The Role of Empathy in Predicting Bullying Behavior, Moderated by Parenting Style

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ABSTRACT

The Role of Empathy in Predicting Bullying Behavior, Moderated by Parenting Style

A thesis presented to the Department of Psychology

Graduate School of Arts and Sciences
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Bullying is a predominantly aggressive peer behavior among school-aged students. Previous studies have shown that empathy is negatively related to bullying behavior. However, the results are equivocal about the relationship between cognitive empathy and bullying behavior. Parenting style has been shown to be highly related to bullying behavior and empathy. However, few studies examine how empathy and parenting style interact in predicting bullying behavior. This study fills in the gap to examine the interaction between empathy and parenting style in bullying behavior. This study hypothesizes that parenting style moderates the role of cognitive empathy in predicting bullying behavior. This study also hypothesizes that gender, as a covariate, has an effect on the relationship between empathy and bullying behavior.
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Introduction

Bullying

In 1989, Tattum defined bullying as “the most malicious and malevolent form of deviant behavior widely practiced in our schools” (Tattum & Lane, 1989, p. 1). From then on, bullying started to appear in the psychological literature. In the early 1990s, bullying was identified as a subtype of children’s aggressive behavior (Dodge, 1990). The definitions of bullying vary in many different ways (Dodge, 1991; Olweus, 1993; Smith & Thompson, 1991). Olweus defined bullying as repetitive negative actions and intentionally harmful behavior elicited by a more powerful person or group that causes another less powerful one or group significant distress, injury, or discomfort (Olweus, 1994). Despite the differences between definitions, most of them reach a consensus: bullying is perceived as a subset of aggression. Bullying involves: a) an imbalance of power or strength between the bully and the victim, including physical and/or psychological aspects, b) a deliberate intention by someone whose aggressive intention is unprovoked to hurt another person, and c) repetition: bullying behavior happen more than once or has the potential to happen more than once. Bullying includes either direct actions (e.g., physical or verbal attacks) or indirect actions (e.g., spreading rumors or purposefully not speaking to someone) (Jolliffe & Farrington, 2004). Recently, a new type of bullying has emerged: cyberbullying, which refers to a form of bullying that occurs through the internet using personal computers (e.g., email and instant messaging) or cell phones (e.g., text messaging) (Kowalski, Giumetti, Schroeder, & Lattanner, 2014).

Bullying is prevalent among middle school children. The prevalence of school bullying was around 28%, as indicated by the federal government (U.S. Department of Education,
A meta-analysis of 80 studies analyzing bullying involvement rates (for both bullying others and being bullied) for 12-18 year old students reported 35% students involving traditional bullying and 15% involving cyberbullying during their school years (Modecki, Minchin, Harbaugh, Guerra, & Runions, 2014). Recently, The National Center for Educational statistics shows that more than 20.8% of students report being bullied (The National Center for Educational Statistics, 2016). The prevalence of school bullying shows to substantial effects on students’ mental and physical development.

A significant adverse effect on individuals involved in bullying is obvious. Students who engage in bullying behavior are at a high risk for poor school adjustment, sleep difficulties, anxiety, and depression, and they are also at an increased risk for academic problems, substance use, and violent behavior later in adolescence and adulthood (Center for Disease Control, 2015). Children who are bullied (identified as victims) are more likely to suffer a range of mental health problems including anxiety and depression, having low self-esteem, exhibit hopelessness and distress, rejection by peers, and borderline personality symptoms (eg, Schreier, 2009; Wolke, & Schreier, 2012). Effective intervention should be done to prevent students from engaging in bullying behavior.

In order to address effective intervention strategies to prevent students from participating in bullying behavior, the first step is identifying the physiological, psychological, and social factors related to bullying. Previous studies have found that multiple psychological factors can predict bullying behavior, such as parenting style and empathy (Gómez-Ortiz, Romera, & Ortega-Ruiz, 2016; Del Rey, et. al., 2016). However, the interaction role of empathy and parenting style in predicting bullying behavior is still in its infancy. The role empathy plays in bullying behavior is equivocal in literature. It is
reasonable to think that there may be some potential moderators that probably affect the relationship between empathy and bullying. This study will tentatively illustrate whether there is an interaction effect between parenting style and empathy in predicting bullying behavior.

**Empathy and bullying**

Empathy generally refers to the ability to understand and share others’ feelings involving social interactions and interpersonal communication. According to Davis (1983), “empathy in the broadest sense refers to the reactions of one individual to the observed experiences of another” (p.113). Upon our literature review, empathy has been usually described as having two parts; affective empathy, which facilitates the capacity to experience and share the same feelings or emotions of another people, (Bryant, 1982) and cognitive empathy, which facilitates the capacity to understand, but not necessarily feel the same emotions of other people (Hogan, 1969).

Despite exactly how empathy is defined, the subjective experience of empathy is thought to make individuals emotionally responsive to the feelings of others (Jolliffe & Farrington, 2004). Theorists suggest that empathy facilitates prosocial behaviors; individuals with high empathy (the ability to experience and understand another’s emotions), will help to relieve others’ negative emotions either for selfish reasons (e.g., to alleviate severe distress of self) or for altruistic reasons (e.g., to reduce another’s distress) (Jolliffe & Farrington, 2006). The relationship between empathy and prosocial relations are confirmed by studies (e.g., Nickerson, A. B., 2014, Finlay, 2006). People with higher empathy are more likely to take on prosocial roles in bullying situations, such as defending the victim (Nickerson, A. B., & Mele-Taylor, D., 2014). Inversely, those with low empathy will fail to comfort others’ distress and
discomfort; this may be because those with low empathy cannot share the emotional feelings of others or even understand the emotional status of others. Lack of the ability to experience or perceive others’ emotions and feelings may display a positive relationship to antisocial behavior.

Parts of the development of empathy is derived from maturity of theory of mind and perspective taking. Children gradually learn to think from the others’ point of view and understand individual emotional status of self and others. (Lonigro, Laghi, Baiocco, & Baumgartner, 2014; Bensalah, Caillies, & Anduze, 2016). By sharing each other's feelings, children are more willing to help others when they are distressed or sad. As a result, prosocial behavior is enhanced by the ability of empathy. Due to the cognitive limitation among young children, older children exhibit higher empathy abilities than younger children (Del Rey, R., 2016).

Gender differences exist in empathy in early childhood and adolescence. Females score higher than males on overall empathy and affective empathy (Del Rey, R., 2016), whereas there is a slight difference on cognitive scales. Females display more sympathy and concern towards peers than males, who inversely tend to be less involved in emotional concern for others (Del Rey, R., 2016). Studies show that the involvement in bullying among males is significantly higher than among females in terms of the amount of bullies and the frequency of bullying (Jolliffe & Farrington, 2006).

Previous studies demonstrate that empathy promotes the development of prosocial behavior (Eisenberg & Fabes, 1998; Nickerson, A. B., & Mele-Taylor, D., 2014). If empathy inhibits aggression in general, the deficits of empathy playing a role in bullying behaviors is reasonable in that children who have less empathy towards others may be more prone to
bullying them. In practice, providing empathy training to decrease aggressive behaviors has become increasingly popular (Ward & Durrant, 2013). Nevertheless, the results of recent studies that have been conducted to explore the role of empathy in bullying is equivocal. Some studies have found that aggressive children generally score low on the measurement of empathy (e.g., Olweus 1993; Sutton, 1999), whereas some have found that this negative relationship between empathy and aggressive behavior only exists in boys but not in girls (Gini, 2007); and the opposite findings also were displayed that low empathy was more significantly related to bullying for females than for males (Jolliffe & Farrington, 2006).

The contradictory results may come from the fact that empathy was treated as a single dimension when examining the relationship of bullying behavior. When evaluating the role of empathy in predicting bullying behavior, the two dimensions of empathy, cognitive empathy and affective empathy, should be evaluated separately. Theoretical research has demonstrated that cognitive empathy and affective empathy each serve a different role in human’s emotional regulation and behavior (Lockwood, Seara-Cardoso, & Viding, 2014). Cognitive empathy is the ability to understand others’ emotional feelings, but not necessary to feel the same emotional arousal, whereas affective empathy addresses the ability to experience others’ emotions and feelings. However, even when specifying empathy as cognitive empathy and affective empathy, contradictory results still exist in the literature. Jolliffe and Farrington (2006) conducted a study on the role of empathy and bullying among adolescents in the United Kingdom including the effect of gender on the relationship, and found that cognitive empathy was not associated with bullying behavior in both males and female adolescents, while affective empathy did predict bullying behavior among both males and females who engaged frequently in bullying acts. The same author then followed another
finding that low affective empathy related to traditional bullying in males, but not in females (Jolliffe & Farrington, 2011). Recent studies found that among the highest callous-unemotional bullies there is no more deficit in cognitive empathy than non-bullies, but they have the lowest affective empathy (Qualter, & Padgett, 2011). These contradictory findings underscore the complexity of both cognitive and affective empathy and bullying behavior in the literature on males and females.

Some plausible explanations account for the inconsistent findings. Firstly, the measurement of the conceptualization of empathy is a possible explanation for the contradictory findings in literature. Some research (e.g., Chantal, 2012) implements IRI (Interpersonal Reaction Index) to measure cognitive empathy and affective empathy, where some (eg, Rosaio, 2015) use BES (Basic Empathy Scale) to measure both kinds of empathy. These two self-report questionnaires differ in many aspects. BES consists of two subset scales, one is cognitive empathy scale and another is affective empathy scale. For IRI, it include four subset scales comprising of perspective taking, empathic concern, fantasy, and personal distress. In general, PT(perspective taking) is regarded as a measurement of cognitive empathy, and ES(empathic concern) as a measurement of affective empathy. Testing the correlation between the two scales, results shows that the PT (perspective taking) scale displays a high correlation of both cognitive empathy and affective empathy on BES scales, whereas ES (empathic concern) is weakly related to the affective empathy of BES scale(Jolliffe & Farrington, 2006). The PT overlap to the concept of affective empathy and the EC more emphasize the negative emotional feeling of others, like distress, or pain. As for BES, empathy is more highly related to personal traits, IQ and parental supervision(Jolliffe & Farrington, 2006). Additionally, IRI is widely used among university students and
adolescents (Carré, Stefaniak, D’Ambrosio, Bensalah, & Besche-Richard, 2013; Albiero, Matricardi, Speltri, & Toso 2009; Jolliffe & Farrington, 2006). As a result, the reliability and validity of IRI in measuring middle school aged children are unclear.

Secondly, cognitive empathy, vicariously experiencing the discomfort or distress of peers, seems to promote inhibiting acts of harm or bullying, while it is also likely that bullies gain a feeling of achievement and satisfaction from witnessing the victim's pain responses (e.g., Perry & Perry, 1974; Gagnon, 2012). Perry, D and Perry, L found a significant positive relationship between the magnitude of victim's pain cues and the level of aggressive boys' aggressiveness among elementary school boys. This group of aggressors may tend to experience a reward from bullying others and engage in imposing on others the experience of distress and pain. Environmental circumstances may serve as a moderator in how cognitive empathy impacts bullying behavior among individuals. The way the bullies grow up may influence how they interpret the social interactions, whether prosocial or antisocial. Parenting is a significant factor among children that can influence how people see the world and react the surrounding environment.

**Parenting style and Bullying**

Parenting style is defined as, “a constellation of attitudes towards the child that are communicated to the child and create an emotional climate in which the parent’s behaviors are expressed” (Darling & Steinberg, 1993). Baumrind (1971) proposed four parenting style typologies: authoritative, authoritarian, permissive, and negligent. These typologies are based on two dimensions: parental responsiveness and parental control (Maccoby and Martin, 1983). The parental responsiveness dimension involves the extent to which children
perceive their parents as responsive, loving, and involved. The parental control dimension refers to the extent to which children perceive feeling controlled, monitored, and supervised by their parents. The different scores on the two dimensions display four types of parenting styles. Neglectful parents have lower scores in both dimensions, whereas authoritative parents have higher scores in both dimensions. Lower scores on responsiveness, but higher on control dimension generates authoritarian parents. On the contrary, lower scores on the control subscale but higher on responsiveness derives permissive parents.

Although empirical research for the relationship between empathy and bullying behavior is mixed, in literature, substantial studies have found support for the relationship between parental style and bullying behavior among middle school children. Robust evidence demonstrate that negative parenting, including permissive, authoritarian, and neglectful parenting, are positively related to bullying behavior. Bullies more likely receive authoritarian child rearing styles than non-bullies (Stelios N. Georgiou, 2012). Some researchers have found that authoritarian parenting styles best predict bullying behavior (Lereya, Samara, & Wolke, 2013; Maralani, Mirnasab, & Hashemi, 2016; Baldry & Farrington, 2000). Other findings demonstrate that children who bully peers are more likely to come from families where parents who adopt authoritarian, harsh, and punitive child-rearing practices (Espelage, Bosworth, & Simon, 2000). Some research investigated the differences between families of victims, bullies, bully/victims, and non-involved children on family functioning and child rearing practices (Lereya, Copeland, Zammit, & Wolke, 2015; Keelan., Schenk, McNally, & Fremouw, 2014; Lösel & Bender, 2014; Duggins, Kuperminc, Henrich, Smalls-Glover, & Perilla, 2016). Bullies in particular showed a widely diverging family pattern as compared to the other groups. They described their family as less cohesive, as
having more conflict, and as being less organized and controlled. Moreover, the results revealed lower scores on expressiveness, social orientation, and attachment within this group. Their parents only differed from parents of victims, bully/victims, and non-involved children on reporting more punishment (Stelios N. Georgiou, 2012).

**Empathy, Parenting style, and Bullying**

In general, robust evidence shows that empathy inhibits aggressive behavior. However, many empirical studies have found that the relationship between empathy and bullying behavior is complex and inconsistent. One of the plausible reasons for the equivocal findings is that cognitive empathy, while seeming to inhibit aggressive acts or behavior, is also likely to promote bullying behavior on some occasions. Some bullies gain a feeling of achievement and satisfaction from witnessing the victim's pain response (Perry, 1974). This distinct group of bullies may be inclined to engage in hurting others and gain reward from others pain and sadness. For them, though they may have high levels of cognitive empathy, they are more likely to be involved in bullying others instead of feeling sympathy for others pain. Authoritarian parents are strict and harsh and but not provide warmth and love towards their children. Reared by this parenting style, children are more likely to imitate the way their parents treats them to treat their peers. They are willing to punish and bully others without considering the victim’s feelings, since their parents also do not share empathy to them and prone to criticize and punish them. Children with authoritarian parents are less likely to feel empathy for others’ sadness even though they can identify how the victim may feel. The reason behind this is that their parents do not care about their feelings when they desire love and warmth. On the contrary, children who are raised in authoritative parenting style, which gives them regulation and substantial support, are more prosocial and less
involved in bullying behavior. The other two dysfunctional parenting styles, the permissive parenting style and neglectful parenting style, are also dangerous to children's development. Children with these parenting styles are strongly related to be bullies or being victimized by bullies, or victims/bullies.

A bully is not necessarily just a single person, but it can also mean a group of people. The leader of the group of bullies can have a high ability of cognitive empathy and affective empathy in order to strengthen the unity of their group. But they still engage in bullying behavior. It is about how they interpret social cues, whether prosocial or antisocial. Children’s social environment plays an important role in shaping their social beliefs, including school norms, peer relationships, parenting and so on. Parents, has the fundamental impact on children building relationship with others. Therefore, it is proposed that parenting style may serve as a moderator to moderate the role cognitive empathy plays in predicting bullying behavior.

**Gender difference**

The gender difference in the relationship between empathy and bullying acts exists. Overall, males have lower empathy than females (Pasalich, Waschbusch, Dadds, & Hawes, 2014). Also, males are shown to be much more engaging in bullying behavior (Li, 2006). Some research shows that gender does not moderate the role of empathy in predicting bullying behavior, though mean differences were found for gender (Rosaio, 2015). However, more robust evidence shows that gender moderately affects the role of empathy in predicting bullying behavior but that there is not much difference in cognitive empathy in females and males. It may be because compared to females, males do not take it for granted
that cognitive empathy acts as a social cue to inhibit bullying behavior, which means they will not consider other people’s feelings even they understand others feelings. Therefore, I hypothesise that males are expected to score lower on affective empathy than females, whereas the score on cognitive empathy will be expected to not be statistically significant, and the negative relationship between cognitive empathy and bullying behavior among males is expected to be weaker than among females.

**Population and sample size**

Based upon the literature review, most of studies of bullying behavior among middle school were from Western cultures, like the United States, Canada, modern Korea, and modern China (Egeli, N. A., 2006; Rinaldi, C. M., 2016; Jolliffe, D., 2006; Farrington, D. P., 2004). Few of the studies explore how rural Chinese students responded to bullying perpetration. This study expects to extend the range and diversity of the research population. Also, in previous studies, a sample size of 500-1,000 subjects shows a decent result of the potential relationship between predictors and outcomes. With less than 500 participants’ results in a small effect size and much larger sample size, results tend to reject the null sensitively, regardless whether the effect size is significant. Therefore, this study expects to recruit 900 students in Yunnan, China.

**Hypothesis**

Based on the previous studies and discussion, this study proposes to test the following several hypotheses:

Hypothesis 1. Cognitive empathy is associated with bullying behavior. A higher score of cognitive empathy is related to a lower score of bullying behavior.
Hypothesis 2. Parenting style will moderate the role of cognitive empathy in predicting bullying behavior. For authoritarian parenting, the negative relationship between cognitive empathy and bullying is weakest, whereas this relationship is strongest for the authoritative parenting style. The relationship between cognitive empathy and bullying is moderate among indulgent and negligent parenting.

Hypothesis 3. Males are expected to score lower on affective empathy than females, whereas the score on cognitive empathy will be expected to show no statistical significance.

Hypothesis 4. Gender differences are expected to moderate the role of cognitive empathy in bullying behavior. The negative relationship between cognitive empathy and bullying behavior among males is expected to be weaker than among females.
Method

Study population and sample

The population of this study is middle school children recruited from a rural area in the Yunnan Province in China. We will first ask for the approval of the Yunnan Bureau of Education to run this study and then choose three middle schools in Yunnan. The schools are The High School Affiliated to Yunnan Normal University, Yunnan Nationalities high school, and Kunming No1. Middle School. These three schools are the main middle school in Luoyang. We expect that the staff and supervisor have positive relationships with students so that the result will be more reliable and true and not very biased.

Ideally, we will randomly recruit 900 students range from grades six through eight, with three of each school recruiting 300 participants. In each school, we expect to recruit 100 participants from sixth grade, 100 participants from seventh grade and 100 participants from eighth grade. Among each grade level, of the 100 participants, I will recruit 50 males and 50 females. Therefore, the sample consists of 450 girls (50%) and 450 boys (50%). Students in the sample may range from age 10 to 15 years, with a mean age of 12.5. Each participant needs to sign a Child Assent form (see Appendix A), and their parents or guardians also need to sign a permission slip and an informed consent form (see Appendix B). Participants will not receive any compensation or reward for participation. However, they will be informed that they are contributing to the field of child developmental psychological research and we will hold a presentation about mental health education for each school in the local auditorium for free. In order to make the sample more diverse, this study will not set exclusion criteria. However, participants who do not provide all of the three
signed consent forms will not be included. All participants will be treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychological Association, 2002).

**Measures**

--The Revised Olweus Bully/Victim Questionnaire (ROBVQ) (PNI) is a 39-item self-report questionnaire about bullying and victimization experiences. Bullying and victimization subscales (20 total questions, each consists 10 questions) are measured on a scale of 0-4 (0 = It hasn’t happened to me in the past couple of months, 1 = only once or twice, 2 = 2 or 3 times a month, 3 = about once a week, and 4 = about several times a week). For example: How often have you been bullied in the past couple months? Another 19 questions are written free-responses (qualitative data, e.g., Have you reported when you are bullied? If so, to whom?). Although will use the whole scale of ROBVQ to measure, only 20 quantitative scales will be analyzed in this study. This scale will generate two continuous variables: bullying behavior (with valid scores ranging 0-80) and victimization behavior (with valid scores ranging 0-80). ROBVO has a high internal consistency (the Cronbach’s alpha = 0.80 or higher) and has evidenced construct validity. (Olweus, 1996).

--Basic Empathy Scale measures cognitive and affective empathy. The scale comprises 20 items; 9 items for cognitive empathy (e.g., I can usually understand how they feel), and 11 items for affective empathy (e.g., I don’t become sad when I see other people cry). Each statement is rated on a 5-point scale from 1=strongly agree to 5=strongly disagree. The two subscales will generate two continuous variables: cognitive empathy with scores ranging 0-45 and affective empathy with scores ranging 0-60. The scale had a high overall and partial
reliability coefficients (Cronbach’s alpha total scale=.85; cognitive subscale=.84; affective subscale=.85). Also, The Chinese revision of BES exhibited satisfactory internal consistency and moderate test–retest reliability with the sample of 1,524 middle school students, ages ranging from 9 to 18 (Geng, Y., Xia, D. & Qin, B, 2012). Cronbach’s α of the Chinese version scale were .72 for cognitive empathy, and .73 for affective empathy. The four weeks test–retest correlations were .60 for cognitive and .71 for affective. The split-half reliability was .77, which shows high reliability and validity overall (Geng, Y., Xia, D. & Qin, B, 2012).

--Scale of perceived parenting style: children report (Abdul Gafor, K.; & Kurukkan, 2014), is a scale that consists of 38 items of which 19 are to measure both father and mother parental responsiveness and 19 are to measure both father and mother parental control perceived by adolescents, e.g., responsiveness: spend time with me; control: require how I spend my free time. This measure uses is the a likert scale with five choices including, “always true”, “almost true”, “sometimes false”, “almost false”, and “always false”. Based on the scale, it would generate four categorized types of parenting. A parent who is rated as high in both responsiveness and control (above the median), is categorized as an authoritative parent. A parent who rated as low in both responsiveness and control, (below the median), is categorized as a negligent parent. A parent, who rated as high in responsiveness and low in control, is categorized as an indulgent parent. A parent, who rated as low in responsiveness and high in control, is categorized as an authoritarian parent. This scale will generate a categorical variable with four levels: authoritative=1, negligent=2, indulgent=3, authoritarian=4. The scale is designed for Asian adolescent students (Abdul Gafor, K.; & Kurukkan, 2014). The items in the scale were generated based on definitions given by Baumrind, Maccoby, and Martin for parental responsiveness and parental control. The
validity coefficient is 0.80 for responsiveness and 0.76 for control subscale. The test-retest coefficient of reliability of responsiveness scale is 0.81 and for control it is 0.83.

--Scale of parenting style-parental report, a revised scale derived from Abdul’s scale of parenting style. This scale was changed from the children's perspective to the parents' perspective, e.g. spend time with me is changed to spend time with my kid; require how I spend my free time is changed to require how my kid spends his/her free time. This scale will generate two categorical variables: maternal parenting style and paternal parenting style with four levels: authoritative=1, negligent=2, indulgent=3, authoritarian=4.

**Procedure**

First, researchers will tell students the instructions of the study, have them read the consent form aloud, and then let them feel free to ask questions. Students will be informed that they have right to not participate in this study. Also, their information and answers will be kept in confidentiality. If they commit to participate, they need to sign a child assent form and take an informed permission and consent form to their parents or guardians to sign and bring it to school with both parents’ or guardians’ signatures. Also, participants should be told that they need to commit to answering the questions as truthfully as they can. They will also be guaranteed that the data will only be used to for research purposes. ROBVQ, BIS, and the scale of parenting style will be administered to participants in their regular rooms. For ROBVQ, researchers should follow the instructions explaining the term “bullying.” When we say bullying, it means repeatedly hitting, saying mean and hurtful things, making fun of others, or spreading rumors. Researchers should make sure the students understand the answers to the questions will be kept answered with confidential and anonymous. Then, the
participants’ mothers will come in the rooms and complete a scale of parenting style: parenting report. After that, fathers will come in and complete the scale of parenting style: parenting report. Researchers should make sure that fathers and mothers should be separated and answer questions independently. After completing all of the questionnaires, participants and their parents should return to their regular rooms and have the opportunity to ask questions about the study. Also, if they have any uncomfortable feelings, they can seek for help from teachers or researchers immediately.

**Analytical plan**

1. Missing and invalid values will be excluded from the dataset after collecting all the data. Values that are higher than the maximum scale or lower than the minimum scale will be excluded. The dataset consists of 13 variables. Outcome variables: self-report bullying, peer-rated bullying, self-report victimized, and peer-report victimized. Predictors: gender, age, cognitive empathy, affective empathy, child report maternal parenting, child report paternal parenting, maternal report parenting, paternal report parenting. Control variables: age & gender. Gender will be treated as categorical variable: female=1, male=0. All of the data will be entered into txt. format and R will be used to do a statistical analysis.

2. For parenting style, this study will use child perceived scale of parenting style measuring parenting style. It will be transformed into categorical variables with four levels: authoritative=1, negligent=2, indulgent=3, authoritarian=4 as mentioned in the criteria in the Measurements section.
3. Confirmatory factor analysis (CFA) will be conducted for the subscales of cognitive empathy and affective empathy, as well as for the scale for perceived parenting style. Report $\chi^2$, df, related p-value, RMSEA, SRMR, CFI.


5. Generate bivariate scatterplot for outcome variable: bullying behavior and predictor: cognitive empathy. If non-linear relation need to be concerned, appropriate data-transformation will be used.

6. For hypothesis 1, Linear Regression model will be used to investigate the predictive ability of cognitive empathy and bullying behavior. As an example, the statistical model: $\text{bullying} = \beta_0 + \beta_1 \times \text{cognitiveE} + \epsilon$ The null hypothesis is $\beta_1 = 0$.

7. For hypothesis 2, A multiple regression model will be applied to examine the moderation effect of parenting behavior on the relationship between cognitive empathy and bullying. The multiple regression model

$$\text{bullying} = \beta_0 + \beta_1 \times \text{cognitiveE} + \beta_2 \times \text{parentingS} + \beta_3 \times \text{cognitiveE} \times \text{parentingS} + \epsilon$$

The null hypothesis is $\beta_3 = 0$. To examine the model fit, Chi-square($\chi^2$), degree of freedom (df), root mean square error (RMSE), R-squared will be report.

8. If the above model is significant, a reference category of parenting style will be added to test exactly the moderation effect. Specify reference category = authoritative parenting, the estimate model 2:

$$\text{bullying} = \beta_0 + \beta_1 \times \text{cognitiveE} + \beta_2 \times \text{negligCE} + \beta_3 \times \text{ingulCE} + \beta_4 \times \text{authroCE} + \beta_5 \times \text{negligCE} \times \text{cognitiveE} + \beta_6 \times \text{ingulCE} \times \text{cognitiveE} + \beta_7 \times \text{authroCE} \times \text{cognitiveE} + \epsilon$$

9. Report the exact the moderation effect of parenting style.
10. For hypothesis 3, analysis of variance (ANOVA) will be conducted to examine the gender difference for cognitive empathy. Report F-statistic, degree of freedom (df), R-squared.

11. For hypothesis 4, another multiple regression model will be fitted to examine the moderation effect of gender on the relationship between cognitive empathy and bullying. The estimated multiple regression model:

\[ 	ext{bullying} = \beta_0 + \beta_1 \text{cognitiveE} + \beta_2 \text{female} + \beta_3 \text{cognitiveE} \times \text{female} \]

The null hypothesis is \( \beta_3 = 0 \). To examine the model fit, Chi-square(\( \chi^2 \)), degree of freedom (df), root mean square error approximation (RMSEA) will be reported.

12. Residual analysis should be done to check the assumptions: normality, linearity, and homoscedasticity. Report Q-Q plots of standardized residual, and scatterplot of the standardized residuals.
Discussion

Due to limitations of the study, some of the data will not be used. However, it will provide useful information for future studies. For the follow up studies, there are some research suggestions. Firstly, the victims’ scales can be used to investigate how parenting styles and individuals’ empathy will influence the plausibility of victims compared to bullies. Secondly, researchers can examine whether there are significant differences among parenting style as they are reported by the different roles of a family, including maternal, paternal, and child views. Third, since the data gathered by this study is from a rural area of China, researchers can compare with other countries or nations whether there are some differences in terms of the relationships and phenomena related to bullying, empathy, and parenting behavior.
Reference


Gagnon, C. M. (2012). *Bullying in schools: The role of empathy, temperament, and emotion regulation*. Florida Atlantic University.


Appendix A
PARENTAL PERMISSION AND INFORMATION CONSENT

Dear Parent/ Guardian,

We are currently conducting a study entitled: "the role of empathy and bullying behavior, moderated by parental style", in which we would like your child to participate at school. This study is a new project in our CARD lab at Brandeis University and has been approved by university.

We are interested in studying individual variation in childhood empathy and bullying behavior, and their parenting style, as well as the gender difference in these variations. In this study, the goal is to tentative figure about how different parenting behavior will affect the role of empathy in predicting bullying behavior among middle school students. We will meet with children for one session lasting about one hour. During the session, children will fill out several paper and pencil survey in which they will answer questions about their thoughts, feelings, and behaviors, and their interactions with their peers.

Allowing your children to participate in this study will help us learn more about peer relationships during childhood and we hope our research results will help to benefit the development of effective interventions aimed at minimizing and modifying risk factors in a way that prevent student from involving in bullying behavior, and that increase protective factors to students develop prosocial behavior. Also, we will hold a presentation about mental health education for each school in the local auditorium for free. You could come and listen the lecture if you are available.

Since participation is voluntary, we would appreciate your completing the enclosed permission slip and return it to your child’s teacher as soon as possible. We also invite your to participate in another portion of this study. Please come to school with your children the day researchers conduct the study. All aspects of this study are voluntary and you are free to withdraw your consent at any time. Your child’s permission will also be obtained prior to testing and she/he will be free to withdraw from this study at any time as well.

We sincerely appreciate your cooperation in this endeavor. If you have any questions, please feel free to contact either of us.

Sincerely yours,

Sign Here:_____

Xiaodong Liu, associated professor  Xueke Song, MA
Faculty of Psychology  Master student
xliu0806@brandeis.edu  xuekesong@brandeis.edu
Appendix B
Consent Form

Title of Research Study: The role of empathy in predicting bullying behavior, moderated by parenting style

Investigators: Xiaodong Liu, associate professor. Xueke Song, Master student.

Purpose: The study is designed to investigate the relationship among empathy, parenting and bullying behavior. Our main objective is to tentatively figure about how different parenting behavior will affect the role of empathy in predicting bullying behavior among middle school students in order to benefit the development of effective interventions aimed at minimizing and modifying risk factors in a way that prevent student from involving in bullying behavior, and that increase protective factors to students develop prosocial behavior.

Procedures: After an age-appropriate explanation of the study, the children will be told the choice to participate or not. The questionnaires will ask questions about each child’s own thoughts, feelings, and their own and observations of classmates’ behaviors, and about their interaction with classmates and parents. The entire procedure is expected to take a maximum of one hour to complete, depending on each child’s reading speed. Children will be given breaks as needed.

Risks: the risks involved with participation in this study are minimal and most children are not expected to take any negative effects. Some children may experience mild temporary emotional arousal. Children who become uncomfortable can quit anytime during the tasks and be referred to the school counselor.

Benefits: the benefits of this research include a greater understanding of bullying and empathy and parenting relationship among children. This study diverse empirical researches among the rural China. Also, we will hold a presentation about mental health education for students in each school for free.

Data Collection & Storage: if you agree to allow your child to participate, your child’s answer will be confidential and kept in a locked storage cabinet. Once data are collected, they will be entered into a computer file. Electronic data will be de-identifying so that it will not be linked to a particular child. Only the researches in this study will see collected data, unless required by law.

Contact Information: For questions regarding your rights as a subject, you can contact the investigator, Xuke Song, the master student in Brandeis University at 1(781)-652-1660

Consent Statement: I have read or had read to me the preceding information describing this study. All questions have been answered to my satisfaction.

I am the legal guardian of:

Child’s Gender : M F Child’s Age:

Child’s First Name  Child’s Last Name

and freely consent to the participation of my child. I understand that I am free to withdraw my child from my study at any time. I have received a copy of this consent form

Signature of Guardian: Date:

Printed Name of Guardian: 

Signature of Researcher: Date:

Optional: I would be happy to be called or emailed at a later date for an additional portion of this study and give my phone number or email for that purpose.
Appendix C
CHILD ASSENT

Empathy and Bullying, Parenting Style

Researchers from Brandeis University are trying to learn about how students involving in bullying in middle schools. You would been asked to participate in helping research understand more about bullying because you are a student in the school that is participating in the research project. If you decide to participate, you will be asked to answer some questions about your feelings, thought about yourself, your classmates, and your parents. Your answers will be private. If something may make you uncomfortable, you can tell researcher or the teacher. Here are some examples of the types of questions:

My friends’ emotions don’t affect me much

Spend time with me

This study will take place in your school and should take about one hour of your time.

The researchers hope this study will help a better understanding of bullying behavior and build an effective prevention program.

You do not have to be in this study if you don’t want to and you can quit the study at any time. If you don’t like a question, you don’t have to answer it and, if you ask, your answers will not be used in the study. No one will blame you if you decide you don’t want to participate.

If you have any questions, just ask researcher, or teacher.

This research study has been explained to me and I agree to be in this study.

First Name   Last Name

Subject’s Signature for Assent   Date
**Appendix D**

**Basic Empathy Scale (20 items)**

Please rate each statement on a 5-point scale with 1=strongly agree, 2=agree, 3=undecided, 4=disagree and 5=strongly disagree. Circle the number that best describe you.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My friends’ emotions don’t affect me much</td>
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<tr>
<td>2</td>
<td>After being with a friend who is sad about something, I usually feel sad</td>
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<tr>
<td>3</td>
<td>I can understand my friend’s happiness when they do well at something</td>
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<tr>
<td>4</td>
<td>I get frightened when I watch characters in a good scary movie</td>
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<td>5</td>
<td>I get caught up in other people’s feelings easily</td>
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<tr>
<td>6</td>
<td>I find it hard to know when my friends are frightened</td>
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<tr>
<td>7</td>
<td>I don’t become sad when I see other people crying</td>
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<td>8</td>
<td>Other people’s feeling don’t bother me at all</td>
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<td>9</td>
<td>When someone is feeling ‘down’ I can usually understand how they feel</td>
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<tr>
<td>10</td>
<td>I can usually work out when my friends are scared</td>
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<tr>
<td>11</td>
<td>I often become sad when watching sad things on TV or in films</td>
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<tr>
<td>12</td>
<td>I can often understand how people are feeling even before they tell me</td>
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<tr>
<td>13</td>
<td>Seeing a person who has been angered has no effect on my feelings</td>
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<tr>
<td>14</td>
<td>I can usually work out when people are cheerful</td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>I tend to feel scared when I am with friends who are afraid</td>
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<tr>
<td>16</td>
<td>I can usually realize quickly when a friend is angry</td>
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<tr>
<td>17</td>
<td>I often get swept up in my friends’ feelings</td>
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<td>18</td>
<td>My friend’s unhappiness doesn’t make me feel anything</td>
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<tr>
<td>19</td>
<td>I am not usually aware of my friends’ feelings</td>
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<tr>
<td>20</td>
<td>I have trouble figuring out when my friends are happy</td>
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</tbody>
</table>
Appendix E
The scale of parenting behavior: child report

Name: ........................................................................................................... Male/Female: ..............................................................................
.................................................................................................................. School: ......................................................................................... Subject: ..............................................................................................

Instructions: Given below are statements to know how your mother/father deals with you. For each statement 5 options namely 'Very right' (5), 'Mostly right'(4), 'Sometimes right, Sometimes wrong'(3), 'Mostly wrong'(2), 'Very wrong'(1) are given.

<table>
<thead>
<tr>
<th>About Mother</th>
<th>About Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>√</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>31.</td>
<td>Advices me</td>
</tr>
<tr>
<td>32.</td>
<td>Celebrates in my successes with me</td>
</tr>
<tr>
<td>33.</td>
<td>Discourages unhealthy foods</td>
</tr>
<tr>
<td>34.</td>
<td>Gets anxious when I am late to reach home</td>
</tr>
<tr>
<td>35.</td>
<td>Inquires how I spend money</td>
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<tr>
<td>36.</td>
<td>Buy dresses for me according to the latest trends</td>
</tr>
<tr>
<td>37.</td>
<td>Enquires how I spend my free time</td>
</tr>
<tr>
<td>38.</td>
<td>Gives me timely advices</td>
</tr>
</tbody>
</table>
Appendix F

The scale of parenting behavior: child report

Name: .......................................................... Male/Female: ..............................................
........................................... School: ............................................................Subject:
...........................................

Instructions

Given below are statements to know how your mother/father deals with you. For each statement 5 options namely 'Very right' (5), 'Mostly right' (4), 'Sometimes right, Sometimes wrong' (3), 'Mostly wrong' (2), 'Very wrong' (1) are given.

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<thead>
<tr>
<th>About Mother</th>
<th>Statement</th>
<th>About Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>√</td>
<td>Eg: Enquires about my matters with teachers.</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Does whatever I tell.</td>
<td>√</td>
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<tr>
<td>2.</td>
<td>Spends free time with me.</td>
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<tr>
<td>3.</td>
<td>Points out my mistakes in the manner that I understand.</td>
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<tr>
<td>4.</td>
<td>Gives money for my needs.</td>
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<tr>
<td>5.</td>
<td>Discusses the benefits and detriments of my learning topics.</td>
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<tr>
<td>6.</td>
<td>Considers my likes in food.</td>
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<tr>
<td>7.</td>
<td>Controls my game when in excess.</td>
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<tr>
<td>8.</td>
<td>Shows love to me.</td>
<td></td>
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<tr>
<td>9.</td>
<td>Enquires the reason for my failure.</td>
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<tr>
<td>10.</td>
<td>Helps me in studying.</td>
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<tr>
<td>11.</td>
<td>Confers responsibilities in accordance with my growth.</td>
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<tr>
<td>12.</td>
<td>Has faith in me</td>
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<tr>
<td>13.</td>
<td>Enquires the reasons for reaching home late</td>
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<td>14.</td>
<td>Accepts my privacy</td>
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<td>15.</td>
<td>Takes care of my dressing</td>
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<td>16.</td>
<td>Fulfils my desires with available means</td>
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<tr>
<td>17.</td>
<td>Makes me aware that the responsibility of what I do is mine itself</td>
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<td>18.</td>
<td>Accepts when I say no to what I dislike</td>
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<tr>
<td>19.</td>
<td>Tells how I should behave with their friends</td>
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<td>20.</td>
<td>Talks to me praising about their friends</td>
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<tr>
<td>21.</td>
<td>Tries to frame my likes and dislikes</td>
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<td>22.</td>
<td>Appreciates when I try to become independent</td>
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<td>23.</td>
<td>Punishes for my mistakes</td>
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<tr>
<td>24.</td>
<td>Shows love when I do any mistake</td>
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<tr>
<td>25.</td>
<td>Enquires who my friends are</td>
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<tr>
<td>26.</td>
<td>Has given me freedom to select the subject for study</td>
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<tr>
<td>27.</td>
<td>Organizes time for my play</td>
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<td>28.</td>
<td>Gives priorities to my preferences in studies</td>
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<tr>
<td>29.</td>
<td>Demands me to be systematic in studies</td>
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<tr>
<td>30.</td>
<td>Emphasizes my successes</td>
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