Neighborhood Context of Deviant Behavior

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INTRODUCTION

There is a growing interest in considering the influence of a broader social context in literature. For example, examining neighborhood effect has received considerable attention. Neighborhood effects are community characteristics that influence the behavior or socioeconomic outcome of an individual. The rationale of these studies is that we cannot study individuals without considering the contexts in which they reside. This line of research uses multilevel techniques to jointly consider the effect of individual and contextual characteristics on individual outcomes.

Of the various neighborhood effects, one particular attention is given to the impact of neighborhood socioeconomic disadvantage, often measured by low levels of employment, income, education, and occupational status on an individual's behavior. For example, Brooks-Gunn et al. (1993) examined the effects of various neighborhood socioeconomic characteristics on the development of children and adolescents. Generally, neighborhood disadvantage increases the likelihood of deviant behavior after controlling the influence of an individual's social and economic characteristics.

In the present study, we will investigate the way community disadvantages influences an adolescent's deviant behavior. The possible mediating and moderating effects are also studied. The data include 3555 respondents from the Taiwan Youth

Project in 2000.   Census data describing the socioeconomic status of the district of county and town are obtained from the 1993 community characteristic data.

LITERATURE REVIEW

Traditionally, there are two distinct lines of research in criminology.   One is the study testing of macro-level theory, which focuses on the organization of a society and its influence on individuals.   The basic argument is that a disorganized or disadvantaged society will either attenuates social control or create strain that will eventually lead to deviant behavior.   Researchers attempt to explain crime rate by using the characteristics of larger contexts such as communities.   The idea is that human behavior is shaped and constrained by the social and physical contexts.   Thus, an individual's deviant behavior is to some extent determined by their contexts.

For example, the Chicago School scholars considered the community to be a major influence on human behavior.   If relationships in the family and friends are good, neighborhoods are stable and cohesive then the social organization is sound. Without these solid factors, a neighborhood can be disorganizing socially and its social control function is impaired.   Thus, social disorganization weakens the ability to control crime, which directly causes crime and indirectly causes crime by allowing for the formation of deviant peer groups (Shaw and McKay, 1942).   Whereas subculture deviance theorists argue that community values and norms lead some individuals to define crime as a desirable or justifiable response in certain situations (Sutherland, Cressey, and Luckinbill, 1992).

In contrast, micro-level theories, such as social control theory and differential association theory, try to explain how people become deviant using an individual's characteristics and/or their relationships with other people and institutions. It is very

easy to pick up research on the effects of parenting practice and deviant peers in the literature. Inept parenting practices, such as poor monitoring and ineffective discipline tend to positively relate to deviant behavior. Parents who are caring and affectionate are thought to foster the social competence and self-control of their children (Simons et al., 2000; Sutherland, Cressey, & Luckinbill, 1992; Steinberg, Lamborn, & Dornbusch, 1991; Baumrind, 1996; Hirschi, 1969; Maccoby, & Martin, 1983). Affiliation with deviant peers is an important avenue to learning criminal skills and strengthening the definitions favorable to deviant behavior (Sutherland, Cressey, & Luckinbill, 1992; Steinberg, Fletcher, & Darling1994).

However, the research on macro-micro linkages and how they affect deviant behavior has gained much attention in recent literature. Research examining both neighborhood effects and individual-level effects on deviant behavior has proliferated rapidly. Increasing studies indicate that aspects of social or community disorganization or disadvantage, either affect an individual's behavior indirectly through micro relations or condition the impact of individual-level factors on deviant behavior. A key proposition is that socially disorganized communities are less able to control the behavior of residents, thus affecting deviant behavior via attenuated social control processes.

Another reason for the growing attention in the contextual analysis is the advances in statistical techniques. The most important one is the hierarchical linear modeling (HLM, Raudenbush, Bryk, Cheong, & Congdon 2000). It allows the researchers to incorporate both neighborhood level and individual level variables. Researchers use it to assess both the direct impact of neighborhood characteristics and the interactions between neighborhood and individual-level factors. While ordinary regression analysis assumes independence among observation, HLM considers the

dependence of individuals within the same communities.   As we know, people live

in the same community will tend to be alike to the extent that they are influenced by

the same environment.   Ignoring this dependency among individuals will bias the

estimates.   Several studies have examined whether community-level characteristics

influence the relationship between demographic, family, and peer variables with

various outcomes, such as deviant behavior.   For instance, Elliott et al. (1996) found

that community disorganization influences deviant behavior indirectly via its effect in

attenuating informal social control.   Direct effects of community disorganization are

found in several studies after controlling the effects of individual-level mechanism

(Sampson, & Groves 1989).

Community Disadvantage

     In this paper, I will examine the effects of community disadvantage on students'

deviance.   Previous research has shown that individuals of low SES tend to have

lower sense of control, efficacy, and even biological health (Williams & Collins, 1995;

Simons et al., 2002).   We expect the process to be similar for community level. The

alienation, dependency wrought by resource deprivation act as a force that undermine

collective efficacy, which is "the ability of neighborhoods to realize the common

values of residents and maintain effective social controls" (Sampson, Raudenbush, &

Earls, 1997, pp.918).   Neighborhood disadvantage not only result in an attenuation

of collective efficacy but also increase the likelihood of the emergence of illegitimate

opportunity structures and various deviance (Elliott et al., 1996).

     Several elements of social disadvantage are tested in the past studies, for

example, the poverty rate, percentage of female-headed families, the percentage of

families receiving public assistance, per capital income or percentage of low-income

families, percentage of persons without a college education, percentage of workers not in managerial or professional occupations, and male unemployment rate. These factors influence a youth's ties to conventional institutions of social control, the level of community supervision, and the ability to articulate and achieve communal goals. In the present study, I use one composite measure of community disadvantage including divorce rate, percentage of under high school education, percentage of male unemployment, percentage of receiving public welfare service, and percentage of dependent population.

Crime Rate and Deviant Behavior

Another community-level predictor is crime rate. According to Sutherland's (1947) theory of differential social organization, the extent to which one's group is organize for or against deviant behavior will determine its crime rate. The differential organization includes neighborhood organization, family processes, peer relationships, and the distribution of age, race, and class. For the individual level, one learns the definitions favorable and unfavorable to deviant behavior through the interaction and communication in intimate groups. Whether one commits a deviant act depends on the ratio of learned definitions favorable and unfavorable to that act. Adolescents in a community of high crime rate will presumably have more chance to contact deviant persons. The presence of deviant groups provides support network that encourage or at lest tolerate deviant lifestyles. Thus, adolescents living in a community of higher crime rate might have greater chance of involvement in deviance.

I also include several individual-level predictors in my analysis, including family structure, mother's parenting practices, peer deviance, school problem, and

control variables for cohort, gender, family income, and parental education.

Family Structure and Deviant Behavior

Mclanahan and Sandefur (1994) notice that family types are not distributed randomly. Two-parent families are usual better in terms of finance than single-parent families; thus they have more flexibility about where to live. Single parents tend to have fewer resources and are less able to move to better communities. Thus, their ability to raise children may be hampered (Amato & Booth, 1997).

There are at least two ways that family disruption is to have important implications for deviant behavior. First, broken home causes delinquency at the individual level. Family dissolution is not a single event; it is indicative of a chain of events that will need many adjustment efforts, which is stressful for both the custodial parent and the child.

Previous research has shown that the process of family dissolutions might accompany parental conflict, which undermines a parent's effective parenting practices. For children in single-parent households, they might first witness the parental conflict before or even after the dissolutions. After the dissolution, they might have to settle down in a neighborhood that is not as pleasant. The most important consequence is the absence of one influential role model in his/her life. The marital disruption might also undermine the custodial parent's ability to proper parenting. They might have to work long hours to sustain the family and have less time and energy for the child. Some parents might feel the needs to compensate a child's loss of one parent and become less strict in parenting. All of these lead to less effective parenting on the part of the custodial parents. According to the previous literature, inept parenting is one major cause of deviant behavior. If they

live in a disorganized neighborhood, they will have a greater chance to have deviant friends and thus commit deviant behavior.   Deviant behavior is likely if there is not enough parental monitoring or discipline available to offset the influence of deviant peers.

For example, absence of one parent figure in the broken homes makes it harder for parents to fulfill the parental role.   It impedes parental monitor of their children and might lower the parent-child attachment.   The transmission of pro-social definitions will be less possible under such situation.   In turn, it might indirectly increase a child's affiliation with deviant peers.   And eventually, lead to greater acceptance of deviant definitions.   Further, broken home might inhibit the formation of attachment to parents and the transmission of definitions of deviant behavior as unfavorable from parents to child.   Thus, the assumed anti-delinquent definitions from home will not strong enough to offset the effect of pro-delinquent definitions from peers (Sutherland, Cressey, & Luckinbill 1992).

Secondly, marital and family disruption may decrease social controls at the community level (Sampson, 1986).   For example, Two-parent families are probably effective not only because they are able to intervene in actual criminal acts, but they are also better at controlling those peer group activities that set the context for more serious deviant behavior, especially gang delinquency.   Indeed, a central finding in criminological research is that most delinquents have delinquent friends and commit delinquent acts in groups.   Consequently, the awareness and supervision of peer-group and gang activity not simply depend on one-child family, but on a network of control.   The single-parent households give the community only one parent and hence reduce the potential linkages which can be invoked for informal social control. Furthermore, single parent participate less often in social organizations because of

their limited time and energy. Communities with disproportionate numbers of family disruption may indicate much instability and conflict in personal relationship. The result is a weakening of social control. Thus, community family disruption is expected to be related to deviant behavior significantly.

Adolescents in step families first went through the difficult phase of family dissolution. The experience of merging into a new family could be another difficult task for them. Although it may be better than single-parent households financially, a step parent is less likely to be supportive for the child and more likely to be abusive. Thus, this attenuated stepparent-child interaction might have some negative influence on the child (Kierkus & Baer 2003).

In this paper, I also examine the effects of cross-generation parenting (grand parenting, instead of living with parents, adolescents live with grandparents). Grandparent faces challenges like financial difficulty and physical and mental health issues. The existing findings show that the children exhibit a variety of physical, behavioral, and emotional problems to a greater degree than the general population of children, often due to the difficult situations that caused them to be placed in a grandparent's care (Altshuler, 1998; Pruchno, 1999).

Another type of family is included, "other". Other than staying with parents, step parents, and grandparents, the children might stay with other relatives, such as aunts and uncles.

Parenting Practices and Deviant Behavior

Parents affect their child's deviancy through their interaction with the child, especially monitoring of the child's activities. Deviant behavior of parents, inept parenting practices, including lack of monitoring and inappropriate discipline, and

lack of closeness between parent and child are important aspects that are conclusive to deviant behaviors (Simons et al., 2000; Steinberg, Lamborn, & Dornbusch, 1991; Baumrind, 1996; Maccoby, & Martin, 1983).

Deviant Peers and Deviant Behavior

Studies have shown strong links between affiliation with deviant friends and adolescents' delinquent behaviors. One learns the definitions favorable and unfavorable to deviant behavior through the interaction and communication in intimate groups (Elliott & Menard 1996).

Control Variables

Several additional variables are included in the model as control variables. In the present study, I include data from two different age groups. A dummy variable is defined to distinguish the cohort effect. Since previous literature has demonstrated gender differences in general delinquency involvement, I use another dummy variable for the gender effect. Furthermore, previous research found that the effects of broken home might be confounded by the influences of socioeconomic status. The creation of several dummy variables helps define the effects of family structure. I also included family income and parental education levels as control variables to control the effects of family socioeconomic status.

There are several hypotheses regarding the neighborhood effects. First, a mediating hypothesis suggests that community characteristics affect family structure, which in turn leads to adolescent deviance.

Usually, we assume the direction of influence for neighborhood effects are from neighborhood to individuals. However, the direction might reverse or cannot be

determined under some situations. For example, it might be that a disadvantaged community is more likely to generate divorce and single parenthood, and it is living in a single-parent family that affects deviance. However, it could be that single-parent families are constrained in their choice of communities and have to live in poor areas. Hence a selection process determines the distribution of family structures and then eventually influences adolescent deviance. This sorting process might cause the concentration of poverty or disadvantage within neighborhood. Thus, it is necessary to control for this individual-level effect when estimating neighborhood effects.

The "contagion" effect by Jencks and Mayer (1990) primarily investigate the role of peer influences on problem behavior. For instance, the consumption of drugs by a teen in a neighborhood might lead to increased consumption by all other teens in that neighborhood.

Secondly, some suggests that the effect of individual-level factors on adolescent behavior might be larger in less advantaged communities. For example, single-parents often find it difficult to have sufficient parent-child interaction (Thomson, Hansom, & McLanahan, 1994), but adults in the communities may offer social support and supervision for the children. Yet in a disadvantaged community, this ability is often hampered (Furstenberg, 1993). That is, community characteristics moderate the impact of individual-level factors.

Finally, the effects of community characteristics and individual-level characteristics on adolescent behavior might have independent effects. For example, control for the influence of parenting practices, the community contexts then have little impact on the relation between parenting practices and adolescent deviance. Communities may independently affect adolescent deviance by providing shared supervision (Elliott et al., 1996; Sampson, Raudenbush, & Earls, 1997).

Method

Sample

The population of the research is on year one and three junior high school students. The student assortment is from Taipei city, Taipei prefecture and Ilan prefecture because of the high enrollment rate at this stage of education. In order to examine the effects of the recent revolution of the education policy, first year (new school entrance policy) and third year (old school entrance policy) junior high school students is segregated into two cohorts for further comparison.

For the sample size to reach its maximum statistical power, 4000 students selected from Taipei city and Taipei prefecture, with 1000 students each from year one and three junior high school. An additional 1600 students selected from Ilan prefecture, with 800 students each from year one and three junior high school too. The total sample size at the beginning of the study is planned to include 5600 students.

Randomly stratified cluster sampling is used in this research. The first and second stratums are stratified according to the level of urbanization in each area due to the focus of the research. The population is then divided into clusters, which include 'school' as the sampling unit at the first phase, and 'class' at the second phase. The proportion of students in each area is calculated first to ensure the sample size. The average amount of students in each area is then calculated for a stratified cluster sampling. After knowing the classes desired in each stratum, the number of schools is selected according to the 'one school two classes' rule. All of the selected 'school' and 'class' sampling units are randomly selected at the end. Moreover, consider the heterogeneity within the sample, two other schools and class are selected to extend sample quality.

A total of 40 schools, 81 classes and 5586 students are selected according to the method and steps mentioned above.   2696 first year junior high school students are selected from 81 classes, and 2890 third year students are selected from 81 classes as well.   In the sample, 16 schools, 33 classes for each grade, 1039 first year students and 1065 third year students are from Taipei city.   Fifteen schools, 30 classes for each grade, 1063 first year students and 1177 third year students are from Taipei prefecture.   Nine schools, 18 classes for each grade, 594 first year students and 648 third year students are from Ilan prefecture.

Measures

Quality of Parenting.   Past research has established that effective parents supervise their children's behavior, are consistent in discipline, using inductive reasoning, communication, and avoid corporal punishment or harsh discipline (Maccoby & Martin, 1983; Amato, 1990).   These sub-dimensions of parenting are included in the present study. Adolescents reported on mothers' parenting practices using a ten-item scale.   The response format ranged from 1 (always) to 5 (never). The items include (1) monitoring (i.e., "In the course of a day, how often does your mom know where you are?", "How often does your mom know who you are with when you are away from home?"), (2) inductive reasoning (e.g., "How often does your mom give you reasons for her decisions?"), (3) inconsistent discipline (i.e., "When your mom tells you to stop doing something and you don't stop, how often does she punish you?"), and (4) corporal punishment (e.g., "When you do something wrong, how often does your mom spank or slap you?").

A measure of a mother's parenting practices is form with higher scores indicating better parenting.   Items for positive parenting practices are reverse coded before

adding. The coefficient of Cronbach's alpha for this scale is 0.65. The mean value for adolescents' report of mother's parenting practices is 38.87.

Adolescent's Deviance and Peer's Deviance. Generally, adolescence is the most knowledgeable source of information concerning his own antisocial behavior. Parents often possess limited information about their child's level of involvement in delinquent activities outside of the family.

Similarly, the best source of a peer's deviance is a peer self-report. Most studies obtain peer influence using a youth's report on perceptions of peer behaviors. However, several researchers warn against the use of measures to the same reporters because of the shared method variance problem. To reduce the potential bias in estimating peer effects, I use a peer's self-report regarding their own deviant behavior instead of a youth's perceptions of peer behaviors. Each student has to identify maximum five best friends. Most students have identified best friends within the same class. Thus, we can match up his/her best friend's reports regarding to their own deviance.

Respondents have to indicate how frequent they are engaged in each of 10 delinquent activities. The response format ranges from 1 (never) to 5 (always). The items included: (1) minor offenses, such as skipping school and running away from home; (2) property offenses, such as stealing money and vandalizing property; (3) serious violent offenses, such as physical assault or weapon use, and (4) substance and alcohol use.

The accumulation of the 10 delinquent acts is measure to the extent of an adolescent's involvement in delinquency with higher values indicating greater deviance. The alpha coefficient is 0.79. Peers' mean deviance can be obtained by computing the mean value deviance. The mean value for deviance is 10.82 and

10.88 for adolescents and peers, respectively. The measure of an adolescent's deviance is to take logarithm to lessen the problem of non-normality.

School Problem. The study asks students to indicate whether the seven items listed are serious in his/her schools. The items include: (1) Problem of substance abuse (e.g., alcohol abuse, smoking, illegal drug), (2) Aggressive, bossy students, (3) lack of interest amongst teachers and students (i.e., "Teachers who do not care about students" and "students who do not care about curriculum and learning either" The response format ranged from 1 (no problem at all) to 5 (a very serious problem).

The seven school problem items are added up to measure the degree of seriousness, with higher scores indicating the degree of seriousness of the problem (M=16.96, SD=6.13). The alpha coefficient is 0.86.

Community Disadvantage. Five items are used to measure the extent of community disadvantage: divorce rate, the percentage of community welfare (the proportion of elder and handicap), community population reliance rate (the addition of population age 0-14 and age 65 or above divided by population age 15-64), male unemployment rate of age 15 and above, the percentage of population with age 15 and above that is junior high school graduate or under. The source of information is obtained from 1993 community characteristic data. Since the census 2000 data did not have enough information to compute the level of community disadvantage, we had to turn to the 1993 data. With such big gap in time, the congruence of the data with the relevant neighborhood environment of the adolescents in our sample might be questioned. The five items are added up together with greater values indicating greater disadvantage.

Crime Rate. 2000 crime rate data used is based on district of county and town as its unit. Crime rate is based on crimes reported in every 10,000 population.

Family Structure.   Several dummy variables are formed for family structure. The reference family type is intact family with adolescents living with both biological parents.   Four dummy variables are constructed for cross-generation parenting, single-parent families, stepparent families, and all other types of family.

Control Variables.   Several control variables are also included in the analyses: an indicator variable, cohort, is defined for the two sample, (1 and 2 for students of third and first graders in junior high school, respectively), a dummy variable for genders (1 for boys, 0 for girls), parents' education is drawn from parent's report, and family income is coded from 1 (less than NT$30,000) to 13 (more than NT$150,000).

Analytic Strategy

In this study, I examine how community disorganization influences the deviant behavior of adolescents using HLM techniques.   HLM 5 is used to analyze the data (Raudenbush, Bryk, Cheong, & Congdon, 2000). Individuals share the same contexts tend to be similar to each other, thus they are not independent observe variables according to statistical criteria.   HLM incorporates this dependency into the model. It allows variations in outcome variables amongst and across neighborhoods and in the effects of individual-level covariates.   It also allows us to decompose the variations in the outcome variable into 'between' and 'within' contexts variances. The 'within' contexts variation is the variance attributed to the individuals.   The 'between' contexts variation is the variance attributed to contexts.   The steps for estimation of neighborhood are setup below.

The first one is the random intercept model, without considering any explanation variables, is used to examine whether there is significant variation of an adolescent's deviant behavior at both the across individuals level and across communities level.

If there is significant variation in intercepts across neighborhoods, then it shows dependency for cases in the same neighborhood.   A statistic that assesses the relative importance of contexts is the intra-class correlation.   The larger the coefficient is, the larger the importance of contexts.

Secondly, gender, family income, parent's education are included as a set of individual-level control variables that have been identified in prior literature.   A construction of a dummy variable will be used indicate a student's grade and cohort. Thirdly, we consider the effects of several individual-level explanatory variables: family structure, parenting practices, school problem, and deviant behavior of peers into model II.

Fourthly, the neighborhood effects are secure by adding the composite variables for neighborhood disadvantage to model II.   Finally, incorporate all variables of both individual and neighborhood level.

If the effect of neighborhood disadvantage reduces significantly or become zero after including the individual-level variables, then its effect on deviant behavior might be mediated.   Similarly, if the effects of the variables for the four individual-level concepts reduce substantially or become insignificant, its effects might be mediated. If the effects change slightly or do not change and the variables for individual and community levels both remain significant, then both individual-level and community-level characteristics have independent effect on adolescent deviance. Finally, cross-level interactions are added to examine the possible moderating effect. For example, it is to examine whether the relation between friend's deviance and adolescent's deviance differs under different levels of community disadvantage.

RESULTS

Descriptive Statistics

The effective sample size drops to 3555 because of missing data (31.8% 39.8%, and 20.4% from Taipei city, Taipei prefecture and Ilan prefecture, respectively). The major cause of the missing ness is the inability to locate the village neighborhood for individuals (lose 704 cases). I ran a missing data analysis and found that it is missing randomly, thus it poses no threat to the results.

Table1. Descriptive statistics for variables in the analysis

Variables	Mean	SD
Individual level		
Cohort (1=J3; 2=J1)	1.46	0.50
Gender (1=boys)	0.49	0.50
Family income	4.17	3.05
Parents' education	4.06	1.52
Family structure (0=intact)		
Cross-generation parenting	0.01	0.08
Single-parent families	0.05	0.21
Step families	0.01	0.12
Other families	0.02	0.13
School problem	16.96	6.13
Mother's parenting practices	38.87	5.32
Friend's deviance	10.88	1.34
Deviance	10.82	1.83
Community level		
Crime rate	203.10	216.51
Community disadvantage	-0.30	0.97

However, we do find problems for parent's education, friend's deviance, and income.   These are the three variables that have missing rate over 5%.   We lose 530, 340, and 299 cases for parent's education, friend's deviance, and income respectively. The t test results show that the have missing data for parent's education tend to be

higher in deviance (t=5.7), peer deviance (t=3.4), lower in family income (t=-7.5) and less positive in mother's parenting practices (t=-8.6).   For those with missing income data, they tend to be less positive in mother's parenting practices (-2.5).   Finally, for those have missing data in friend's deviance, they have higher value in deviance (t=3.1).   The Little's MCAR (missing completely at random) test reveals that the data's missingness is not MCAR (χ^2=418.480, df=113, p-value=0.000).   It seems the cases that we lost tend to be ones with less positive in various facets.   Thus, the results should be interpreted with care.

For the effective sample, there are 1935 (54.4%) and 1620 (45.6%) students for third graders and first graders in junior high school respectively. There are roughly the same number of male and female students (50.6% are males and 49.4% are females). Most parents have high school degree (36.1%), 16.1% have degree from college or higher education. Parents' education is significantly lower for Ilan prefecture students, followed by Taipei prefecture. Parents of Taipei city have the highest education. More than half of the students are from families having monthly income less than NT60, 000 (58%). Families with monthly income over NT100, 000 are about 14.8%. A similar pattern is found when compare the three locations (lowest for Ilan prefecture, then Taipei prefecture, and highest for Taipei city).

For deviant behavior, the majority of the students are not involved in delinquent acts (67%); another 30% of the students' involvement is occasional. The remainder 4% students are more seriously involved. There is no significant difference between Taipei city and Taipei prefecture and between Taipei prefecture and Ilan prefecture. However, students of Ilan prefecture have significantly higher level of deviance than Taipei city.

For friends' mean deviance, one-third of friends do not have any involvement. Most of the peers have no or few involvement (98%). The mean peer deviance is significantly higher in Ilan prefecture than students in the other two locations.

Most of the students are from intact family (living with both biological parents) (91.4%). The percentages for other family types are 0.6%, 4.8%, 1.4%, and 1.7% for cross-generation, single-parent, step, and other family respectively. There is no significant difference among Taipei city, Taipei prefecture, and Ilan prefecture with respect to family structure.

The range for school problems is from 7 (no problem at all) to 35 (very serious for all the problems listed). The mean value is 16.9 (the median is 16). Most of the schools have minor problem (79.7%). However, around 15% of the students reported serious school problem. No difference is found between the three locations.

Most adolescents reported that their mothers engaged in those parenting behavior at least half of the time (mean=38.87, 93%). On average, mother's parenting is less positive in Ilan prefecture than the other two locations.

The crime rate for the district of county and town ranges from 12.55 to 1099.88 for every 10000 persons in the population. The mean crime rate is 167 per 10000 persons. The average rate is significant higher for Ilan prefecture. The divorce rate ranges from 1.43 to 4.76, with mean value of 3. Only 4.6% of the students live in the district of county and town that have divorce rate over 4. The mean divorce rate is highest in Taipei city (3.6%), followed by Taipei prefecture (3.0%). The average rate is lowest in Ilan prefecture (less than 1.9%). Community population reliance rate ranges from 39.47 to 52.9, roughly two-sevens to one-third of the total population are children less than 15 and the older aged over 65. This ratio relatively low for Taipei city (mean value of 44.13). The percentage of community welfare has mean of 2.8%,

ranges from 0.94% to 5.14%. The percentage is relatively higher for Ilan prefecture (1.95%, 3.11%, and 3.90 for Taipei city, Taipei prefecture, and Ilan prefecture, respectively). For education less than high school, the percentage is from 22.57% to 75.77%. About one-third of the students live in a district of county and town has percentage over 50%. Again, the percentage is relatively higher for Ilan prefecture (mean value of 62.07%) and lowest for Taipei city (33.77%). Finally, for male unemployment, the average is 18%, ranging from 10.72% to 23.69%. The percentage is again, slightly higher for Ilan prefecture (18.68%). Ilan prefecture is less advantageous with respect to several community measures.

Table 2 lists the correlation matrices for both samples by gender. In this table, we report the correlations among variables used in the analysis. To save space, insignificant correlations among the four dummy variables for family structure are not listed in the table. The variables are presented in the following order, starting with cohort, gender, parent's education (PEDU), family income (INC), logarithm of deviance (LDEV), friends' deviance (FDEV), school problem (SCHOOL), mother's parenting (MPAR), community disadvantage (COMDIS), crime rate (RATE), and then the four indicator for family structure (i.e., cross-generation parenting (CROSS, SINGLE, STEP, and OTHER).

Adolescents' deviance is significantly related to mother's parenting practices (r=-.216, p-value=.000), peers' deviance (r=.224, p-value=.000), and school problem (r=.108, p-value=.000). The results showed positive for FDEV and SCHOOL, negative for MPAR. Thus, the higher the peer deviance, belonging to a school of greater school problem and less positive in mother's parenting practices are related to more involvement in deviance.

Adolescents in cross-generation parenting and stepfamilies tend to have more deviant behavior than those in intact families (r=.048, p-value=.004 and r=.036, p-value=.033). There is no significant difference in deviance between single-parent families and stepfamilies and intact families. The correlation between deviance and family structure is low.

Third graders in junior high school students score significantly greater in deviance than first graders (r=-.164, p-value=.000). Males are significantly more deviant than girls (r=.170, p-value=.000). Parents of higher education tend to have children with fewer deviant problems (r=-.087, p-value=.000). Family income does not relate to deviance (r=-.004, p-value=.819).

Multivariate Results

Estimating Within- and Between-Context Variation. The HLM results are presented in Table 3. In Model I, we did not include any predictors but allow deviance to vary between contexts. The estimate for the variance of the slope is significantly different from zero. However, the resulting intraclass coefficient is small (only 0.01). Students of the same district of county and town tend to be only slightly similar to each other in terms of deviance than are individuals from different district of county and town. The assumption of independent observations is not serious. The contexts defined by district of county and town might be too large. However, the effects of not considering the non-independence among observations would lead to bias in the estimation of the predictors, as Teachman and Crowder (2002) have demonstrated (intraclass coefficient of 0.05). I still continue multilevel analysis to avoid error conclusions.

Adding individual-level covariates. Model II only considers control variables and allows its effect to vary. The results are similar to the correlation analysis. On average, males and third graders in junior high school have more deviant behavior. Higher parental education is related to fewer deviant behaviors. Income does not have significant effects on deviance.

Model III adds individual-level covariates and allows their effects to vary across contexts. The variance components for peer deviance, mother's parenting, cohort, and family structure variables are significant. Thus, it proves that the effects of these individual-level variables vary across contexts. After controlling the effects of controlled variables, the average effects of peer deviance, school problem, and mother's parenting turned out to be significant. Thus, adolescents who have deviant peers and are at school with greater school problems will tend to have greater deviant behavior. Mother's parenting is related to fewer deviant behaviors. Family structure is not related to deviance.

Adding the contextual covariates. In Model IV, contextual-level covariates are added to predict the across group average intercept. The magnitude for control variables and individual-level covariates are roughly the same as Model III. The conclusions regarding these variables stay the same.

After controlling all other variables, the effect of community disadvantage is significantly related to deviance. Students resided in a disadvantaged community will tend to have greater deviant behavior. However, we did not find significant effect for crime rate.

Cross-level interactions. Finally, in Model V, the cross-level interactions are added into the random slopes (i.e., the level-II equations for individual-level slopes). In Table 3, I have listed the results for significant cross-level interaction. The

differences in deviance between cross-generation parenting and stepfamilies and intact families increase as neighborhood disadvantage increases. Another two significant interactions are found for crime rate. However, the magnitude is pretty small.

DISCUSSION

In summary, adolescents in cross-generation parenting and stepfamilies tend to have more deviant behavior than those in intact families. Third graders in junior high school students and males score significantly greater in deviance. Adolescents of higher education parents tend to have children with fewer deviant problems.

Adolescents' deviance is significantly related to a mother's parenting practices, peers' deviance, and school problem. The relationship between deviance and the two community-level variables (without considering the clustered structure) is trivial.

Students come from Ilan prefecture are more disadvantaged then Taipei city and Taipei prefecture in terms of various aspects (e.g., crime rate, percentage of community welfare, less than high school education, and male unemployment rate).

The HLM analyses reveal that there are interaction between family structure (i.e., cross-generation parenting household and step parent households) and community disadvantage. The differences in deviance between cross-generation parenting and stepfamilies and intact families increase as neighborhood disadvantage increases. That is, students of these two family types fare worse than students of the intact families.

In the present study, the HLM technique that allows for dependency among subjects from the same contexts is used. It avoids the possible biasing conclusion that might obtain if using ordinary regression.

One of the issues in contextual analysis is how to define contexts. According to Teachman and Growder (2002), we should focus on "contexts defined by the nature and scale of an individual's social interactions...by the set of social contacts with which the individual interacts on a regular basis" (Teachman & Growder, 2000, pp. 281). They argue that, to define the boundaries and characteristics of contextual units, we should make sure that all individuals in the same neighborhood are under the same contextual conditions. If the contexts defined are too large, individuals within the same contexts will differ in their exposure to the neighborhood characteristics. If the contexts are too small, we might not be able to capture the scope of an individual's activity and interactions.

However, in present study (also in most other studies), we often have to rely on information on geographic areas. I use district of county and town as the contexts, it might be too broad for some junior high school students. Village neighborhood might be more appropriate to describe the contexts of their daily interactions; however, this choice is limited by the need to have enough numbers of cases within a neighborhood. It is possible to get by this problem by combining adjacent village neighborhoods that are similar in terms of community-level characteristics.

In the present study, dependency among communities is not considered. However, this is an unrealistic assumption. Adjacent neighborhoods may affect each other's level of disorganization or disadvantage and crime. Ignoring spatial dependence may lead to false conclusion. It is suggested that future study to incorporate this aspects.

Another dimension of community characteristics is time. The potential problem with cross-sectional data is that, given the high residential mobility, the neighborhood at an earlier time is unlikely to be the same at a later time. It is

suggested that we treat neighborhood characteristics as time-varying explanatory variables whenever the subjects change neighborhood (South & Crowder, 1999).

Table 2. Correlation matrix for the variables used in the analysis

	COHORT	GENDER	PEDU	INC	LDEV	FDEV	SCHOOL	MPAR	COMDIS	RATE
COHORT										
GENDER	.030									
PEDU	.032	.017								
INC	-.044(**)	.020	.327(**)							
LDEV	-.164(**)	.170(**)	-.087(**)	-.004						
FDEV	-.176(**)	.184(**)	-.073(**)	-.016	.224(**)					
SCHOOL	-.010	-.028	-.015	.013	.108(**)	.037(*)				
MPAR	.067(**)	-.107(**)	.218(**)	.090(**)	-.216(**)	-.097(**)	-.014			
COMDIS	-.029	-.016	-.133(**)	-.076(**)	.005	.024	.007	-.024		
RATE	.041(*)	.005	.033(*)	-.012	-.010	-.004	-.054(**)	-.009	-.001	
CROSS	-.004	.034(*)	-.032	-.021	.048(**)	.004	-.006	-.010	.005	.012
SINGLE	.009	-.010	-.012	-.091(**)	.014	.019	.015	-.088(**)	.010	-.011
STEP	.001	.006	.000	-.001	.036(*)	.023	-.005	-.047(**)	.017	.003
OTHER	-.022	-.014	-.049(**)	-.007	.032	.000	.020	-.100(**)	.038(*)	.033

Note: **   Correlation is significant at the 0.01 level (2-tailed).

     *   Correlation is significant at the 0.05 level (2-tailed).

Listwise deletion N=3555

Table 3. Coefficients from HLM analysis of deviance

	Model I ANOVA	Model II Control	Model II Control+indiv	Model III Control+comm	Model IV cont_1	Model V cross-level
Intercept	2.371(0.003)***	2.41(0.009)***	2.406(0.009)***	2.415 (0.009)***	2.402(0.007)***	2.403(0.008)***
Individual level variables						
Cohort		-.046(.005)***	-0.037 (0.005)***	-0.046 (0.005)***	-0.034(0.004)***	-0.035(0.005)***
Gender		.047(.004)***	0.037 (0.004)***	0.047 (0.004)***	0.035(0.004)***	0.035(0.005)***
Parent's education		-.007(.002)***	-0.004 (0.001)*	-0.007 (0.002)***	-0.004(0.002)*	-0.004(0.002)*
Income		.001(.001)	0.001 (0.001)	0.001 (0.001)	0.001(0.001)	0.001(0.001)
Fdev			0.013 (0.003)***		0.015 (0.002)***	0.013 (0.003)***
School			0.002 (0.000)***		0.002(0.000)***	0.002(0.000)***
Mpar			-0.004 (0.000)***		-0.004 (0.000)***	-0.004 (0.000)***
Family structure (vs. intact)						
Cross-generation parenting			0.071 (0.037)		0.073(0.028)**	0.065(0.031)*
Single			0.003 (0.011)		-0.000(0.010)	0.001(0.011)
Step			0.033 (0.021)		0.028(0.018)	0.016(0.019)
Other			0.049 (0.039)		0.011(0.017)	0.029(0.037)
Community level variables						
Crime rate				-0.000 (0.000)	-0.000(0.000)	-0.000(0.000)
Community disadvantage				0.009 (0.002)***	0.009(0.002)***	0.009(0.003)**
Cross-level interaction						
Cross-generation parenting ×comdis1						0.115(0.038)**
Step×comdis1						0.059(0.021)**
Other×crime rate						-0.001(0.000)***
Mpar×crime rate						0.000(0.000)*
Variance components						
Between neighborhoods	0.00014***	0.00119**	0.00144	0.00109	0.00010	0.00009
Within neighborhoods	0.01787	0.01663	0.01471	0.01661	0.01502	0.01502

Note: Standard errors are in parentheses; N of individuals=3555; N for district of county and town   29

* $p <.05$; ** $p <.01$; *** $p <.001$ (two-sided tests).

REFERENCE

Amato, P. R. (1990). Family environment as perceived by children. *Journal of Marriage and the Family, 52,* 613-620.

Amato, P. R., & Booth, A. (1997). A generation at risk: growing up in an era of family upheaval. Cambridge, MA: Harvard University Press.

Baumrind, D. (1996). The discipline controversy revisited. *Family Relations, 45,* 405-414.

Brooks-Gunn, J., Duncan, G. J., Klebanov, P. K., & Sealand, N. (1993). Do neighborhoods influence child and adolescent development? American Journal of Sociology, 99, 353-395.

Elliott, D. S., Wilson, W. J., Huizinga, D., Sampson, R. J., Elliott, A., & Rankin, B. (1996). The effects of neighborhood disadvantage on adolescent development. Journal of Research in Crime and Delinquency, 33, 289-426.

Elliott, D. S., & Menard, S. (1996). Delinquent friends and delinquent behavior: Temporal and developmental patterns. In J. D. Hawkins (Ed.), Delinquency and crime: Current theories (pp. 28-67). Cambridge: Cambridge University Press.

Hirschi,T. (1969). Causes of delinquency. Berkeley: University of California Press.

Jencks, C., & Mayer, S. (1990). The social consequences of growing up in a poor neighborhood. In L. Lynn & M. McGeary (Eds.), Inner-city poverty in the United States (pp. 111-186). Ishington, DC:National Academy.

Kierkus, C. A. & Baer, D. (2003). Does the Relationship Between Family Structure and Delinquency Vary According to Circumstances? An Investigation of Interaction Effects. Canadian Journal of Criminology and Criminal Justice**.** 45, 405-

Maccoby, E. E. & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. H. Mussen (Series Ed.) & E. M. Hetherington (Vol. Ed.), Handbook of child psychology: Vol. 4. Socialization, personality, and social development (4th ed., pp. 1-101), New York: Wiley.

Mclanahan., S. S., & Sandefur, G. (1994). Growing up with a single parent: What hurts, what helps. Cambridge, MA: Harvard University Press.

Raudenbush, S. Bryk, A. Cheong, Y., & Congdon, R. (2000). HLM 5: Hierarchical Linear and nonlinear modeling. Lincolnwood, IL: Scientific Software International.

Sampson, R. J. (1986). Crime in cities: The effects of formal and informal social control. Pp. 271-311 in A. Reiss & M. Tonry (Eds.) Crime and Justice, Vol 8, Chicago: University of Chicago Press.

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

Sampson, R. J. Raudenbush, S. W. & Earls, E. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. Science, 15, 918-924.

Shaw, C. R. and Mckay, H. D. (1942). Juvenile delinquency and urban areas. Chicago: University of Chicago Press.

Simons, R. L., Wu, C., Lin, K., Gordon, L. Conger, R. D. (2000). A cross-cultural examination of the link between corporal punishment and adolescent antisocial behavior. *Criminology, 38,* 47-79.

Simons, R. L., Lin, K., Gordon, L. C., Brody, G. H., & Conger, R. D. (2002). Community differences in the association between parenting practices and child conduct problems. Journal of Marriage and Family, 64, 331-345.

South, S. J. & Crowder, K. D. (1999). Neighborhood effects on family formation: Concentrated poverty and beyond. American Sociological Review, 64: 113-132.

Steinberg, L. Mounts, N. S., Lamborn, S. D., & Dornbusch, S. M. (1991). Authoritative parenting and adolescent adjustment across varied ecological niches. *Journal of Research on Adolescence, 1,* 19-36.

Steinberg, L., Fletcher, A., & Darling, N. (1994). Parental monitoring and peer influences on adolescent substance use. *Pediatrics, 93,* 1060-1064.

Sutherland, Edwin H. (1947). Principles of Criminology, 4th ed. Philadelphia: Lippincott.

Sutherland, E. H., Cressey, D. R., and Luckinbill D. F. (1992). Principles of criminology. Dix Hills, NY: General Hall.

Teachman, J. &Growder, K. (2002). Multilevel models in family research: Some conceptual and methodological issues. Journal of Marriage and Family, 64, 280-294.

Thomson, E., Hansom, T. L., & McLanahan, S. S. (1994). Family structure and child well-being: Economic resources and parental behaviors. Social Forces, 73, 221-242.

Furstenberg, F. F. (1993). How families manage risk and opportunity in dangerous neighborhoods. In W. J. Wilson (Ed.), Sociology and the Public Agenda (pp. 231-258). Newbury Park, CA: Sage.

Williams, D. R., & Collins, C. (1995). US socioeconomic and racial differences in health: Patterns and explanations. Annual Review of Sociology, 21, 349-