		

Chi-square	2851.973	2091.421	1153.164
Degree of Freedom	495	487	313
$\Delta\chi^2$		760.552* (df=8) ,	**938.257* (df=174)**
GFI	.862	.900	**.936**
AGFI	.834	.878	**.917**
CFI	.767	.841	**.903**
RMSEA	.062	.052	**.047**

a: Factor loading for dominance in basic CFA was not significant.

2. Structural Equation Modeling

The basic theoretical model was previously presented in Figure 3. The initial ecological prediction model which will be tested in this section is identical to the one presented in Figure 3, except that the individual trait factor is divided into two factors, prior bullying victimization and individual tendency to bully. This modification is consistent with the findings in the analysis of the measurement model (CFA in the previous section). The newer version of the initial ecological prediction model is presented in Figure 7, and it contains the standardized path coefficients and R^2.

Figure 7. Initial Ecological Prediction Model of Bullying Behavior
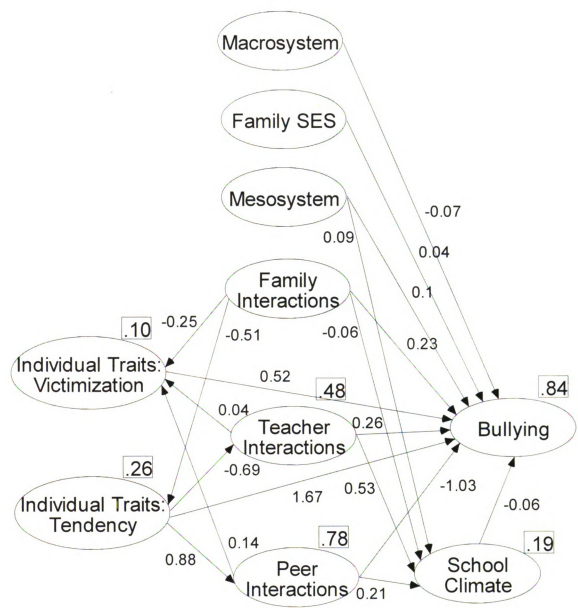
A. The Initial Ecological Prediction Model for Bullying (M_E)

The model fit summary for this basic model is presented in Table 22, in the row headed "M_E Ecological Model." Since the probability value of the chi-square test is smaller than the .05 level (1400.114 at df=357), the null hypothesis that the model fits the data should be rejected. Values on the GFI and AGFI were acceptable for M_E (in excess of .9), and the value on the RMSEA was acceptable (lower than .05).

Table 22. Model Fit Summary for All Models (N=1238)

	χ^2	df	$\Delta\chi^2$	GFI	AGFI	CFI	RMSEA
M_E Ecological Model	1400.114	357		.925	.909	.880	.049
M_{r1} Revised Model #1	1193.766	355	Yes[a]	.934	.919	.904	.044
M_{FT} Full Theory Model	1176.749	355	Yes[b]	.935	.921	.906	.043
M_{r2} Revised Model #2	1163.363	357	Yes[c]	.936	.922	.907	.043
M_{r3} Revised Model #3	1138.318	355	Yes[d]	.937	.923	.910	.042
M_M Measurement Model	1153.164	313		.936	.917	.903	.047

Note: a) $\Delta\chi^2$ = 206.348 / Δdf = 2, b) $\Delta\chi^2$ = 17.017 / Δdf = 0, c) $\Delta\chi^2$ = 13.386 / Δdf = 2, d) $\Delta\chi^2$ = 25.045 / Δdf = 2 (The critical Chi-square value with 2 df is 5.991 ($p < .05$)).

There were five insignificant paths. Table 23 shows the standardized path coefficients for the paths in different models. Those insignificant paths are between the macrosystem and bullying, family SES and bullying, school climate and bullying, family interactions and school climate, and teacher interaction and prior bullying victimization. Although there were insignificant paths, overall 84% of bullying behaviors has been explained by the initial theoretical model.

Table 23. Standardized Path Coefficients and R^2 for All Models

	M_E	M_{r1}	M_{FT}	M_{r2}	M_{r3}
Bullying Behaviors (R^2)	.84	.89	.98	.78	.87
Macrosystem	-.067				
Exo: Family SES	.041				
Exo: School Climate	-.065	.011			-.215***
Mesosystem	.104***	.025			
Micro: Family Interactions	.235***	.225***	.234***	.243***	.250***
Micro: Teacher Interactions	.258**	.228**	.250**	.144*	.324***
Micro: Peer Interactions	-1.026**	-1.230**	-1.532*	-.896**	-1.029***
Individual Trait: Victimization	.516***	.507***	.512***	.516***	.512***
Individual Trait: Tendency	1.666***	1.841***	2.160**	1.468***	1.721***
Exo: School Climate (R^2)	.19	.45	.34	.35	.34
Macrosystem		-.558***	-.615***	-.580***	-.567***
Exo: Family SES		-.093**	-.106**	-.104**	-.110***
Mesosystem	.090*	.056			.082*
Micro: Family Interactions	-.057				
Micro: Teacher Interactions	.525***	.449***	-.065		
Micro: Peer Interactions	.211**	.347***	-.016		
Mesosystem (R^2)			.01	.03	.03
Exo: School Climate			.071		
Micro: Family Interactions				-.173***	-.172***
Micro: Family Interactions (R^2)		.01	.01	.01	.01
Exo: Family SES		.089**	.090**	.090**	.089**
Micro: Teacher Interactions (R^2)	.48	.49	.54	.52	.58
Exo: School Climate			.320***	.282***	.340***
Individual Trait: Tendency	-.693***	-.700***	-.640***	-.623***	-.655***
Micro: Peer Interactions (R^2)	.78	.81	.84	.77	.79
Macrosystem				.046	.117**

Table 23 continued

Exo: School Climate			*.050*		
Individual Trait: Tendency	.885***	.899***	.922***	.863***	.856***
Individual Trait: Victimization (R²)	.10	.10	.11	.11	.11
Mesosystem		*.115****	.115***	.102**	.101**
Micro: Family Interactions	-.251***	-.241***	-.243***	-.237***	-.235***
Micro: Teacher Interactions	**.040**				
Micro: Peer Interactions	.143*	.098*	.094*	.104*	.107*
Individual Trait: Tendency (R²)	.26	.34	.34	.36	.34
Macrosystem		*.273****	.258***	.250***	.199***
Mesosystem		*.211****	.231***	.209***	.210***
Micro: Family Interactions	-.512***	-.468***	-.469***	-.471***	-.474***

Note: a) The standardized path coefficients, which were insignificant and which were dropped in the subsequent model estimations, are in **Bold**.

b) The standardized path coefficients for paths, which were added based on the results of MI (Modification Index) and theoretical consideration, are in *Italics*.

The nomological validity of the ecological prediction model can be tested by comparing chi-squares from both the ecological model and the measurement model. An insignificant difference between the chi-square difference indicates that the theoretical model is valid in accounting for the observed relationships between the latent constructs (Anderson & Gerbing, 1988). To do the test, the chi-square for the measurement model was subtracted from that of the ecological model (1400.114 − 1153.164 = 246.95), and the difference between the two degrees of freedom was 44 (357 − 313 = 44). This chi-square difference was significant at $p < .05$. Thus, the result indicates that the initial ecological model was not successful in accounting for the paths among the constructs. Therefore, a modification of the model has been carried out to find a better-fitting model in

subsequent analysis steps.

B. Revised Model 1 (M_{r1})

Although model modification is necessary in some cases, there is always

inevitable danger in model modification. This danger stems basically from

implicitly changing relationships between the observed constructs, a practice that

results in a data-based model (Anderson & Gerbing, 1988; Hatcher, 1994; Kline,

1998). Since dropping paths is generally safer than adding paths, one cautious

way to begin the modification process is dropping paths that do not significantly

hurt the model's fit (Bentler & Chou, 1987). Thus, this study begins the

modification process with dropping insignificant paths. To add paths that seem to

be theoretically and statistically plausible, this study relies on the MI (Modification

Index) based on careful theoretical elaboration. The MI results are presented in

Table 24. The values in the table suggest how much the chi-square values in

each model can be reduced by adding suggested paths between the observed

constructs.

Table 24. Results of Modification Indexes from All Models

		Exogenous					
		F1	F2	F3	F4	F5	F6
M_E	School Climate	**73.641**	**7.422**				5.888
	Family Interactions	4.793	**6.516**		35.264		
	Teacher Interactions	48.199					
	IT: Victimization				**11.396**		
	IT: Tendency	**34.444**			**28.269**		
M_{r1}	Family Interactions				20.267		
	Teacher Interactions	16.297			6.452		
	Peer Interactions	4.081	6.445				
	IT: Victimization	5.933		4.551			
M_{FT}	Bullying Behaviors		4.021				
	Mesosystem					**19.749**	
	Peer Interactions	**4.821**	5.581				
	IT: Victimizations	5.823		5.050			
M_{r2}	Bullying Behaviors		4.569	**7.587**			
	School Climate				**5.170**		
	Teacher Interactions				4.985		
	Peer Interactions		6.598	5.659			
	IT: Victimizations	5.510		4.884			

Note: a) F1=Macrosystem, F2=SES, F3=School Climate, F4=Mesosystem, F5=Family Interaction, F6=Individual Traits: Victimization.

b) MIs (Modification Indexes), which were selected to add a path, are in **Bold**.

Four insignificant paths were first dropped from the model. The path between school climate and bullying behavior is kept in the next model because the ecological theory of bullying suggests a direct effect and considers this relationship to be important. Then, six new paths which seem to be theoretically valid were selected out of the total 10 MI for addition in M_{r1} Revised Model #1. Those paths are between school climate and the macrosystem (MI=73.641),

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school climate and family SES (MI=7.422), family interactions and family SES (MI=6.516), prior victimization and the mesosystem (MI=11.396), the individual tendency and the macrosystem (MI=34.444), and the individual tendency and the mesosystem (MI=28.269). The ecological system theory suggests that all levels of systems interact with each other to influence children's behavior, and especially the macro- and the mesosystem have distal but important influences over children (Bronfenbrenner, 1979, 1989).

Model fit indexes are presented in Table 22, in the row headed "M_{r1} Revised Model #1." Overall, this model does not do well in accounting for relationships between the observed constructs, because the chi-square value (1193.766) is significant at 355 degrees of freedom. However, in SEM, obtaining a nonsignificant chi-square value is very difficult with an especially large data set, so many use other indexes as well to evaluate model fit (Hatcher, 1994; Kline, 1998). First, this model significantly improved from the initial ecological model. The difference in the chi-square test between M_E and M_{r1} is 206.348, which is significant at df=2. In addition, all other indexes indicate the model is a good fit to the data (GFI=.934, AGFI=.919, CFI=.904, RMSEA=.044). However, there are still three insignificant paths. They are between school climate and bullying, the mesosystem and bullying, and the mesosystem and school climate. Overall, this model explained significantly more variance, than the initial ecological model, in bullying behavior (R^2=.89), school climate (R^2=.45), peer interactions (R^2=.81), and individual traits (R^2=.34).

C. The Full Theoretical Model (reciprocal relationship of climate, M_{FT})

In this model, a reciprocal relationship between school climate and some exogenous variables has been added. Since SEM allows treating all of the latent constructs as endogenous, and since the ecological system theory suggests a significant contextual effect over individual behavior and micro- and mesosystems, the paths between school climate and teacher interactions, school climate and peer interactions, and school climate and the mesosystem have been added to estimate model improvement.

Model fit indexes are presented in Table 22, in the row headed "M_{FT} Full Theory Model." The chi-square value (1176.748) was significant at df=355, meaning that the null hypothesis of a good model fit should be rejected. However, compared to M_{r1}, this model improved significantly ($\Delta\chi^2$ = 17.017at the same level of df), and other model fit indexes indicated the model is a good fit to the data (GFI=.935, AGFI=.921, CFI=.906, RMSEA=.043). Overall, this model explained significantly more variance than the M_{r1}, in bullying behavior (R^2=.98), teacher interactions (R^2=.54), and peer interactions (R^2=.84).

The results of testing the reciprocal relationship between school climate and the micro- and the mesosystems suggest that school climate significantly influences only teacher interactions. Once a reciprocal relationship of school climate was considered, the bidirectional path between peer interaction and school climate became insignificant. In the subsequent modification, those insignificant paths were dropped.

D. Revised Model 2 (M_{r2})

From the previous modification, paths between teacher interaction and school climate, peer interaction and school climate, school climate and the mesosystem, and school climate and peer interaction have been dropped. The MI suggested possible paths between family interaction and the mesosystem (MI=19.749) and between the macrosystem and school climate (MI=4.821). Both paths seem to be plausible based on the ecological system theory. According to the theory, parents determine and influence types of interactions with children within the family. Parents also determine levels of parents-teacher communication and parent-peer communication. Thus, those two paths were added in M_{r2}.

Model fit indexes are presented in Table 22, in the row headed "M_{r2} Revised Model #2." The chi-square value (1163.363) was significant at df=357, meaning that the null hypothesis of a good model fit should be rejected. However, compared to M_{FT}, this model improved significantly ($\Delta\chi^2$ = 13.386 at df=2), even thought R^2 for all of the endogenous variables have been decreased compared to M_{FT}. Other model fit indexes indicated the model is a good fit to the data (GFI=.936, AGFI=.922, CFI=.907, RMSEA=.043).

E. Revised Model 3 (M_{r3})

In M_{r2}, there was one path which was not significant, between the macrosystem and peer interaction. This path has been dropped in this model. The MI results suggested expected significant paths between school climate and bullying (MI=7.587) and the mesosystem and school climate (MI=5.170). These

two paths, which were dropped in M_{r1}, were added back in M_{r3}.

Model fit indexes are presented in Table 22, in the row headed "M_{r3} Revised Model #3." The chi-square value (1138.318) was significant at df=355, meaning that the null hypothesis of a good model fit should be rejected. However, compared to M_{r2}, this model improved significantly ($\Delta\chi^2$ = 25.045 at df=2). In addition, R^2 increased significantly for bullying behavior (R^2=.87), teacher interactions (R^2=.58), and peer interactions (R^2=.79). Other model fit indexes indicated the model is a good fit to the data (GFI=.937, AGFI=.923, CFI=.910, RMSEA=.042). Figure 8 summarizes the revised model #3. Overall, this final model provided the best model fit indexes and since chi-square tests indicated that models have been improved significantly, this study retains this model as the "final" and "best-fitting" model.

Figure 8. Revised Model 3, Ecological Prediction Model of Bullying Behaviors
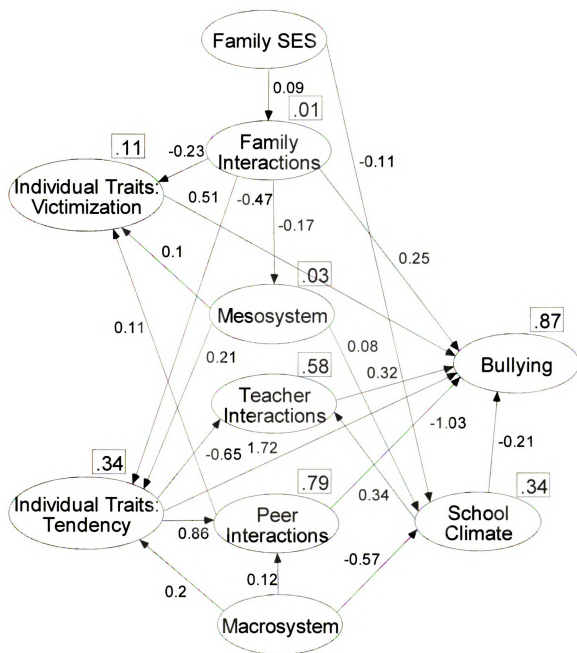
VI. STRUCTURAL EQUATION MODELING: MULTIPLE GROUP ANALYSIS

In this section, multiple subgroup analysis was attempted to see if the best fitting model identified is consistent across different subgroups, which were categorized based on duration and visibility of bullying behaviors. As mentioned in Chapter 2, bullying behaviors vary according to duration and visibility of the behaviors. Specifically, physicality/severity of the behaviors is found to be related to levels of persistence of the behaviors in Korea (KEDI, 1998; Kwon, 1999). In addition, more serious bullying behaviors openly take overt forms of advertising bullying behaviors to influence other peer groups (KEDI, 1998; Kwon, 1999). Thus, it will be useful to see whether the ecological prediction model holds consistent across different groups of bullies.

It has been suggested that there are possibly three types of bullying behaviors in terms of duration and visibility, 1) chronic visible (wangtta group), 2) chronic-invisible and non-chronic-visible (euntta group), and 3) non-chronic-invisible bully groups (tta group) (see Chapter 2, Section 1. Definition of Bullying). Thus, this study divides data into three subgroups accordingly. Each subgroup has the same dependant variables, i.e., frequency of relational, verbal, and physical bullying behaviors. Thus, this subdivision takes all of the severity, duration, and visibility dimensions into account.

For duration, since persistence of bullying behaviors usually lasts a semester, q52 ('Have you been doing the above things to them during the entire semester?') has been selected to categorize the data into chronic vs. non-chronic groups. Simple frequency statistics showed that 159 students said they bullied

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others for the entire semester. For visibility, a scale developed from questions 54 – 58 was used to categorize the data into covert vs. overt groups (mean=14.02, range=5~25, see Table 8 and 10).

For the first step of multiple group analysis, data were divided into three data sets. Thus, there were separate data sets for overt chronic bullies (wangtta group, n=81), covert-chronic and overt-non-chronic bullies (euntta *group*, n=549), and covert-non-chronic bullies (tta group, n=608). Second, the measurement model used in the previous structural equation modeling was created for the three groups, and the model was estimated. The free model of the measurement model yielded the chi-square value 1998.470. The value is significant at df=939. Next, the factor loadings (lambdas) were constrained across three groups. The constrained model yielded the chi-square value 2075.697. The degree of freedom was 975. The χ^2 different of these two model shows significant difference ($\Delta\chi^2$=77.227, df=36). This means that the measurement model is not assumed to be equal across three groups of bullies. Consequently, further multiple group analysis was not performed.

CHAPTER 5

DISCUSSION AND CONCLUSION

I.   Summary and Discussion
II. Limitations and Recommendations
III. Conclusion and Policy Implications

I. SUMMARY AND DISCUSSION

1. Multivariate Analysis

The multivariate analysis revealed that overall roughly 30 – 40 percent of relational, verbal, and physical bullying behaviors have been explained by all of the independent variables in the ecological model. Age was not found to be an important predictor of bullying behaviors in South Korea. Unlike previous studies of bullying in Western countries (Espelage et al., 2003; Harris & Petrie, 2003; Nansel et al., 2001; Pellegrini & Long, 2002; Seals & Young, 2003), it seems that a peak age of bullying for South Korean students is different from that of students in other countries. Consistent with the previous findings (Ah et al., 2005; Baldry, 2003; Bentley & Li, 1995; Bosworth et al., 1999; Boulton et al., 2002; Kim, 2001; Lee & Kaok, 2000; Naito & Gielen, 2005; Park, 2002), individual traits were found to be the important predictors of bullying behaviors. More specifically and interestingly, this study found that each type of prior bullying victimization (relational, verbal, and physical) is the most important predictor of the same type of bullying behavior. In addition, prior physical bullying victimization was predictive of all three types of bullying behaviors. Among the individual

tendencies, dominance, attitude toward aggression and fun-seeking tendency were found to be important predictors of all types of bullying behaviors. Unlike the previous studies (Bosworth et al., 1999), impulsivity was found to be non-predictive of bullying behaviors. It is also worth noting that this study empirically supports Naito and Gielen's (2005) suggestion that a fun-seeking tendency is an important influence on children bullying others.

Only a few microsystem variables were found to be significant predictors of bullying behaviors. Especially, unlike previous findings (Baldry, 2003; Batsche & Knoff, 1994; Bowers et al., 1994; Christie-Mizell, 2003; Espelage et al., 2000; Espelage & Swearer, 2003; Kim & Lee, 2000; Naito & Gielen, 2005; Shields & Cicchetti, 2001; Stevens et al., 2002), family interactions, including parents' attitude, parenting, domestic abuse, and importance of education, were found to be insignificant predictors of any types of bullying behaviors. However, this finding is altered somewhat by considering the results of the structural equation modeling analyses. The effects of the family interactions are mediated by other variables. This result seems to be more logical than the previous finding. Since bullying occurs in school environments, family interactions would not have direct impacts. Rather the family interactions should be mediated by children who function as bridges between family and school (see Bronfenbrenner, 1979).

Unlike family interactions, teacher and peer interactions could have direct impacts on bullying behaviors. However, this study found just weak effects of teacher interactions (only teacher's attitude: Don't like bullying). The peer-related variables --- power dynamic, difference-acceptance, and coercion of public self --- were found to be important predictors of relational and verbal bullying behaviors.

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Of the mesosystem variables, only parent-peer communication was found to be an important predictor of bullying behaviors. The more severe the bullying the greater the communication between parents and peers about bullying. This finding might occur because parents talk to their children's friends about bullying in reaction to bullying of their child.

This study expected that there would be no relationship between family SES and bullying behaviors, if the relationship was examined by simple linear regression. Based on the literature review, this study expected that there would be a U shape distribution of SES with bullying behaviors. However, both scatterplot and mean difference tests showed that there was no U shape distribution, and both bivariate and multivariate analyses suggested that there was no direct relationship between family SES and bullying behaviors. However, family SES was found to be indirectly related to bullying behavior through the micro-, meso-, and exosystems. This finding will be further discussed in the next section.

Most indicators of school climate were found to be insignificant in predicting bullying behaviors, except the positive relationship between a cooperative climate and verbal bullying. Like family interactions, school climate also seems to be mediated by other factors, such as teacher and peer interactions, and individual traits. This null finding is also plausible in that there are children who do not bully others even though they are in the same school climate habited by bullies. In addition, Bronfenbrenner (1979) suggested that an exosystem is a playground for interactions between the individual and the micro- and the mesosystem. As evidence, school climate was found to be mediated by

teacher interaction in SEM, although there was a weak but significant negative relationship with bullying behaviors.

Finally, unlike the previous arguments about the effects of community and cultural characteristics on bullying behaviors, this study found a null relationship between them. According to Bronfenbrenner (1979), the macrosystem has indirect distal influence over individual behaviors. Thus, it is also possible that the effect of the factors in this level could be mediated by other constructs.

2. Structural Equation Modeling

Overall, the structural equation modeling of the ecological system theory for bullying behaviors was found to be successful in accounting for multiple levels of ecological variables and their relationships with bullying behaviors. Eighty seven percent of bullying behaviors has been explained by the final ecological model, compared to lower R^2 values in multivariate analyses (R^2=.291/.416/.361 for three types of bullying behaviors). Many insignificant relationships in the multivariate regression were found to be important significant paths in SEM. In addition, the contextual variables, such as school climate and the macrosystem, were found to have distal indirect effects over individual bullying behaviors.

Prior bullying victimization and an individual tendency to bully have significant strong direct effects on bullying behaviors. Also these factors mediate the effects of family interactions and the mesosystem. This finding is consistent with previous research results about effect of victimization on involvement in delinquency. For instance, testing the general strain theory suggested by Agnew (1981), a study found that violent victimization significantly increased later

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involvement in delinquency (Hay & Evans, 2006). In this study, victimization was viewed as a cause of delinquency, rather than an outcome. The relationship between victimization and psychological problems, e.g., stress, also has been investigated by several studies. These studies found that victimization has a long-lasting psychological effect on children's behaviors (Herrero, Estevez, & Musitu, 2006; Wareham & Dembo, 2007). As Bronfenbrenner (1979) noted, this study also found that individual tendency directly influenced interactions with teachers and peers in schools. It is also worth noting that individual tendency has been influenced by community and cultural characteristics (macrosystem).

As suggested by Bronfenbrenner (1979), the microsystem was important in shaping children's behaviors. Family interactions significantly influenced individual victimization and the tendency to victimize. Also it has a significant direct impact on bullying behaviors. Especially, family interactions are associated with family SES, and family interactions are associated with parental communication with teachers and peers. This result supports the argument that the exosystem functions as a playground for the micro-and the mesosystem. The findings support the conclusion that teacher interactions have been influenced by an individual tendency to bully, the mesosystem, and school climate. Peer interactions are heavily explained by individual tendencies to bully as well as the macrosystem. The variable, peer interactions, has a direct positive relationship with individual victimization, but a direct negative relationship with bullying behaviors. This means, consistent with the previous findings, that children who are more power-oriented, more coercive and less tolerant are more likely to bully others, but less likely to be bullied by others.

Parental communication with teachers/peers had a direct statistical effect on school climate. This is consistent with the conclusion that parental involvement has a strong but indirect impact on children's behaviors in schools. However, as the ecological theory suggests, there was no direct relationship between the mesosystem and bullying behaviors.

Finally, this model also suggested the importance of contextual factors as influences on bullying behaviors. School climate had strong negative relationship to bullying behaviors, and strong positive relationship to teacher interactions. However, school climate did not have significant statistical effects on peer interactions. This may be because there is a gap between students' life and the school system including teachers and other school climate variables. Korean scholars have argued that although school climate has an indirect influence over students' behaviors, Korean students often perceive teachers and school policies and rules as irrelevant to their lives (Park, 2003; Shin, 2000). They argued that traditional educational philosophy, which emphasizes guiding students to become good human beings, is not accepted by contemporary teachers and students, but an emphasis on academic achievement has taken the place of the traditional philosophy. Thus, they argued, students think that schools are the places where they learn knowledge rather than the places where they mature and develop. Consequently, it may be possible that Korean students think that school climate, including academic standards, cooperativeness, and any anti-bullying policy, does not directly affect what is actually going on among their friends.

A recent study also revealed a very similar result about partial effects of school climate on students' behaviors. Gottfredson and his colleagues found that

psychosocial climates "did not influence student victimization or delinquent behavior" (Gottfredson, Gottfredson, Payne, & Gottfredson, 2005). Their structural equation model did not produce significant paths from the psychosocial school climate factor, which included organizational focus, morale, planning, and administrative leadership. However, this study found an indirect path from school climate to bullying through teacher interaction. By adding reciprocal relationship between school climate (a type of exosystem) and microsystems, this study found that school climate could influence children's behaviors indirectly.

Likewise, community characteristics were found to be important indirect influences on bullying behaviors. As Bronfenbrenner (1979) suggested, this study empirically found that collectivistic community characteristic has a distal indirect influence on children's bullying behavior through individual traits, microsystem, and exosystem. This finding provides empirical evidence for Naito and Gielen (2005). Although different levels of collectivism have been compared across different school districts, this study could not compare effects of collectivistic vs. individualistic characteristics on bullying behavior due to the sampling frame. Future study will benefit from conducting comparative study on this regard.

II. LIMITATIONS AND RECOMMENDATIONS

There are several limitations in this study. First, although this study attempted to overcome the limitations of cross-sectional data, there is still a danger of drawing causal inference based on the results. For example, this study expected that the mesosystem (parental communication with peers) would be negatively related to bullying behaviors. However, the results suggested that there was a significant positive relationship between them. Based on this result, it is hard to say whether parental communication with peers increased bullying behaviors. Instead, it would be more plausible to say that parental communication has increased to react to increased bullying behaviors. In addition, the R-square values were much greater than is normally found in empirical studies. One possible reason for this high level of R-square values is that the data are not longitudinal, and the R^2 is inflated by reciprocal relationships between systems. Thus, it is recommended that future ecological study of bullying should collect longitudinal data for making stronger causal inferences.

Unlike previous studies on bullying in Western countries, it seems that a peak age of bullying for South Korean students is different from that of students in other countries. Unfortunately, this study included only middle school students, so that finding a peak age for bullying behaviors among South Korean students is impossible. In addition, because of limited resources, the current study does not investigate the escalation of bullying behaviors into anti-social and violent behaviors during puberty or early adulthood. Thus, it is recommended that further study might benefit from including elementary and high school students as study

subjects.

Finally, this study intended to investigate whether the ecological model of bullying was consistent across different groups of bullies, wangtta, euntta, and tta groups. However, the initial step of multiple group analysis revealed that the measurement model developed in this study was not equal for the different groups, meaning that further comparison between path coefficients in models in each group does not yield valid results (Kline, 1998). This result indicates that a better measurement model is required to do further study of group differences.

III. CONCLUSION AND POLICY IMPLICATIONS

Although bullying has not been a major research topic in South Korea as well as the United States, it has been studied to some extent for several decades. However, lack of empirical evidence for the ecological approach to bullying in schools has been generating doubt about the utility of the ecological model. The present study is unique in that it applies and tests the ecological system theory for bullying. The results, overall, suggest the utility of the ecological approach and that the ecological model of bullying accounted for a high portion of variance in bullying behaviors. Specifically, this study found that individual traits, notably prior bullying victimization, are most important in predicting bullying behaviors. The analysis results also suggested that children's immediate surroundings, including family, teachers and peers, have influence on children's behaviors. As the ecological system theory suggested, school and social contexts also have important and significant impacts over children's behaviors.

Overall, these findings may provide some ideas for effective interventions into schools and families. First, early evaluation of children's school experiences as well as their tendency to bully others may help parents and teachers develop effective intervention to limit victimization and the transition from victim status to offender status. However, emphasis should not be given only to individual characteristics. According to this study, parents and their involvement and teachers and their attitude toward bullying were also important predictors of the bullying phenomenon. A recent antibullying intervention study has been carried out in the Netherlands (Fekkes, Pijpers, & Verloove-Vanhorick, 2006). This study

found that a school-based antibullying policy could reduce bullying behavior, but the policy should be continued to maintain the lowered level of bullying behavior. Furthermore, an extensive review of previous antibullying intervention programs found that school-based interventions with multiple disciplines do significantly reduce bullying in schools. Thus, a school policy that formally increases parental communication with teachers and school administrators would benefit students. Educational and/or training opportunities for teachers about bullying could also benefit students. Above all, the most important finding from this study is that our children, as a center of their world, are influenced by all of their surroundings, so that, instead of blaming deviant children, the rest of the world should pay more attention in developing healthier environments for our future.

APPENDICES

Appendix A. 232 Korean Governmental Districts Categorized into Three Levels of Social Disorganization

Low Level Social Disorganization Areas	Medium Level Social Disorganization Areas	High Level Social Disorganization Areas
충북진천	충북충주	대전중부
충북옥천	충북청주	대전서부
충북영동	충북제천	대전동부
충북보은	충남천안	전북전주
충북단양	충남아산	전북군산
충북괴산	충남보령	전남목포
충남홍성	충남당진	광주서부
충남청양	충남논산	광주북부
충남연기	충남공주	광주동부
충남예산	제주제주	광주남부
충남서천	제주서귀포	인천연수
충남태안	전북정주	인천서부
충남부여	전북장수	인천부평
충남금산	전북익산	인천동부
전북진안	전북완주	인천남동구
전북임실	전북남원	인천계양
전북순창	전북김제	서울중구
전북부안	전남화순	서울중랑
전북무주	전남함평	서울종로
전북고창	전남장성	서울은평
전남해남	전남영암	서울용산
전남진도	전남영광	서울양천
전남장흥	전남여수	서울송파
전남완도	전남순천	서울성북
전남보성	전남나주	서울성동
전남무안	전남광주	서울서대문
전남담양	전남광양	서울마포
전남구례	울산중부	서울광진
전남곡성	울산남부	서울동대문
전남고흥	부산강서	서울도봉

Low Level Social Disorganization Areas	Medium Level Social Disorganization Areas	High Level Social Disorganization Areas
전남강진	대구달성	서울동작
인천옹진	경북포항	서울구로
인천강화	경북칠곡	서울관악
경북청송	경북영천	서울강서
경북청도	경북영주	서울강동
경북의성	경북안동	서울강남
경북울진	경북구미	부산해운대
경북예천	경북경주	부산중부
경북영양	경북경산	부산영도
경북영덕	경남통영	부산연산
경북성주	경남진해	부산서부
경북상주	경남진주	부산사하
경북봉화	경남양산	부산사상
경북김천	경남사천	부산북부
경북군위	경남마산	부산부산진
경북고령	경남김해	부산동부
경남합천	경남거제	부산동래
경남함양	경기화성	부산남부
경남함안	경기포천	부산금정
경남하동	경기평택	대구중부
경남창녕	경기파주	대구수성
경남의령	경기이천	대구서부
경남산청	경기의정부	대구북부
경남밀양	경기용인	대구동부
경남남해	경기안성	대구달서
경남고성	경기남양주	대구남부
경남거창	경기김포	경남창원
경기연천	경기광주	경기안양
경기여주	강원화천	경기안산
경기양평	강원태백	경기시흥
경기가평	강원춘천	경기수원
강원횡성	강원인제	경기성남
강원홍천	강원원주	경기부천

Low Level Social Disorganization Areas	Medium Level Social Disorganization Areas	High Level Social Disorganization Areas
강원평창	강원양구	경기군포
강원철원	강원속초	경기광명
강원정선	강원동해	경기과천
강원영월	강원고성	경기고양
강원삼척	강원강릉	

* Note: 28 districts are omitted from this categorization due to missing information about population mobility and density.

Appendix B. Survey Questionnaire - Students

Questionnaire about School Life

This survey is about things that happen in your school, and the researcher wants to understand how kids treat each other in school.

This is an anonymous questionnaire. This means that you don't have to write your name or let us know who you are. The results of this survey will be used solely for academic research purposes, and any information collected from this survey will be kept confidential.

There is no right or wrong answer. If you are not sure of the answer, please do your best to select one of the choices. However, if you do not want to answer a question for some reason, that is OK.

If you have any question regarding this survey, or if you want to receive results of this study, please contact this researcher with the following contact information:

> Chang-Hun Lee
> School of Criminal Justice
> Michigan State University
> 560 Baker Hall
> East Lansing, MI 48823
> Tel: 517-525-2827, Email: Leechan7@msu.edu

Thank you for your participation.

I.   The following questions ask about your demographic information.

1. Are you a boy or a girl?   1) boy   2) girl

2. What is your grade level?   1) 7th   2) 8th   3) 9th

3. How old are you?   (   )-year-old

4. How do you think of your family's socioeconomic status?
    1) Upper class   2) Upper-Middle class   3) Middle class   4) Lower-Middle class   5) Lower class

For the following two questions, select on of the following options.

A	Unemployed		
B	Skilled worker, wage worker	Group 1	Janitor, Daily Workers (e.g., construction worker), Handyman
C		Group 2	Carpenter, Cook, Employed Farmer, Hair-stylist, Store Clerk
D		Group 3	Self-employed Farmer, Skilled industrial worker, Taxi or bus driver
E	Self-employer		Owner of wholesale / retail store, Owner of restaurant, Self-employed taxi driver
F	White-collar worker		Businessman, Teller, Low-ranked government officials, Elementary school teacher
G	Manager		Middle or high school teachers, Nurse, High skill industrial worker, Small company owner, Managers in company, Middle-ranked government officials, Owner of Farm
H	Professional		Medical doctor, Judge, Prosecutor, Defense attorney, Professor, Owner of big company, Minister, Artist, High-ranked government officials
I	House wife		

5. What is your father's job? (   )

6. What is your mother's job? (   )

7. What is your father's educational level?
    1) No education
    2) Elementary school graduate
    3) Middle school graduate
    4) High school graduate
    5) 2 Year College graduate
    6) 4 Year University graduate
    7) Graduate school or more

8. What is your mother's educational level?

    1) No education

    2) Elementary school graduate

    3) Middle school graduate

    4) High school graduate

    5) 2 Year College graduate

    6) 4 Year University graduate

    7) Graduate school or more

9. What do you think is the total amount of your parents' monthly income?

    1) 500,000 won or lower

    2) 500,000 – 1,000,000 won

    3) 1,000,000 – 1,500,000 won

    4) 1,500,000 – 2,000,000 won

    5) 2,000,000 – 2,500,000 won

    6) 2,500,000 – 3,000,000 won

    7) More than 3,000,000 won

10. What is your average grade level from your last mid-term examination?

    1) 90 – 100

    2) 80 – 90

    3) 70 – 80

    4) 60 – 70

    5) 50 – 60

    6) 40 – 50

    7) 30 – 40

    8) 30 – or lower

11. What is your level of academic achievement in your class?

    1) Upper 10% of your class

    2) Upper 20% of your class

    3) Upper 30% of your class

    4) Middle of your class

    5) Lower 30% of your class

    6) Lower 20% of your class

    7) Lower 10% of your class

12. What is your academic rank in your class from the last mid-term exam?
( )

II. The following questions ask about experiences in school

I have experienced the following things in my class in this school year. (tick (V) for each category)	Never	1 or 2 times	Three times	Four times	More
Relational:					
13. rumors about me					
14. being purposely left out of things					
15. being ignored					
16. being left out of conversations					
Verbal:					
17. being teased					
18. being taunted					
19. being threaten					
20. others called me names					
21. others made sexual comments about me					
22. others talked about my physical defects					
Physical:					
23. kicked					
24. hit & punched					
25. cut with sharp objects					
26. deliberately pushed					
27. gotten bones broken					

Duration:

28. How long have you been experiencing the above things?	Less than 2 weeks ( )	For 2 weeks ( )	For 4 weeks ( )	For 2 months ( )	For 4 months ( )	More ( )
29. Have you been experiencing the above things during the entire semester?	1) yes			2) no		
30. Have you experienced these things in an earlier grade?	1) yes			2) no		

Visibility:

For the different things you have experienced, do you agree or disagree?	Disagree	Somewhat disagree	neutral	Mostly agree	agree
31. They have done the above things so they are hidden.					
32. They have done the above things so others see them.					

III. The following questions ask about your general actions in school.

D (Disagree), SD (Somewhat disagree), N (Neutral), MA (Mostly Agree), and A (Agree)

Tick (∨) for each category:	D	SD	N	MA	A
33. I try to treat all my classmates equally.					
34. I try to be as open as I can to all my classmates.					
35. I want to be considered as a fair person by my classmates.					

IV. The following questions ask about actions in school.

I have done the following	Never	1 or 2	Three	Four	More

things to a classmate in my class in this school year. (tick (∨) for each category)		times	times	times	
Relational:					
36. spread rumors					
37. purposely left a classmate out of things					
38. ignored a classmate					
39. left a classmate out of conversations					
Verbal:					
40. teased a classmate					
41. taunted a classmate					
42. threatened a classmate					
43. called a classmate names					
44. made sexual comments to make a classmate uncomfortable					
45. talked about physical defects					
Physical:					
46. kicking					
47. hitting & punching					
48. cutting with sharp objects					
49. deliberately pushing					
50. breaking bones					
Duration:					
51. For classmates you did these things to the most, how long have you been doing the above things to them?	Less than 2 weeks ( )	For 2 Weeks ( )	For 4 weeks ( )	For 2 months ( )	For 4 months ( )	More ( )

52. Have you been doing the above things to them during the entire semester?	1) yes		2) no		
53. Did you do these things to them in an earlier grade?	1) yes		2) no		

Visibility:

For the different things you did, do you agree or disagree?	Disagree	Somewhat disagree	Neutral	Mostly agree	Agree
54. I try to hide my behavior from other students.					
55. I don't care what other students think about my behaviors.					
56. I try to show my behaviors to other students because they like what I do.					
57. I have done the above things so others see them.					
58. I have done the above things so they are hidden.					

Involvement:

59. I never have been involved with the above things in this school year.					
60. I have never done the above things, but I don't feel bad for the person who they are done to.					
61. I have never done the above things, but I think I understand why others do such things.					
62. I have initiated the above					

things, and am fully involved with such things.					

V. The following questions ask about reasons for the actions.

D (Disagree), SD (Somewhat disagree), N (Neutral), MA (Mostly Agree), and A (Agree)

Tick (∨) for each category:	D	SD	N	MA	A
Individual Traits: Dominance					
63. It is difficult to refuse when my friends ask me to do a favor.					
64. I usually try to avoid confrontation even if I am right.					
65. I usually try to observe rules and regulations.					
66. I hate to lose in an argument.					
Individual Traits: Impulsivity					
67. It is difficult for me to sit still during the class.					
68. I start things but have a hard time finishing them.					
69. I do things without thinking or planning.					
70. I need to use a lot of self-control to keep out of trouble.					
Individual Traits: Attitude towards aggression					
71. If I walked away from a fight, I'd be a coward.					
72. It is okay to hit someone who hits you first.					
73. If a kid teases me, I usually cannot get him/her to stop unless I hit him/her.					
74. If I refuse to fight, my friends will think I'm afraid.					
Individual Traits: Fun seeking tendency					
75. I did the above things to the person for fun.					
76. My friends enjoy it, because they think I am having fun with them.					
77. It is fun to watch Wangtta students go through these things.					

78. There is nothing wrong with these things because they are just for fun.					

Microsystem variables: Family interactions

Perceptions of parents' attitude towards bullying:

79. I think my parents do not like me teasing other students.					
80. I think my parents do not like me hitting other students.					
81. I think my parents do not like me making fun of other students.					
82. I think my parents do not care about me teasing classmates in school.					
83. I think my parents do not care about me hitting classmates in school.					
84. I think my parents do not care about me making fun of classmates in school.					

Perceptions and experiences of authoritarian parenting:

85. My parents use physical discipline for punishments.					
86. I think my parents want to have control over almost every aspect of my life.					

Child's experiences and witness of domestic abuse:

87. My parents sometimes hit me.					
88. I saw my father hit my mother at home.					
89. I saw my mother hit my father at home.					
90. I think my parents sometimes verbally abuse me.					

Importance of education:

91. I think my parents emphasize educational achievement too much so that I feel too much pressure.					
92. I think my parents believe that academic success is the most important thing in my life.					

Microsystem variables: Teacher interactions

Perception of teachers' attitude towards bullying:

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93. I think my teacher does not like me teasing other students.					
94. I think my teacher does not like me hitting other students.					
95. I think my teacher does not like me making fun of other students.					
96. I think my teacher does not care about kids teasing classmates in school.					
97. I think my teacher does not care about kids hitting classmates in school.					
98. I think my teacher does not care about kids leaving out classmates in school.					
Perception of effectiveness of teacher's intervention:					
99. I think my teacher is not good at preventing kids from teasing, hitting, and ostracizing their classmates in school.					
100. I think my teacher is not aware of what is going on among students, especially whether there is ostracism, teasing, hitting, and other ways of getting at a classmate.					
Teacher's moral authority:					
101. I don't care about what my teacher says about morality.					
102. I think my classmates do not care about what my teacher says about how classmates treat each other.					
103. I think my teachers' moral standard is good for their generation, not for my generation.					
Microsystem variables: Peer interactions					
Power dynamic:					
104. I believe getting power over other kids is important to survive in school.					
105. I respect those classmates who have their own power to control others in the class.					
106. I think it is OK that there is a group of students					

who have power to control other classmates.					
107. I believe physical strength is important to have since it gives me power to control other classmates.					

Microsystem variables: Peer interactions					
Level of difference-acceptance:					
108. My friends do not like to talk and hang out with those who are different from them in terms of clothing style, hair style, and other things.					
109. I do not like to talk and hang out with others who behave differently and who have different tastes in hobbies, clothing style, etc.					
110. I would not have my current friends in school if we could not find any similarity among us.					
111. I think my close friends will not accept a new friend if he/she doesn't share any similarity with us.					

Microsystem variables: Peer interactions					
Coercive conformity:					
112. I believe that to remain friends, it is important to behave according to how my friends think of me.					
113. I really don't like to see someone act like they are beautiful, kind, or smart.					
114. I think, if someone pretends to be beautiful, kind, or smart, my friends will not hang out with him/her.					
115. I really want to correct someone's behavior if he/she is not acting the way others think he/she should.					

Microsystem variables: Peer interactions					
Pseudo friendship:					
116. I think my friends in class will not help me if I am in very serious trouble, such as severely harming others, damaging others' property, or being arrested for my actions.					

	N	O	A	M	V
117. I think my friends in class will not help me if I am bullied by other students in the class.					
118. I think having friends who are bullying others will help me not to be bullied.					
119. I think my friends in class will not protect me from other kids because they could be victimized.					

N (Never), **O** (Once), **A** (A few times), **M** (More than a few times), **V** (Very often)

How many times did the following things happen this school year? Tick (∨) for each category:	N	O	A	M	V

Mesosystem variables: Parents' communication with teachers

120. How often in this school year did your parents and teachers talk to each other to share information about students teasing others?					
121. How often in this school year did your parents and teachers talk to each other to share information about students hitting others?					
122. How often in this school year did your parents and teachers talk to each other to share information about students making fun of others?					

Mesosystem variables: Parents' communication with peers

123. How often in this school year did your parents and friends talk to each other to share information about students teasing others?					
124. How often in this school year did your parents and friends talk to each other to share information about students hitting others?					
125. How often in this school year did your parents and friends talk to each other to share information about students making fun of others?					

D (Disagree), **SD** (Somewhat disagree), **N** (Neutral), **MA** (Mostly Agree), and **A** (Agree)

Tick (∨) for each category:	D	SD	N	MA	A
Exosystem variables: School climate					
Academic standards & General Image of School:					
126. I think my school sets academic standards very high so that I should feel proud of it.					
127. Overall, I am proud of being a part of my school.					
128. I think my school values academic achievement.					
Competitive vs. cooperative school climate:					
129. In my school, winning is a more important goal than cooperation among students.					
130. In my school, academic success is more valued than good friendships.					
Students-Teachers Cohesion					
131. Teachers in my school do care what we are doing and how we are doing in school.					
132. I feel that my teacher is a very close friend, so that I can bring any personal problem to him or her.					
133. Teachers and students in my school work very closely to make our school better.					
Perception of moral atmosphere:					
134. I don't do smoking, stealing, fighting, or teasing because I am afraid of being punished by other students.					
135. In my school, students have a chance to get together and discuss problems and solutions for the problems.					
136. In my school, wrong doings are punished appropriately.					
Parental involvement in school boards:					
137. I think my school gets a lot of parental involvement in school affairs.					
138. I think my parents have a say in decision making about school policies, rules, and programs.					
School policies, rules, programs:					

139. I think my school clearly set forth anti-bullying policies and rules.					
140. I think my school is eager to develop anti-bullying programs.					
141. I think my school's anti-bullying efforts are useless and not helpful for prevention of bullying.					

Macrosystem variables:

Individualism: (VI: Vertical Individualism, HI: Horizontal Individualism)

142 (VI). In my neighborhood, it is important to win in any competition.					
143 (VI). In my neighborhood, it is important to do better than any others in every thing.					
144 (VI). I enjoy being in a very competitive environment.					
145 (VI). I work harder when I see others achieve better than I do.					
146 (HI). In my neighborhood, it is important to pursue my own individuality.					
147 (HI). In my neighborhood, I rely on myself rather than others.					
148 (HI). It is important for me to develop an independent personality.					
149 (HI) I am proud of having my own personality.					

Collectivism: (VC: Vertical Collectivism, HC: Horizontal Collectivism)

150 (VC). In my neighborhood, it is important to respect decisions made by the group.					
151 (VC). In my neighborhood, it is important to respect the majority's opinions in the group.					
152 (VC). I surrender my interests to group interests.					
153 (VC). It is important for me to support my family even if I have to sacrifice myself.					
154 (HC). In my neighborhood, I will be happy when others around me are happy.					
155 (HC). In my neighborhood, it is my pleasure to be					

with others.					
156 (HC). It is important for me to get along with others.					
157 (HC). I will be very happy when my friend earns an award.					
Levels of Collectivism of Peer Group					
158. It is important for maintaining friendship to respect decisions made by my friends.					
159. Sometimes I have to surrender my interests to my friends' interests to keep our friendship.					
160. My friends believe that friendship should be kept at any sacrifice.					
161. My friends will be happy when I am happy.					
162. My friends will be happy when I earn an award.					
Social Disorganization:					
163. My neighbors do not care what my friends do in this area.					
164. Teenagers in my neighborhood are out of control.					
165. It is difficult for kids to make friends in my neighborhood.					

******************Thank you for your participation*****************

Appendix C. Survey Questionnaire – Teacher

Questionnaire about Class and School

This survey is about the class that you are in charge of and the school that you currently work in. This researcher wants to know how you perceive students in your class, teachers, rules and programs in your school.

This is an anonymous questionnaire. This means that you don't have to write your name or let us know who you are. The results of this survey will be used solely for academic research purpose, and any information collected from this survey will be kept confidential.

If you have any question regarding this survey, or if you want to receive results of this study, please contact this researcher using the following contact information:

Chang-Hun Lee
School of Criminal Justice
Michigan State University
560 Baker Hall
East Lansing, MI 48823
Tel: 517-525-2827, Email: Leechan7@msu.edu

Thank you for your participation.

I. Questions about the class

4. How many students are there in your classroom?

    Male (   ) Female (   ) Total (   )

5. What is your class's academic rank in your school?

    (out of the total   classes)

Please evaluate your class on the following aspects.

D (Disagree), **SD** (Somewhat disagree), **N** (Neutral), **MA** (Mostly Agree), and **A** (Agree)

Tick (∨) for each category:	D	SD	N	MA	A
Commitment to Education:					
3. Students in my class think academic achievement is the most important thing.					
4. Students in my class believe entering college is the most important goal they have.					
5. All students in my class want to enter college-prep high schools.					
Cohesion:					
6. Students in my class work together as a team to prepare school events, such as athletic competition.					
7. Students in my class work together to clean their classroom.					
8. Students in my class take care of each other.					
Safety:					
9. I believe my classroom is a safe place for students.					
10. Students cannot harm other students at least in my classroom.					
11. I believe my classroom is well supervised, so that it provides a safe environment for my students.					
Punitive Climate:					
12. Students in my class want to prohibit delinquent behaviors by peer pressure.					
13. Students in my class report to me if there is any behavior that harms other students.					
14. I have seen that students in my class punish others students for their delinquent behavior.					

Moral Authority:					
15. I believe students in my class care what I say about morality.					
16. I have a say in how students treat each other.					
17. My moral standard is well accepted and practiced among students in my class.					
Bullying problems:					
18. I am well aware of students teasing other classmates in my class.					
19. I am well aware of students hitting other classmate in my class.					
20. I am well aware of students leaving out other classmate in my class.					
21. I know exactly who teases, hits, or leaves out other classmates in my class.					
22. I know exactly who is teased, hit, or left out by others students.					
Number of Delinquent Students:					
23. How many delinquent students you think you have in your class?					
24. How many students have been suspended in your class this semester?					
25. How many students you think are out of your control?					

II. Questions about the school

26. What is your student population in your school?

Male (   ) Female (   ) Total (   )

27. Is there any school policy or rule prescribing what constitutes bullying behaviors and what are punishments for those behaviors in your school?

28. If yes, when was the policy or rule set forth?

29. Is there any school training program for teachers to reduce bullying in school?

30. If yes, when was the program established?

Please evaluate your school for the following aspects.

D (Disagree), SD (Somewhat disagree), N (Neutral), MA (Mostly Agree), and A (Agree)

Tick (∨) for each category:	D	SD	N	MA	A
Commitment to Education:					
31. Students in my school think academic achievement is the most important thing.					
32. Students in my school believe entering college is the most important goal they have.					
33. All students in my school want to enter college-prep high schools.					
Safety:					
34. I believe my school is a safe place for students.					
35. Students cannot harm other students at least in my school.					
36. I believe my school is well supervised, so that it provides a safe environment for my students.					
Punitive Climate:					

37. Students in my school want to prohibit delinquent behaviors by peer pressure.					
38. Students in my school report to teachers if there is any behavior that harms other students.					
39. I have seen that students in my school punish others students for their delinquent behavior.					
Moral Authority:					
40. Students in my school care what teachers say about morality.					
41. Teachers have a say in how students treat each other.					
42. Teachers' moral standard is well accepted and practiced among students in my school.					
Bullying problems:					
43. Teachers are well aware of students' behaviors, such as teasing, hitting, and leaving out other classmates, in my school.					
44. Teachers know exactly who teases, hits, or leaves out other classmates in my school.					
45. Teachers know exactly who is teased, hit, or left out by others students.					
Smooth Administration:					
46. Simple, non-time consuming procedures exist for the acquisition and use of resources.					
47. Teachers and administrators get along at this school					
48. Resources are well allocated to administer school policies and programs.					
Staff Morale:					
49. Our problems in this school are so big that it is unrealistic to expect teachers to make much of a dent					

in them.					
50. The teaching faculty is frustrated.					
51. Teachers are satisfied with what they are doing.					
Clarity of School Rules:					
52. Everyone in this school knows the rules for behaviors, such as teasing, hitting or leaving out other students.					
53. Teachers teach students about the rules for behaviors, such as teasing, hitting or leaving out other students, and what they are expected.					
54. The principal is firm with regard to the rules for behaviors, such as teasing, hitting or leaving out other students.					
Fairness of School Rules:					
55. The rules for behaviors, such as teasing, hitting or leaving out other students, are fair.					
56. The principal is fair with regard to the rules for behaviors, such as teasing, hitting or leaving out other students.					
57. The punishment for breaking the rules is the same no matter who students are.					
Effectiveness of Rules, Policies, and Programs:					
58. The current school rules for behaviors, such as teasing, hitting or leaving out other students, are effective in reducing the behaviors.					
59. The current school policies for behaviors, such as teasing, hitting or leaving out other students, are effective in reducing the behaviors.					
60. The programs for teachers are helpful to reduce bullying in school.					

BIBLIOGRAPHY

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. _Criminology, 30_(1), 47.

Agnew, R. (2001). _Juvenile delinquency: causes and control._Los Angeles, Calif.: Roxbury Pub. Co.

Ah, Y., W. Jeong, & T. Cha. (2005). 중학생의 따돌림 가해 실태 및 심리사회적 요인 [The study on the actual conditions of bullying and the psychosocial factors affecting bullying behavior]. _수산해양교육연구 [Journal of Fish and Marine Science of Education], 17_(3), 390-403.

Ahmad, Y., & P. K. Smith. (1990). Behavioral measures: Bullying in schools. _Child Psychology and Psychiatry, 12_, 26-27.

Ahn, H. (2002). _이지메가 왕따에 미친 영향에 관한 일고찰 [A study of outfit a thing that 'Ijime' affects 'Wangtta']._ 세명대학교 [Saemyung University].

Akers, R. L. (1996). Is differential association/social learning cultural deviance theory? _Criminology, 34_(2), 229.

Akers, R. L. (2000). _Criminological Theories: Introduction, Evaluation, and Application._Los Angeles, CA: Roxbury Publishing Company.

Andershed, H., M. Kerr, & H. Stattin. (2001). Bullying in school and violence on the streets: Are the same people involved? _Journal of Scandinavian Studies in Criminology and Crime Prevention, 2_(1), 31.

Anderson, C. S. (1982). The search for school climate: A review of the research. _Review of Educational Research, 52_(3), 368 - 420.

Anderson, J. C., & D. W. Gerbing. (1988). Structural equation modeling in practice: A review and recommended two-step approach. _Psychological Bulletin, 103_, 411-423.

Anderson, M., J. Kaufman, T. R. Simon, L. Barrios, L. Paulozzi, G. Ryan, R. Hammond, W. Modzeleski, T. Feucht, & L. Potter. (2001). School-

associated violent deaths in the United States, 1994-1999. *Journal of the American Medical Association, 286*, 2695-2702.

Ando, M., T. Asakura, & B. Simons-Morton. (2005). Psychosocial influences on physical, verbal, and indirect bullying among Japanese early adolescents. *The Journal of Early Adolescence, 25*(3), 268.

Andreou, E., & P. Metallidou. (2004). The relationship of academic and social cognition to behavior in bullying situations among Greek primary school children. *Educational Psychology, 24*(1), 27.

Baldry, A. C. (2003). Bullying in schools and exposure to domestic violence. *Child Abuse & Neglect, 27*, 713-732.

Batsche, G. M., & H. M. Knoff. (1994). Bullies and their victims: Understanding a pervasive problem in the schools. *School Psychology Review, 23*(2), 165-174.

Bauman, S., & A. D. Rio. (2006). Preservice teachers' responses to bullying scenarios: Comparing physical, verbal, and relational bullying. *Journal of Educational Psychology, 98*(1), 219.

Bentler, P. M., & C. P. Chou. (1987). Practical issues in structural modeling. *Sociological Methods & Research, 16*(1), 78-117.

Bentley, K. M., & A. K. F. Li. (1995). Bully and victim problems in elementary schools and students' beliefs about aggression. *Canadian Journal of School Psychology, 11*, 153-165.

Bjorkqvist, K., K. M. Lagerspetz, & A. Kaukiainen. (1992). Do girls manipulate and boys fight? *Aggressive Behavior, 18*, 117-127.

Bollmer, J. M., R. Milich, M. J. Harris, & M. A. Maras. (2005). A friend in need: The role of friendship quality as a protective factor in peer victimization and bullying. *Journal of Interpersonal Violence, 20*(6), 701.

Bosworh, K., D. L. Espelage, & T. R. Simon. (1999). Factors associated with bullying behavior in middle school students. *Journal of Early Adolescence, 19*(3), 341-362.

Bosworth, K., D. L. Espelage, & T. R. Simon. (1999). Factors associated with bullying behavior in middle school students. *Journal of Early Adolescence, 19*(3), 341-362.

Boulton, M. J., & P. K. Smith. (1994). Bully/victim problems in middle-school children: Stability, self-perceived competence, peer perceptions and peer acceptance. *British Journal of Developmental Psychology, 12*, 315-329.

Boulton, M. J., M. Trueman, C. Chau, C. Whitehand, & K. Amatya. (1999). Concurrent and longitudinal links between friendship and peer victimization: Implications for befriending interventions. *Journal of Adolescence, 22*, 461-466.

Boulton, M. J., M. Trueman, & I. Flemington. (2002). Associations between secondary school pupils' definitions of bullying, attitudes towards bullying, and tendencies to engage in bullying: Age and sex differences. *Educational Studies, 28*(4), 353.

Bowers, L., P. K. Smith, & V. Binney. (1994). Perceived family relationships of bullies, victims and bully/victims in middle childhood. *Journal of Social and Personal Relationships, 11*, 215-232.

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*.Cambridge, MS: Harvard University Press.

Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Annals of Child Development* (Vol. 6, pp. 197-249). Greenwich, CT: JAI Press.

Buhs, E. S., G. W. Ladd, & S. L. Herald. (2006). Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement? *Journal of Educational Psychology, 98*(1), 1.

Bursik, R. J. J. (1988). Social disorganization and theories of crime and delinquency: Problems and prospects. *Criminology, 26*, 519-551.

Cairns, R. B., & B. D. Cairns. (1991). Social cognition and social networks: A developmental perspective. In D. J. Pepler & K. H. Rubin (Eds.), *The Development and Treatment of Childhood Aggression* (pp. 249-278). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cairns, R. B., B. D. Cairns, H. Neckerman, S. D. Gest, & J.-L. Gariepy. (1988). Social networks and aggressive behavior: Peer support or peer rejection? *Developmental Psychology, 24*, 815-823.

Canchola, J. A., T. B. Neilands, & J. A. Catania. (2002). *Imputation Strategies for Sexual Orientation using SAS PROC MI*.Cary, NC: SAS Institute, Inc.

Carney, J. V. (2005). Factor structure of the bullying situations identification (BSI) instrument. *Journal of School Violence, 4*(3), 77.

Chan, J. H., R. Myron, & M. Crawshaw. (2005). The efficacy of non-anonymous measures of bullying. *School Psychology International, 26*(4), 443.

Choi, W. (2003). 청소년 자살의 사회구조적 연구 [Social structural analysis of cause of adolescence suicide], *한국사회복지정책학회 [Conference of Korean Social Welfare Policy]*:한국청소년개발원 [Youth Professional Institute of Korea].

Chou, C. P., & P. M. Bentler. (1995). Estimates and tests in structural equation modeling. In R. H. Joyle (Ed.), *Structural Equation Modeling* (pp. 37-55). Thousand Oaks, CA: Sage.

Christie-Mizell, C. A. (2003). Bullying: The consequences of interparental discord and child's self-concept. *Family Process, 42*(2), 237-251.

Chu, H. (1978). The Korean learner in an American school. In T. T. Ladu (Ed.), *Teaching for Cross-Cultural Understanding*.Arlington, VA: Arlington Public Schools.

206

Collins, K., & R. Bell. (1996). Peer perceptions of aggression and bullying behavior in primary schools in Northern Ireland. *Annals of the New York Academy of Sciences, 794*(September), 336-338.

Coloroso, B. (2003). *The Bully, the Bullied, and the Bystander.* New York: Harper-Resource.

Cornell, D. G., & K. Brockenbrough. (2004). Identification of bullies and victims: A comparison of methods. *Journal of School Violence, 3*(2/3), 63.

Cowie, H. (1998). Perspectives of teachers and pupils on the experience of peer support against bullying. *Educational Research and Evaluation, 4*, 108-125.

Crothers, L. M., & E. M. Levinson. (2004). Assessment of bullying: A review of methods and instruments. *Journal of Counseling and Development, 82*(4), 496-503.

Curtner-Smith, M. E., A. M. Culp, C. Scheib, K. Owen, A. Tilley, M. Murphy, L. Parkman, & P. W. Coleman. (2006). Mothers' parenting and young economically disadvantaged children's relational and overt bullying. *Journal of Child and Family Studies, 15*(2), 177.

Dahlberg, L. L., S. B. Toal, & C. B. Behrens. (1998). *Measuring violence-related attitudes, beliefs, and behaviors among youths: A compendium of assessment tools.* Atlanta, GA: Genters for Disease Control and Prevention, National Center for Injury Prevention and Control.

Dill, E. J., E. M. Vernberg, P. Fonagy, S. W. Twemlow, & B. K. Gamm. (2004). Negative affect in victimized children: The roles of social withdrawal, peer rejection, and attitudes toward bullying. *Journal of Abnormal Child Psychology, 32*(2), 159.

Dishion, T. J., D. C. French, & G. R. Patterson. (1995). The Development and Ecology of Antisocial Behavior. In D. Cicchetti & D. Cohen (Eds.), *Developmental Psychopathology, Volume 2: Risk, Disorder, and*

Adaptation (Vol. 2, pp. 421-471). New York: A Wiley-Interscience Publication.

Duncan, G. J., & G. Kalton. (1987). Issues of design and analysis of surveys across time. *International Statistical Review, 55*(1), 97-117.

Elliott, D. S., & V. Harwin. (1974). *Delinquency and Dropout.*Lexington, MS: D.C. Heath.

Elliott, D. S., D. Huizinga, & S. S. Ageton. (1985). *Explaining delinquency and drug use.*Thousand Oaks, CA: Sage.

Espelage, D. L., K. Bosworh, & T. R. Simon. (2000). Examining the social context of bullying behaviors in early adolescence. *Journal of Counseling and Development, 78*(3), 326-333.

Espelage, D. L., M. K. Holt, & R. R. Henkel. (2003). Examination of peer-group contextual effects on aggression during early adolescence. *Child Development, 74*(1), 205-220.

Espelage, D. L., & S. M. Swearer. (2003). Research on school bullying and victimization: What have we learned and where do we go from here? *School Psychology Review, 32*(3), 365-383.

Fagan, J., & D. L. Wilkinson. (1998). Social contexts and functions of adolescent violence. In D. S. Elliott, B. A. Hamburg & K. R. Williams (Eds.), *Violence in American Schools: A New Perspective* (pp. 55-93). Cambridge, UK: Cambridge University Press.

Farrington, D. P. (1993). Understanding and preventing bullying. *Crime and Justice, 17*, 381-458.

Farrington, D. P. (Ed.). (1986). *Age and crime* (Vol. 7). Chicago, IL: University of Chicago Press.

Farver, J. M., & Y. L. Shin. (1997). Social pretend play in Korean- and Anglo-

American preschoolers. _Child Development, 68_(3), 544-556.

Fekkes, M., F. I. M. Pijpers, A. M. Fredriks, T. Vogels, & S. P. Verloove-Vanhorick. (2006). Do bullied children get ill, or do ill children get bullied? A prospective cohort study on the relationship between bullying and health-related symptoms. _Pediatrics, 117_(5), 1568-1575.

Fekkes, M., F. I. M. Pijpers, & S. P. Verloove-Vanhorick. (2006). Effects of antibullying school program on bullying and health complaints. _Archives of Pediatrics & Adolescent Medicine, 160_(6), 638.

Flores, R. L. (2005). Developmental aspects of school violence. In F. L. Denmark, H. H. Krauss, R. W. Wesner, E. Midlarsky & U. P. Gielen (Eds.), _Violence in Schools: Cross-National and Cross-Cultural Perspectives_ (pp. 75-84). New York: Springer.

Flouri, E., & A. Buchanan. (2003). The role of mother involvement and father involvement in adolescent bullying behavior. _Journal of Interpersonal Violence, 18_(6), 634.

Frank, K. A. (2000). Impact of a confounding variable on a regression coefficient. _Sociological Methods & Research, 29_(2), 147-194.

Gest, S. D., S. Graham-Bermann, & W. W. Hartup. (2001). Peer experience: Common and unique features of number of friendships, social network centrality, and sociometric status. _Social Development, 10_(1), 23-40.

Gladstone, G. L., G. B. Parker, & G. S. Malhi. (2006). Do bullied children become anxious and depressed adults? A cross-sectional investigation of the correlates of bullying and anxious depress. _Journal of Nervous and Mental Disease, 194_(3), 201.

Gollob, H. F., & C. S. Reichardt. (1987). Taking account of time lags in causal models. _Child Development, 58_, 80-92.

Gollob, H. F., & C. S. Reichardt. (1991). Interpreting and estimating indirect

effects assuming time lags really matter. In L. M. Collins & J. L. Horn (Eds.), *Best Methods for the Analysis of Change* (pp. 243-259). Washington, DC: American Psychology Association.

Gottfredson, D. C. (1986). An empirical test of school-based environmental and individual interventions to reduce the risk of delinquent behavior. *Criminology, 24*(4), 705-.

Gottfredson, D. C. (2001). *Schools and delinquency*.Cambridge, U.K.; New York: Cambridge University Press.

Gottfredson, G., D. C. Gottfredson, A. A. Payne, & N. Gottfredson. (2005). School climate predictors of school disorder: Results from a national study of delinquency prevention in schools. *Journal of Research in Crime and Delinquency, 42*(4), 412-444.

Gottfredson, G. D., & D. C. Gottfredson. (1985). *Victimization in schools*.New York: Plenum Press.

Graham, S., & J. Juvonen. (1998). A social cognitive perspective of peer aggression and victimization. *Annals of Child Development, 13*, 23-70.

Griffore, R. J., & L. A. Phenice. (2001). *The Language of Human Ecology: A General Systems Perspective*.Dubuque: Kendall/Hunt Publishing.

Harris, S., & G. F. Petrie. (2003). *Bullying: The Bullies, the Victims, the Bystanders*.Lanham: The Scarecrow Press.

Haselager, G. J. T., W. W. Hartup, C. F. M. v. Lieshout, & J. M. A. Riksen-Walraven. (1998). Similarities between friends and nonfriends in middle childhood. *Child Development, 69*(4), 1198-1208.

Hatcher, L. (1994). *A Step-by-Step Approach to Using SAS for Factor Analysis and Structural Equation Modeling*.Cary, NC: SAS Institute Inc.

Hay, C., & M. M. Evans. (2006). Violent victimization and involvement in

delinquency: Examining predictions from general strain theory. *Journal of Criminal Justice, 34*(3), 261.

Haynie, D. L. (2001). Delinquent peers revisited: Does network structure matter? *American Journal of Sociology, 106*(4), 1013-1057.

Haynie, D. L., T. Nansel, P. Eithel, A. D. Crump, K. Saylor, K. Yu, & B. Simons-Morton. (2001). Bullies, victims, and bully/victims: Distinct groups of at-risk youth. *Journal of Early Adolescence, 21*(1), 29-49.

Heinemann, P. P. (1973). *Mobbning: Gruppvald blant barn ogvokane [Bullying: Group violence among children and adults]*.Stockholm: Natur och Kultur.

Herrero, J., E. Estevez, & G. Musitu. (2006). The relationships of adolescent school-related deviant behavior and victimization with psychological distress: Testing a general model of the mediational role of parents and teachers across groups of gender and age. *Journal of Adolescence, 29*(5), 671.

Hodges, E. V. E., M. Boivin, F. Vitaro, & W. M. Bukowski. (1999). The power of friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology, 35*(1), 94-101.

Hodges, E. V. E., M. J. Malone, & D. G. Perry. (1997). Individual risk and social risk as interacting determinants of victimization in the peer group. *Developmental Psychology, 33*(6), 1032-1039.

Hofstede, G. (1991). *Cultures and organizations: Software of the mind*.London: McGraw-Hill.

Hoshino, K. (2001). Higaishya to Kagaishyatono Kankei [Relations between bully and victim]. In Y. Morita (Ed.), *Ijime no Kokusai Hikaku Kenkyu [Cross-national Study of Bullying]* (pp. 73-92). Tokyo: Kaneko Shyobou.

Hu, L. T., & P. M. Bentler. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural Equation Modeling* (pp. 76-99). Thousand Oaks, CA: Sage.

Huizinga, D., & D. S. Elliott. (1986). Reassessing the reliability and validity of self-report delinquency measures. *Journal of Quantitative Criminology, 2*(4), 293-327.

Huttunen, A., C. Salmivalli, & K. M. J. Lagerspetz. (1996). Friendship networks and bullying in schools. *Annals of the New York Academy of Sciences, 794*(September), 355-359.

Juvonen, J., S. Graham, & M. Schuster. (2003). Bullying among young adolescents: The strong, the weak, and the troubled. *Pediatrics, 112*(6), 1231.

KDE. (1999). 집단 따돌림 예방 및 지도대책 연구 [A study on bullying and prevention policy]. In K. D. o. Education (Ed.):한국청소년개발원 [Korean Institute for Youth Development].

KEDI. (1998). *학생의 왕따 (집단 따돌림 및 괴롭힘) 현상에 관한 연구 [A study on bullying among students]* (No. 98-19): Korean Educational Development Institute.

Keith, S., & M. E. Martin. (2005). Cyber-bullying: Creating a culture of respect in a cyber world. *Reclaiming Children and Youth, 13*(4), 224-228.

Kepenekci, Y. K., & S. Cinkir. (2006). Bullying among Turkish high school students. *Child Abuse & Neglect, 30*(2), 193.

Kim, G. (1996). *대인관계 속에서의 도덕성과 내집단-외집단 구별: 문화비교 분석 연구 [Morality and Distinction between Inside-Outside Groups withtin Social Relationship: Cultural Comparison Study]*. 중앙대학교 [JoongAng University], Seoul.

Kim, H. (2001). 청소년의 집단 괴롭힘과 학교생활 특성에 관한 연구: 일반집단, 가해집단, 피해집단 및 가해/피해집단 중심으로 [The bullying and school-related variables]. *청소년학 연구 [Korean Journal of Youth Studies], 8*(2), 119-142.

Kim, H., & H. Lee. (2000). 학생들의 집단괴롭힘 관련경험에 대한 예언변인들의 탐색: 초, 중, 고등학생간의 비교를 중심으로 [A study on predictors of bullying victimization among students: Focus on comparison between elementary, middle, and high schools]. *교육심리연구 [Journal of Educational Psychology], 15*(1), 183-210.

Kim, J. U. (1991). *The Koreans: Their mind and behavior.*Seoul, Korea: Kyobo Centre Co.

Kim, U., & S. Choi. (1994). Individualism, collectivism, and child development: A Korean perspective. In P. M. Greenfield & R. R. Cocking (Eds.), *Cross-Cultural Roots of Minority Child Development* (pp. 227-258). Hillsdale, NJ: Lawrence Erlbaum Associates.

Kim, U., H. C. Triandis, C. Kagitcibasi, S.-C. Choi, & G. Yoon (Eds.). (1994). *Individualism and Collectivism: Theory, method, and applications* (Vol. 18). Thousand Oaks, CA: Sage.

Kim, W. (2004). 왕따: 의미, 실태, 원인에 관한 종합적 고찰 [Wangtta: definition, status, reasons]. *상담학연구 [The Korean Journal of Counseling], 5*(2), 451-472.

Kim, Y., Y. Koh, & B. Leventhal. (2005). School bullying and suicidal risk in Korean middle school students. *Pediatrics, 115*(2), 357-363.

Kim, Y., & H. Park. (1997). *청소년 친구 따돌림의 실태조사. 따돌리는 아이들, 따돌림당하는 아이들 [A study on bullying among youths: Bullies and Bullied].*Seoul: 청소년대화의 광장 [Youth Communication Plaza].

King, M. P. (2001). Cross-sectional and Longitudinal Research Designs Issues In the Studies of Human Development. from http://www.graduateresearch.com/King.htm

Kinlock, T. W., R. J. Battjes, & M. S. Gordon. (2004). Factors associated with criminal severity among adolescents entering substance abuse treatment. *Journal of Drug Issues, 34*(2), 293-319.

Kline, R. B. (1998). *Principles and Practice of Structural Equation Modeling.*New York, NY: The Guilford Press.

KNSO. (2005). *2005 청소년 통계 [2005 Youth Statistics]*:Korean National Statistical Office.

Kupersmidt, J. B., M. E. DeRosier, & C. P. Petterson. (1995). Similarity as the basis for children's friendships: The roles of sociometric status, aggressive and withdrawn behavior, academic achievement and demographic characteristics. *Journal of Social and Personal Relationships, 12*(3), 439-452.

Kwon, J. (1999). 국내외 집단따돌림 연구방법의 개관 [Methodological review of school bullying research]. *The Journal of Educational Research, 15*, 45-56.

Laub, J. H., & J. L. Lauritsen. (1998). The interdependence of school violence with neighborhood and family conditions. In D. S. Elliott, B. A. Hamburg & K. R. Williams (Eds.), *Violence in American Schools: A New Perspective* (pp. 127-158). Cambridge, UK: Cambridge University Press.

Leary, M. R., R. M. Kowalski, L. Smith, & S. Phillips. (2003). Teasing, rejection, and violence: Case studies of the school shootings. *Aggressive Behavior, 29*, 202-214.

Lease, A. M., R. M. McFall, & R. J. Viken. (2003). Distance from peers in the group's perceived organizational structure: Relation to individual characteristics. *The Journal of Early Adolescence, 23*(2), 194-216.

Lee, C. (2000). *왕따의 가해/피해아의 성격 특성과 사회성 측정 지위의 차이 분석 [Analysis of differences in personality traits and sociometric status of bully/victim]*. 한국교원대학교 [Korean National University of Education].

Lee, C., & G. Kaok. (2000). *학교에서의 집단 따돌림: 실태와 특성 [Bullying in schools: Status and Characters]*.Seoul: 집문당 [Jipmoondang].

Lee, D. (2004). *청소년의 문화성향과 또래동조성 및 집단따돌림의 관계* *[Relationship between bullying and youth culture and peer conformity]*. Seokang University, Seoul.

Lee, E. H., & K. W. Lee. (1987). *The Korean mother's socialization process for children (in Korean)*.Seoul, Korea: Ehwa Women's University.

Lee, H. (2003). 집단 따돌림의 실태와 대처 방안 [Current status of bullying and preventive policy]. *교육진흥 [Educational Development], 2*(60), 83-94.

Lee, S. (1999). 중학생 또래따돌림 ('왕따')의 예측요인 [Predicting peer rejection of middle-school students with ordered probit analysis]. *한국사회복지학 [Korean Journal of Social Welfare], 37*(4), 357-379.

Lee, S., C. Byun, & E. Jin. (1969). *표준화 성격 진단 검사 실시 요강 [Standardized Personality Evaluation Test]*.서울 [Seoul]: 중앙적성연구소 [Chung-Ang Aptitude Publishing].

Lee, S., & M. Kim. (2000). 청소년 따돌림과 가정적 요인의 상관관계에 관한 연구 [A study of correlation between the alienating behaviors of the youth and domestic factors]. *Journal of Research, 27*(1), 315-334.

Liepe-Levinson, K., & M. H. Levinson. (2005). A general semantics approach to school-age bullying. *et Cetera, 62*(1), 4-16.

Long, J. D., & A. D. Pellegrini. (2003). Studying change in dominance and bullying with linear mixed model. *School Psychology Review, 32*(3), 401-417.

MacCallum, R. C., & J. T. Austin. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology, 51*, 201-226.

Maday, B. C., & L. B. Szalay. (1976). Psychological correlates of family socialization in the United States and Korea. In T. Williams (Ed.), *Psychological Anthropology*.The Hague: Mouton.

Masataka, N. (1998). *Ijime o yurusu shinri [Psychology of Allowing Bullying]*.Tokyo: Iwanami Shyoten.

Matsueda, R. L., & K. Anderson. (1998). The dynamics of delinquent peers and delinquent behavior. *Criminology, 36*(2), 269.

Matsueda, R. L., & K. Heimer. (1987). Race, family structure, and delinquency: A test of differential association and social control theories. *American Sociological Review, 52*(December), 826-840.

Menesini, E., E. Melan, & B. Pignatti. (2000). Interactional styles of bullies and victims observed in a competitive and a cooperative setting. *The Journal of Genetic Psychology, 161*(3), 261-281.

Moon, S. (2002). 사회병리적 현상으로서의 청소년 집단 따돌림의 문제와 원인 [Problems and causes of youth bullying as sociopathological phenomenon]. *사회복지연구 [The Journal of Social Welfare], 11*, 1-21.

Moriatry, L. (1999). The conceptualization and Operationalization of the intervening dimensions of social disorganization. In M. L. Dantzker (Ed.), *Readings for Research Methods in Criminology and Criminal Justice*.Woburn, MA: Butterworth-Heinemann.

Morita, Y., & K. Kiyonaga. (1994). *Ijime: Kyositsu no yamai [Bullying: The Classroom Crisis]*.Tokyo: Kaneko Shyobou.

Morrison, B. (2001). Bullying, violence and alienation (pp. 1-15): Centre for Restorative Justice, Research School of Social Science, Australian National University.

Morrison, B. (2002). *Bullying and victimization in schools: A restorative justice approach* (No. 219). Canberra ACT: Australian Institute of Criminology.

Mouttapa, M., T. Valente, P. Gallaher, L. A. Rohrbach, & J. B. Unger. (2004). Social network predictors of bullying and victimization. *Adolescence, 39*(154), 315-335.

Naito, T. (1990). Moral education in Japanese public schools. *Moral Education Forum, 15*(2), 27-36.

Naito, T., & U. P. Gielen. (2005). Bullying and Ijime in Japanese Schools. In F. L. Denmark, H. H. Krauss, R. W. Wesner, E. Midlarsky & U. P. Gielen (Eds.), *Violence in Schools: Cross-National and Cross-Cultural Perspectives* (pp. 169-190). New York: Springer.

Nansel, T., M. Overpeck, R. S. Pilla, W. J. Ruan, B. Simons-Morton, & P. Scheidt. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association, 285*(16), 2094-2100.

Natvig, G. K., G. Albrektsen, & U. Qvarnstrom. (2001). School-related stress experience as a risk factor for bullying behavior. *Journal of Youth and Adolescence, 30*(5), 561-575.

Naylor, P., & H. Cowie. (1999). The effectiveness of peer support systems in challenging school bullying: The perspectives and experiences of teachers and pupils. *Journal of Adolescence, 22*, 467-479.

Nesdale, D., & M. Naito. (2005). Individualism - Collectivism and the attitudes to school bullying of Japanese and Australian students. *Journal of Cross - Cultural Psychology, 36*(5), 537.

Olweus, D. (1978). *Aggression in the Schools: Bullies and Whipping Boys.*Washington DC: Hemisphere Press (Wiley).

Olweus, D. (1991). Bully/victim problems among schoolchildren: Basic facts and effects of a school based intervention program. In D. J. Pepler & K. H. Rubin (Eds.), *The Development and Treatment of Childhood Aggression* (pp. 411-448). Hillsdale, NJ: Lawrence Erlbaum Associates.

Olweus, D. (1993). *Bullying at School: What we know and what we can do.*Cambridge, MA: Blackwell.

Olweus, D. (1995). Bullying and peer abuse at school: Facts and interventions. *Current Directions in Psychological Science: A Journal of the American Psychological Society, 4*, 196-200.

Olweus, D. (2003). A profile of bullying. *Educational Leadership, 60*(6), 12-17.

Pakaslahti, L., & L. Keltikangas-Jarvinen. (2001). Peer-attributed prosocial behavior among aggressive/preferred, aggressive/non-preferred, non-aggressive/preferred and non-aggressive/non-preferred adolescents. *Personality and Individual Differences, 30*, 903-916.

Park, E. (2002). 초등학교에서의 집단따돌림(왕따) 연구 [Bullying(Wangtta) study in elementary schools]. *열린교육실행연구 [Open Education Practice Study], 5*, 145-166.

Park, H. S., K. G. Schepp, E. H. Jang, & H. Y. Koo. (2006). Predictors of suicidal ideation among high school students by gender in South Korea. *The Journal of School Health, 76*(5), 181-188.

Park, J. (2003). 청소년 집단따돌림의 원인과 대처방안 [The causes and the settlements of teenagers mobbing]. *인문사회과학연구 [Social Science Research], 10*, 355-369.

Park, K., & H. Son. (1998). *학생의 왕따 (집단 따돌림 및 괴롭힘) 현상에 관한 연구 [A study on Wangtta (Bullying) among students]*. Seoul: Korean Institute of Educational Development.

Pellegrini, A. D., & J. D. Long. (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. *The British Journal of Developmental Psychology, 20*, 259-280.

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology, 24*, 1-24.

Portes, A. (2000). The two meanings of social capital. *Sociological Forum, 15*(1),

1-12.

Poulin, F., A. H. N. Cillessen, J. A. Hubbard, J. D. Coie, K. A. Dodge, & D. Schwartz. (1997). Children's friends and behavioral similarity in two social contexts. *Social Development, 6*(2), 224-236.

Rigby, K. (1996). *Bullying in Schools: and what to do about it.* London, England: Jessica Kingsley Publishers.

Rigby, K. (1998). The relationship between reported health and involvement in bully/victim problems among male and female secondary schoolchildren. *Journal of Health Psychology, 3*(4), 465-476.

Rigby, K. (2004). Addressing bullying in schools: Theoretical perspectives and their implications. *School Psychology International, 25*(3), 287-300.

Rigby, K. (2005). Why do some children bully at school? The contributions of negative attitudes towards victims and the perceived expectations of friends, parents, and teachers. *School Psychology International, 26*(2), 147.

Rigby, K., & I. Cox. (1996). The contribution of bullying at school and low self-esteem to acts of delinquency among Australian teenagers. *Personality and Individual Differences, 21*(4), 609-612.

Rigby, K., & P. T. Slee. (1993). Dimensions of interpersonal relation among Australian children and implications for psychological well-being. *The Journal of Social Psychology, 133*(1), 33-43.

Rivers, I., & P. K. Smith. (1994). Types of bullying behavior and their correlates. *Aggressive Behavior, 20*, 359-368.

Rodkin, P. C., & T. W. Farmer. (2000). Heterogeneity of popular boys: Antisocial and prosocial configurations. *Developmental Psychology, 36*(1), 14-24.

Rodkin, P. C., & E. V. E. Hodges. (2003). Bullies and victims in the peer ecology:

Four questions for psychologists and school professionals. *School Psychology Review, 32*(3), 384-400.

Rosenbaum, P. R. (1986). Dropping out of high school in the United States: An observational study. *Journal of Educational Statistics, 11*(3), 207-224.

Rubin, D. B. (1976). Inference and missing data. *Biometrika, 63*, 467-474.

Rubin, D. B. (1987). *Multiple Imputation for Nonresponse in Surveys.* New York: John Wiley & Sons, Inc.

Salmivalli, C., A. Huttunen, & K. M. Lagerspetz. (1997). Peer networks and bullying in schools. *Scandinavian Journal of Psychology, 38*, 305-312.

Salmivalli, C., K. M. Lagerspetz, K. Bjorkqvist, K. Osterman, & A. Kaukiainen. (1996). Bullying as a group process: Participant roles and their relations to social status within the class. *Aggressive Behavior, 22*, 1-15.

Salmivalli, C., M. Lappalainen, & K. M. J. Lagerspetz. (1998). Stability and change of behavior in connection with bullying in schools: A two-year follow-up. *Aggressive Behavior, 24*, 205-218.

Sampson, R. J., & W. B. Groves. (1989). Community structure and crime: Testing social-disorganization theory. *American Journal of Sociology, 94*(4), 774-802.

Sampson, R. J., S. W. Raudenbush, & F. Earls. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*, 918-924.

SAS. (2002). *SAS/STAT Software Enhancements: Multiple Imputation for Missing Data.* Cary, NC: SAS Institute.

Schafer, J. L. (1997). *Analysis of Incomplete Multivariate Data.* New York: Chapman and Hall.

Scott, J. (2000). *Social Network Analysis: A Handbook* (2nd ed.). Thousand Oaks, CA: Sage.

Seals, D., & J. Young. (2003). Bullying and victimization: Prevalence and relationship to gender, grade level, ethnicity, self-esteem, and depression. *Adolescence, 38*(152), 735-747.

Seo, J.-B., & J.-I. Han. (2004). 집단 따돌림 현상에 대한 이론적 고찰 [A semantic analysis of bullying]. *교육종합연구 [The Journal of Educational Research], 2*, 117-134.

Sexton-Radek, K. (Ed.). (2005). *Violence in Schools: Issues, Consequences, and Expressions.*Westport, Connecticut: Praeger.

Shaw, C. R., & H. D. McKay. (1969). *Juvenile delinquency and urban areas; a study of rates of delinquency in relation to differential characteristics of local communities in American cities* (Rev. ed.). Chicago: University of Chicago Press.

Shields, A., & D. Cicchetti. (2001). Parental maltreatment and emotion dysregulation as risk factors for bullying and victimization in middle childhood. *Journal of Clinical Child Psychology, 30*(3), 349.

Shim, J. (2004). *왕따에 대한 개념 정립과 학교급별, 국가별 비교 [A study of pupils' perception on Korean bullying (Wangtta)]*. Kyunghee University, Seoul.

Shin, Y. (2000). *중학생의 집단따돌림(왕따)에 관한 비교연구: 사회환경을 중심으로 [A comparison study in bullying of the middle school students: Focus on social environment]*. 중앙대학교 [Joongang University].

Short, J. F., & F. I. Nye. (1957). Reported behavior as a criterion of deviant behavior. *Social Problems, 5*(3), 207-213.

Simpson, R., & C. Cohen. (2004). Dangerous work: The gendered nature of bullying in the context of higher education. *Gender, Work and*

Organization, 11(2), 163.

Singelis, T. M., H. C. Triandis, D. D. Bhawuk, & M. Gelfand. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research, 29*, 240-275.

Singleton, R. A. J., & B. C. Straits. (1999). *Approaches to Social Research* (3rd ed.). New York: Oxford University Press.

Slee, P. T. (1994). Situational and interpersonal correlates of anxiety associated with peer victimization. *Child Psychiatry and Human Development, 25*(2), 97-107.

Smith, P. K., & P. Brain. (2000). Bullying in schools: Lessons from two decades of research. *Aggressive Behavior, 26*, 1-9.

Smith, P. K., H. Cowie, R. F. Olafsson, & A. P. D. Liefooghe. (2002). Definitions of bullying: A comparison of terms used, and age and gender differences, in a fourteen-country international comparison. *Child Development, 73*(4), 1119-1133.

Sobel, M. (1995). Causal inferences in the social and behavioral sciences. In G. Arminger, C. Clogg & M. Sobel (Eds.), *Handbook of Statistical Modeling for the Social and Behavioral Sciences*.New York: Plenum Press.

Sobel, M. (1996). An introduction to causal inference. *Sociological Methods & Research, 24*, 353-379.

Spivak, H., & D. Prothrow-Stith. (2001). The need to address bullying - An important component of violence prevention. *Journal of the American Medical Association, 285*(16), 2131-2132.

Stevens, V., I. D. Bourdeaudhuij, & P. V. Oost. (2002). Relationship of the family environment to children's involvement in bully/victim problems at school. *Journal of Youth and Adolescence, 31*(6), 419-428.

Sullivan, K., M. Cleary, & G. Sullivan. (2004). *Bullying in Secondary Schools: What It Looks Like and How to Manage It*.Thousand Oaks, CA: Sage.

Sutherland, E. H., & D. R. Cressey. (1970). *Criminology* (8th ed.). Philadelphia: Lippincott.

Swearer, S. M., & B. Doll. (2001). Bullying in schools; An ecological framework. *Journal of Emotional Abuse, 2*, 7-23.

Tagiuri, R. (1968). The Concept of Organizational Climate. In R. Tagiuri & G. H. Litwin (Eds.), *Organizational Climate: Exploration of A Concept*.Boston: Harvard University.

Tai, M. (2001). Ijime taiou to sonokouka [Treatments for Bullying and Their Effects]. In Y. Morita (Ed.), *Ijime no kokosai hikaku kenkyu [Cross-national Study of Bullying]* (pp. 123-144). Tokyo: Kaneko Shyobou.

Thornberry, T. P., & M. D. Krohn. (2000). The Self-Report Method for Measuring Delinquency and Crime. In D. Duffee (Ed.), *Measurement and Analysis of Crime and Justice* (pp. 33-83). Rockville: National Institute of Justice/NCJRS.

Toit, S. d., & G. Mels. (2005). *Supplementary Notes on Multiple Imputation*.Lincolnwood, IL: Scientific Software International, Inc.

Triandis, H. C. (1995). *Individualism and Collectivism*.Boulder, CO: Westview.

Twemlow, S. W., P. Fonagy, & F. C. Sacco. (2001). An innovative psychodynamically influenced approach to reduce school violence. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(3), 377-379.

Unnever, J. D., & D. G. Cornell. (2003). Bullying, self-control, and ADHD. *Journal of Interpersonal Violence, 18*(2), 129-148.

Verlinden, S., M. Hersen, & J. Thomas. (2000). Risk factors in school shootings.

Clinical Psychology Review, 20(1), 3-56.

Vold, G. B., T. J. Bernard, & J. B. Snipes. (1998). *Theoretical Criminology* (4th ed.). New York: Oxford University Press.

Wareham, J., & R. Dembo. (2007). A longitudinal study of psychological functioning among juvenile offenders: A latent growth model analysis. *Criminal Justice and Behavior, 34*(2), 259.

West, S. G., J. F. Finch, & P. J. Curran. (1995). Structural equation models with non-normal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural Equation Modeling* (pp. 56-75). Thousand Oaks, CA: Sage.

Wolfgang, M. E., & F. Ferracuti. (1981). *The Subculture of Violence*.Beverly Hills, CA: Sage.

Wolke, D., S. Woods, K. Stanford, & H. Schulz. (2001). Bullying and victimization of primary school children in England and Germany: Prevalence and school factors. *British Journal of Psychology, 92*, 673-696.

Wong, D. S. W. (2004). School bullying and tackling strategies in Hong Kong. *International Journal of Offender Therapy and Comparative Criminology, 48*(5), 537.

Xie, H., R. B. Cairns, & B. D. Cairns. (1999). Social networks and configurations in inner-city schools: Aggression, popularity, and implications for students with EBD. *Journal of Emotional and Behavioral Disorders, 7*(3), 147-155.

Yang, J. (2005). 중학생의 왕따 발생 요인에 대한 연구 [A study on causal factors of bullying among middle school students]. *한국교육 [The Journal of Korean Education], 32*(2), 31-52.

Yang, S., J. Kim, S. Kim, I. Shin, & J. Yoon. (2006). Bullying and victimization behaviors in boys and girls at South Korean primary schools. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*(1), 69.

Young, R., & H. Sweeting. (2004). Adolescent bullying, relationships, psychological well-being, and gender-atypical behavior: A gender diagnosticity approach. _Sex Roles, 50_(7/8), 525.