

The Social, Behavioral, and Emotional Correlates of Bullying and Victimization in a School-Based Sample

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Abstract Bullying is a prevalent problem in schools that is associated with a number of negative outcomes for both the child who bullies and his or her victims. In a community sample of 284 ethnically diverse school-children (54.2 % girls) between the ages of 9 and 14 years ($M=11.28$, $SD=1.82$), the current study examined whether the level of victimization moderated the association between bullying and several behavioral, social, and emotional characteristics. These characteristics were specifically chosen to integrate research on distinct developmental pathways to conduct problems with research on the characteristics shown by children who bully others. Results indicated that both bullying and victimization were independently associated with conduct problems. However, there was an interaction between bullying and victimization in the prediction of callous-unemotional (CU) traits, such that the association between bullying and CU traits was

stronger for those lower on victimization. Further, bullying was positively associated with positive attitudes towards bullying and anger expression and neither of these associations were moderated by the level of victimization. In contrast, bullying was not associated with the child's perceived problems regulating anger, suggesting that children with higher levels of bullying admit to expressing anger but consider this emotional expression as being under their control.

Keywords Bullying · Victimization · Callous-unemotional traits · Conduct disorder · Adolescence

Bullying is defined as intentional, repetitive aggression towards another individual that is perceived as weaker and incapable of defending him or herself (Olweus 2001). Research indicates that bullying is a prevalent problem in schools and is associated with a wide array of negative outcomes, such as poorer psychosocial adjustment and mental health problems, for both the perpetrators (i.e., bullies) and their victims (Nansel et al. 2001; Sourander et al. 2007). Specifically, studies indicate that approximately 15 to 30 % of students are involved in bullying to some degree, either as bullies, victims, or both (Nansel et al. 2001; Olweus 1991). Further, Schäfer et al. (2005) found that children who were bullies in primary school were at an increased risk for continuing to bully others 6 years later in secondary school. Finally, the consequences of bullying others and being bullied appear long lasting. Sourander and colleagues (2007) reported that being a victim of bullying at 8 years of age predicted the presence of anxiety disorders in young adulthood. Thus, advancing knowledge on the correlates to bullying and using this research to prevent this highly prevalent and harmful behavior in schools is a critically important endeavor.

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Bullying and Conduct Problems

One important limitation in the existing research on bullying is that it has typically not been well integrated with the research on the development of conduct problems and aggression. This omission is despite research indicating that bullying tends to be highly associated with conduct problems and aggression (Camodeca et al. 2002; Pellegrini et al. 1999; Salmivalli and Nieminen 2002) and bullies tend to show a number of social and emotional characteristics that are similar to those reported for other children with conduct problems. Specifically, similar to other children with conduct problems (Frick et al. 2014), bullies tend to be callous towards others in that they are low in empathy and guilt (Fanti et al. 2009; Fanti and Kimonis 2012; Gini et al. 2011; Viding et al. 2009). Further, bullies tend to endorse more attitudes that are accepting of bullying, blame the victims, and perceive the victim as deserving of the aggressive treatment (Bentley and Li 1995; Cook et al. 2010; Hymel et al. 2005). These attitudes are similar to those reported for aggressive children who endorse more positive expectancies for the outcomes of their aggressive behavior (Pardini et al. 2003). Finally, and again similar to other children with conduct problems (Frick et al. 2014), bullies tend to score higher on measures of anger and hostility (Espelage et al. 2001).

Unfortunately, despite the similarities between the correlates of bullying and conduct problems more globally, theories of bullying have often not considered recent research on the different pathways through which children develop serious conduct problems. Specifically, the correlates of serious conduct problems often differ depending on the presence of elevated levels of callous-unemotional (CU) traits (Frick et al. 2014). CU traits are characterized by a lack of guilt and empathy, a shallow and deficient affect, and the callous use of others for one's own personal gain (Frick and Nigg 2012). As noted above, these characteristics have been associated with bullying in past samples.

Importantly, conduct problems in those high on CU traits are more strongly related to positive expectations for aggression and instrumental aggression (i.e., aggression for gain or dominance) and they tend to be less strongly associated with anxiety and other indicators of emotional responsiveness towards distress in others (Frick et al. 2014). In contrast, serious conduct problems in children with normative levels of CU traits are more strongly associated with problems in emotional dysregulation and cognitive biases, such as a hostile attributional bias, that could interfere with the cognitive or emotional regulation of behavior leading to high rates of conflicts with peers and high rates of anger and hostility towards others (Frick et al. 2014). These divergent correlates of conduct problems have led to theories as to different causal processes leading to conduct problems in those with and without elevated CU traits, with the conduct problems in those elevated on CU

traits being more related to deficient emotional arousal to distress in others and more positive attitudes towards the use of aggression to obtain goals and the conduct problems in other children being more related to problems regulating emotions and behavior (Frick and Viding 2009).

Bullying and Victimization

This research delineating distinct developmental pathways to conduct problems raises the important question of whether or not these different causal processes may also be useful for explaining bullying. One line of research to suggest that this may be the case is research suggesting that bullying may have different correlates depending on the level of victimization experienced by the child. That is, bullying tends to be more strongly associated with anger, anxiety, and depression (Juvonen et al. 2003; Kaltiala-Heino et al. 2000) and it is more likely to be in response to perceived provocation from peers (Pellegrini et al. 1999; Unnever 2005) in those high on victimization. Thus, the correlates of bullying in those high on victimization are similar to the correlates of conduct problems in those who are not elevated on CU traits and they suggest that bullying in those high on victimization may be an emotional reaction to real or perceived provocation and/or in retaliation for the bullying that they have experienced.

In contrast, bullying is more strongly associated with premeditated and instrumental aggression (Camodeca et al. 2002; Pellegrini et al. 1999; Salmivalli and Nieminen 2002) and with attitudes more accepting of bullying (Bentley and Li 1995; Cook et al. 2010; Hymel et al. 2005), and negatively associated with empathy towards their victims (Gini et al. 2011) in those low on victimization. Thus, the correlates to bullying in those with lower levels of victimization appear to be similar to the correlates to conduct problems in children who show elevated CU traits and may be more related to a callous attitude towards others, including their victims, which make the child more likely to commit acts that harm others, especially when it results in substantial gain.

Emotional Deficits and Bullying

From this research on both bullying and conduct problems, it is clear that certain types of emotional deficits are related to bullying, albeit potentially different deficits depending on the presence of elevated levels of victimization or CU traits, respectively. Specifically, research has been consistent in suggesting that internalizing problems, such as anxiety and depression, are more strongly associated with bullying at high levels of victimization. In fact, research suggests that such internalizing behavior may be a consequence of victimization, irrespective of the presence of bullying (Juvonen et al. 2003;

Pellegrini et al. 1999). However, the moderating role of victimization in the association between bullying and anger is less clear, with anger being associated with bullying irrespective of victimization in some studies (Rieffe et al. 2012). Further, as noted above, research on conduct problems suggests that conduct problems in those low on CU traits are more strongly related to problems in emotional reactivity. However, there is also evidence to suggest that children and adolescents who show proactive aggression (Hubbard et al. 2002) and CU traits (Muñoz et al. 2008a) may look angry but this display of anger is used to intimidate or dominate others, rather than reflecting a problem regulating emotional arousal. Thus, to advance research in this area, it is important to determine whether bullying is associated with the display of different types of negative emotion (e.g., sadness, anger), depending on the level of victimization. Further, it is important to test whether these associations differ depending on whether the focus is on the display of negative affect or whether the focus is on the ability to regulate emotional arousal.

Current Study

Based on this research, we attempted to integrate research showing different correlates of bullying depending on the level of victimization with research showing different correlates of conduct problems depending on the level of CU traits. First, and most importantly, we explicitly tested whether or not victimization moderated the association of bullying with conduct problems and CU traits. We hypothesized that bullying would be associated with conduct problems irrespective of the level of victimization but that bullying and victimization would interact in their associations with CU traits. Specifically, we predicted that the association between bullying and CU traits would be stronger for those low on victimization. Next, we tested whether victimization moderated the association of bullying with other correlates that have been associated with bullying and that are important for differentiating the developmental pathways to conduct problems. Specifically, we predicted that bullying would be more strongly associated with positive attitudes towards bullying in those low on victimization. In contrast, we predicted that bullying would be more strongly associated with problems in emotional regulation and peer problems in those high on victimization. In testing the predictions related to emotional regulation, we assessed sadness and anger expression separately and we measured emotional expression separately from the child's self-perceptions of whether or not he or she can control this display (i.e., emotional inhibition). All of these predictions were designed to determine if the correlates of bullying were dependent on the level of victimization and to determine if they were similar to the correlates that have been reported for conduct problems and their dependence on the level of CU traits. Finally, we also

tested whether these associations with bullying would remain after controlling for conduct problems. We predicted that the associations of the social, behavioral, and emotional variables with bullying would not remain statistically significant after controlling for conduct problems, suggesting that the associations were largely due to shared variance between bullying and conduct problems and supporting our contention that bullying might best be considered as one part of the broader construct of conduct problems.

Methods

Participants

Participants were students in the fourth through seventh grades recruited from four semi-rural public schools located in the southeastern U.S as part of an evaluation of a school-wide anti-bullying program. All of the schools in the study were Title I schools, meaning that the majority of students (66 %) were from low-income households and received free or reduced lunches. Students from special education classes were excluded. Parental consent was returned for 349 (70 %) of approximately 500 eligible students. Of the 349 students, 65 did not participate due to absences, failure to provide assent, or incomplete forms, resulting in the final sample of 284. Participants' ages ranged from 9 to 14 years old (mean age = 11.28, SD = 1.82). Half of the participants identified their ethnicity as Caucasian (50.4 %), 39.4 % as African-American, 6.0 % as American-Indian, 3.2 % as Hispanic or Latino, and 1.1 % as Asian or Pacific Islander. Girls made up 54.2 % of the sample. This gender and ethnic composition of the sample was representative of the participating schools based on data published by the school system.

Measures-Independent Variables

Bullying A modified form of the Participant Role Scale (Sutton and Smith 1999) was used to measure bullying. The scale is a peer-report questionnaire consisting of 9 items assessing bullying, including items assessing bullying behavior (e.g., "How often does this classmate bully others?"), as well as items assessing whether the person reinforces (e.g., "How often does this classmate laugh when he or she sees (witnesses) others being bullied?") and assists (e.g., "How often does this student help bullies pick on classmates; maybe by catching or holding the target?") other bullies. Before the scale was administered, participants were read the following description of bullying which is based on Olweus' (2001) definition: "Bullying is when a student is mean to another student over and over again. The student who is being bullied is usually at a disadvantage, such as being smaller, outnumbered, or having fewer friends. Bullying includes

hitting, calling people names, telling stories about people, and ignoring people.” After the definition was read aloud, students were then instructed to rate each of their participating home-room classmates on a scale from 1 (never) to 3 (often) on each bullying item. A bullying score for each child was formed by calculating the mean peer ratings for each item. Past studies using this scale have found significant correlations between peer and self-reports of bullying (Sutton and Smith 1999) and between bullying scores and measures of peer rejection (Goossens et al. 2006) and aggression (Crapanzano et al. 2011).

Victimization The victimization variable was measured using a modified version of the Social Experiences Questionnaire, which assesses a child’s perception that he or she has been bullied by peers (SEQ-R; Crick and Bigbee 1998; Crick and Grotpeter 1996; Paquette and Underwood 1999). The SEQ-R was completed after the definition of bullying was provided to all students. The revision included the addition of two items to the original 10 item measure: “How often do other kids roll their eyes at you?” and “How often do other kids make mean faces at you to hurt your feelings?”. These items were included to more completely capture the types of relational aggression experienced by middle school children (Galen and Underwood 1997).¹

Thus, the revised measure consisted of 12 items that are rated on a 5-point Likert-type scale ranging from 1 (never) to 5 (always). Specifically, seven items are related to relational-victimization (e.g., “How often have other kids told lies about you so others will not like you?”) and five items related to overt-victimization (e.g., “How often do you get hit by bullies at school?”). Past studies using this measure have demonstrated that victimization scores are correlated with measures of depression, loneliness, and social anxiety (Crick and Grotpeter 1996).

Measures – Dependent Variables

CU Traits CU traits were measured using the CU subscale of the self-report version of the Antisocial Process Screening Device (APSD; Frick and Hare 2001). The CU subscale consists of 6-items (e.g., “I feel bad or guilty when I do something wrong” and “I am concerned about the feelings of others”) which are scored as 0 (not at all true), 1 (sometimes true), or 2 (definitely true). Scores from the CU subscale of the APSD have demonstrated significant stability over a 3-year period

¹ The victimization scale was developed to include both relational victimization and overt victimization and past research has supported its use as a total scale (Crick and Bigbee 1998; Crick and Grotpeter 1996; Paquette and Underwood 1999). In the current sample, we repeated analyses with the relational and overt victimization items separately and the results were very similar, with the exception that the correlation between anger expression and overt victimization reached statistical significance.

(Muñoz and Frick 2007) and scores from this subscale have been associated with more severe and stable conduct problems and with measures of reduced emotional reactivity (Frick et al. 2005; Kimonis et al. 2006).

Conduct Problems The Youth Symptom Inventory-4 was used to measure conduct problems (YI-4; Gadow and Sprafkin 2000). The YI-4 is a 26-item self-report measure assessing symptoms of Conduct Disorder and Oppositional Defiant Disorder. In a sample of 239 clinic-referred youth (11–18 years), the YI-4 demonstrated good reliability and discriminated children with conduct disorders from those without conduct disorders (Gadow et al. 2002). Importantly, the YI-4 includes items related to aggression (i.e., “I threaten to hurt people”, “I start physical fights”, “I force people to give me their money or things”, “I try to physically hurt people”, “I use a weapon when I fight”). However, none of these items uses the term “bullying” nor does it include in their description the repeated instances against a disadvantaged victim that are included in the definition of bullying. In short, the YI-4 conduct problem measure includes general aggression items but not items specific to bullying.

Attitudes Towards Bullying A measure of positive attitudes towards bullying was created from the Peer Experiences Questionnaire (Vernberg et al. 1999). Items were rated on a 4-point Likert-type scale ranging from 1 (don’t agree at all) to 4 (completely agree). For the current study, the 4-item “aggression pays” subscale was used because it assesses beliefs that bullying leads to positive outcomes (e.g., “Bullies get what they want from other students;” “Students get respect when they boss other students around”). Previous studies have indicated that this subscale is associated with aggressive behaviors and negative affect (Dill et al. 2004; Vernberg et al. 1999).

Perceived Peer Support To measure perceived peer support, the Receipt of Prosocial Behaviors subscale of the Social Experiences Questionnaire (Crick and Bigbee 1998; Crick and Grotpeter 1996) was used. The subscale consists of five items assessing perceived social support, rated on a 5-point Likert-type scale ranging from 1 (never) to 5 (always) (e.g., “How often does another student give you help when you need it?” “How often do other students try to cheer you up when you feel sad?”). In a previous study, this subscale was correlated with externalizing behavior ($r=-0.26, p<0.05$), internalizing behavior ($r=-0.23, p<0.05$), victimization ($r=-0.25, p<0.05$), sense of control ($r=0.25, p<0.05$), and problem solving ($r=0.23, p<0.05$) (Terranova 2009).

Anger and Sadness Several subscales from the Children’s Emotion Management Scale (Zeman et al. 2001) were used to assess a child’s expression of sadness and anger

and a child's perceived ability to regulate (i.e., inhibit) these negative emotions. Specifically, the scale distinguishes between sadness and anger and it distinguishes between perceived problems inhibiting emotion (e.g., "I get mad inside, but I don't show it") and self-reported expression of negative emotions (e.g., "I attack whatever it is that makes me mad"). Thus, it includes two 4-item subscales assessing sadness and anger inhibition and two 3-item subscales measuring sadness and anger expression. In a community sample of Caucasian, middle-class school-boys, both anger subscales and the sadness expression subscale were correlated with internalizing symptoms (Zeman et al. 2001, 2002).

Procedures

The current study was approved by a university Institutional Review Board prior to data collection. Students were sent home with letters including attached consent forms for parents to complete. If parental consent was given, students were asked to complete assent forms before participating. Students who did not provide assent or parental consent were allowed to take part in an alternative activity during data collection. All measures were included prior to the school's implementation of a bullying prevention program. All measures were administered in small groups of students during class periods that did not conflict with school instruction (e.g., study period). Questionnaires were read out loud to all students in order to control for reading ability. To control for privacy, students were seated far apart from one another and provided cover sheets to conceal their answers.

Results

Descriptive Analyses

The internal consistency and distributions for the variables in the current study are presented in Table 1. The distributions show that the variables were relatively normally distributed, with the exception of conduct problems, which showed a moderate positive skewness as would be expected in a non-referred school sample.² Also, correlations of the main study variables with key demographic variables (i.e., age, gender, and ethnicity) were examined and results indicated that age was positively related to bullying, CU traits, conduct

problems, attitudes towards bullying, and anger expression but negatively related to victimization and perceived peer support. Gender (coded 0=male and 1=female) was positively associated with perceived peer support and negatively associated with bullying and conduct problems. Ethnicity (coded 0=ethnic minority and 1=Caucasian) was negatively related to bullying, conduct problems, and anger expression.

Zero-Order Correlations

Table 2 shows the zero-order correlations for the variables used in the multiple regression analyses. Bullying and victimization both showed a positive correlation with conduct problems. However, bullying, but not victimization, was positively associated with CU traits, anger expression, and positive attitudes towards bullying and negatively associated with perceived peer support. In contrast, victimization, but not bullying, was positively associated with sadness inhibition and sadness expression.

Multiple Regression Analyses

The primary analyses were a series of multiple regression analyses to determine the main and interactive effects of bullying and victimization on the various social, behavioral, and emotional variables. Prior to the analyses, the independent variables (i.e., bullying and victimization) were centered using sample means. Two multiple regression analyses were conducted for each dependent variable. In the first (Model 1), demographic variables (i.e., age, gender, ethnicity), bullying, victimization, and the interaction between bullying and victimization were all entered simultaneously. In Model 2, conduct problems was added as a predictor with demographic variables, bullying, victimization, and the interaction between bullying and victimization to determine what associations with bullying remained after controlling for the level of conduct problems. When a statistically significant interaction was found, the form of the interaction was further examined using the post hoc probing methods recommended by Holmbeck (2002). Specifically, this procedure uses the regression equation derived from the full sample to estimate predicted values for the dependent variable one standard deviation below and one standard deviation above the mean. Table 3 summarizes the results of the multiple regression analyses.

Social and Behavioral Correlates of Bullying As noted in Table 3, both bullying and victimization were positively and uniquely associated with conduct problems ($\beta=0.37$, $p<0.001$ and $\beta=0.18$, $p<0.01$, respectively), controlling for demographic variables. Further, there was no significant interaction between bullying and victimization in predicting conduct problems. In contrast, bullying was significantly associated with CU traits after controlling for victimization and

² Given that the conduct problems variable was highly skewed, all analyses were run with both the raw variable and a log transformed variable. Results were very similar for both the raw and transformed variable with the only difference being that the correlation between conduct problems and anger inhibition reached statistical significance using the transformed variable. Thus, the results are reported using the raw variable.

Table 1 Distributions of Study Variables

Variable	<i>M</i>	<i>SD</i>	<i>Min-Max</i>	<i>S</i>	<i>K</i>	α
Independent Variables						
Bullying	13.48	3.31	9.05–22.11	0.63	-0.60	0.97
Victimization	26.56	11.79	12–60	0.86	0.22	0.93
Dependent Variables						
Callous-unemotional traits	3.59	2.12	0–11	0.97	1.11	0.50
Conduct problems	38.09	8.92	26–82	1.86	5.70	0.89
Attitudes towards bullying	7.45	2.99	4–16	0.70	-0.26	0.68
Perceived peer support	16.54	5.09	5–25	-0.10	-0.60	0.87
Sadness inhibition	7.89	2.20	4–12	0.00	-0.73	0.71
Sadness expression	4.92	1.47	3–9	0.41	-0.56	0.50
Anger inhibition	8.64	2.17	4–12	-0.22	-0.59	0.71
Anger expression	5.04	1.56	3–9	0.46	-0.48	0.56

Note. *M* Mean; *SD* standard deviation; *S* skewness; *K* kurtosis; α = internal consistency for each variable measure
Standard error for *S*=0.15; Standard error for *K*=0.29

demographic variables ($\beta=0.21$, $p<0.01$) but victimization was not. However, this main effect for bullying was qualified by an interaction between bullying and victimization that approached significance ($\beta=-0.11$, $p=0.08$) when controlling for demographic variables only (Model 1) and reached significance when controlling for conduct problems (Model 2: $\beta=-0.12$, $p<0.05$). This interaction term accounted for an additional 1.4 % of variance in CU traits, over the variance accounted for by the conduct problems, demographic covariates, and the main effects of bullying and victimization. The form of this interaction is provided in Fig. 1 and indicates that, as predicted, bullying was significantly associated with CU traits for those low on victimization ($\beta=0.39$, $p<0.001$) but not for those high on victimization ($\beta=0.11$, $p=ns$).

When attitudes towards bullying was used as the dependent variable, there was a main effect for both bullying ($\beta=0.19$, $p<0.01$) and victimization ($\beta=0.14$, $p<0.05$) after controlling for demographic variables. Thus, both bullying and victimization were uniquely associated with more positive attitudes towards bullying, although these main effects did not remain significant after controlling for level of conduct problems. For peer support, only a main effect (negative) of victimization ($\beta=-0.14$, $p<0.05$) emerged as significant, indicating that higher levels of victimization was associated with less perceived peer support. Importantly, and contrary to predictions, the interaction between bullying and victimization was not significant for either variable.

Emotional Correlates of Bullying The results of analyses using scores from the measure of emotional expression and inhibition as the dependent variables are also summarized in Table 3. For both sadness inhibition ($\beta=0.15$, $p<0.05$) and

sadness expression ($\beta=0.20$, $p<0.01$), there were main effects for victimization after controlling for bullying and demographic variables but no main effects for bullying and no significant interaction. In contrast, neither bullying nor victimization was significantly related to anger inhibition but there was a significant main effect of bullying for anger expression ($\beta=0.26$, $p<0.001$), after controlling for victimization and demographic variables. Thus, bullying was not associated with self-reported problems in controlling anger (i.e., inhibition) but was associated with self-reported displays of anger (i.e., expression). However, contrary to predictions, there was no significant interaction between bullying and victimization in predicting anger expression or inhibition.

Discussion

The results of the current study extend existing research on bullying and victimization and provide a link between this research and studies investigating the different developmental pathways to serious conduct problems based on the level of CU traits. Specifically, both bullying and victimization were positively associated with serious conduct problems, consistent with past work (Camodeca et al. 2002; Pellegrini et al. 1999; Salmivalli and Nieminen 2002). Importantly, our results suggest that, although the association with bullying ($r=0.48$, $p<0.001$) was somewhat stronger than the association with victimization ($r=0.16$, $p<0.01$), the association between conduct problems and victimization remained significant even controlling for the effects of bullying. In addition to the substantial correlation between bullying and conduct problems, the association between bullying and other variables (e.g., positive attitudes towards bullying, anger expression) did not

Table 2 Zero-Order Pearson Correlations of Main Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Demographic Variables													
1. Age	—	-0.02	-0.20**	0.40***	-0.24***	0.16**	0.25***	0.13*	-0.21***	0.04	-0.07	0.11	0.16**
2. Gender		—	-0.09	-0.14*	-0.02	-0.12	-0.21***	-0.11	0.13*	-0.05	0.05	0.04	-0.07
3. Ethnicity			—	-0.29***	-0.02	-0.11	-0.22***	-0.08	-0.00	-0.03	-0.05	-0.10	-0.18**
Independent Variables													
4. Bullying				—	0.01	0.25***	0.48***	0.24***	-0.19**	0.03	0.04	0.08	0.32***
5. Victimization					—	0.04	0.16**	0.11	-0.09	0.14*	0.21***	-0.06	0.09
Dependent Variables													
6. Callous-unemotional traits						—	0.29***	0.05	-0.28***	0.03	0.05	0.06	0.31***
7. Conduct problems							—	0.42***	-0.24***	0.04	0.25***	0.12	0.50***
8. Attitudes towards bullying								—	0.02	0.09	0.09	0.04	0.27***
9. Perceived peer support									—	0.01	-0.08	-0.00	-0.20**
10. Sadness inhibition										—	0.05	-0.31***	0.07
11. Sadness expression											—	0.00	0.27***
12. Anger inhibition												—	0.25***
13. Anger expression													—

Note. * $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Table 3 Multiple Regression Analyses Testing the Main and Interactive Effects of Bullying and Victimization

Variable	Model 1				Model 2			
	Bullying	Victimization	Bul × Vic	R ²	Bullying	Victimization	Bul × Vic	R ²
	Covariates: age, gender, ethnicity				Covariates: age, gender, ethnicity, conduct problems			
	Standardized beta				Standardized beta			
CU traits	0.21**	0.05	-0.11 ^a	0.09***	0.13	0.01	-0.12*	0.12***
Conduct problems	0.37***	0.18**	0.09	0.30***	–	–	–	–
Attitudes to bullying	0.19**	0.14*	0.11	0.09***	0.05	0.07	0.08	0.19***
Peer support	-0.11	-0.14*	0.05	0.09***	-0.06	-0.11	0.07	0.11***
Sadness inhibition	-0.01	0.15*	-0.03	0.03	-0.01	0.15*	-0.03	0.03
Sadness expression	0.05	0.20**	0.03	0.05*	-0.06	0.15*	0.00	0.11***
Anger inhibition	0.04	-0.04	-0.03	0.02	-0.01	-0.06	-0.04	0.03
Anger expression	0.26***	0.10	0.05	0.12***	0.09	0.02	0.01	0.26***

Note: ^a $p=0.08$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$

CU Callous-unemotional; Bul × Vic = Bully × Victimization; Attitudes to bullying = Attitudes towards bullying; Peer support = Perceived peer support

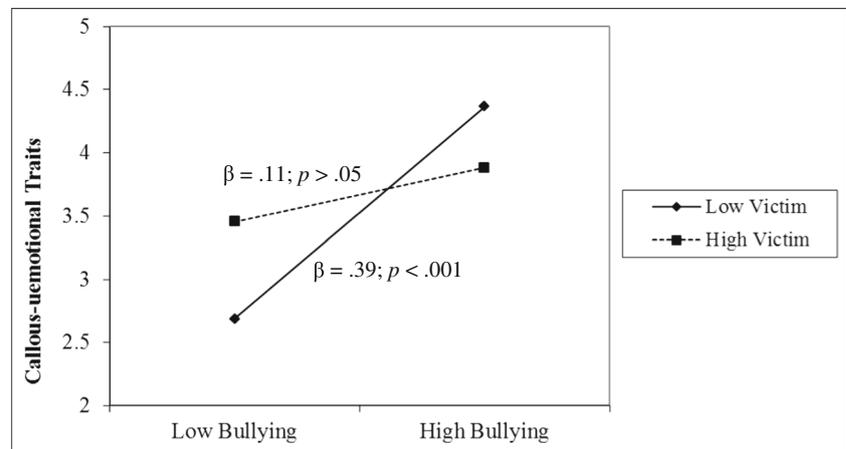
remain after controlling for conduct problems, suggesting that these correlates of bullying are largely due to their shared variance with conduct problems. These findings support our contention that bullying may be best considered as part of the larger construct of conduct problems and that causal theory and treatment approaches should be guided by the more extensive research on childhood conduct problems.

This contention is further supported by our results indicating that the differences in the correlates of bullying based on the level of victimization are consistent with research on the differences in correlates of conduct problems based on the level of CU traits. Specifically, bullying ($r=0.25$, $p<0.001$) but not victimization ($r=0.04$, $p=ns$) was significantly associated with CU traits. Further, the association between bullying and conduct problems was not moderated by the level of victimization, whereas the association between bullying and CU traits was only significant at low levels of victimization ($\beta=0.39$; $p<0.001$; see Fig. 1). This moderating role of victimization in

the association between bullying and CU traits is consistent with past work suggesting that bullies who have not been significantly victimized show less empathy towards their victims (Gini et al. 2011). Further, this finding suggests that this callous-lack of empathy towards others may play an important role in their behavior that harms others. Moreover, this finding suggests that factors that have been implicated in the development of CU traits, such as deficient emotional arousal to distress cues in others, punishment insensitivity, or cognitive attitudes that overestimate the positive consequences of their aggression towards others (Frick et al. 2014) could also help to explain bullying behavior for youth low on victimization.

Importantly, a number of other characteristics were also associated with bullying, although these associations were not moderated by the child's level of victimization as predicted. Specifically, bullying was associated with attitudes that are accepting of bullying, consistent with past research (Williams and Guerra 2007). Bullying was also associated with less

Fig. 1 Figure shows a significant interaction between bullying and victimization in the prediction of callous-unemotional traits



perceived support from peers, again consistent with past research (Cook et al. 2010; Perren and Alasker 2006). What was somewhat unexpected was the absence of any moderating role of victimization in these associations, especially the latter finding given past work suggesting that bullies who are high on victimization are more rejected by peers than bullies who have not been victimized (Cairns et al. 1988; Cook et al. 2010; Pellegrini et al. 1999; Perren and Alasker 2006). This unexpected finding may be a result of the current study using a measure of perceived peer support, rather than a measure of social skills or peer rejection. Thus, children who bully may perceive less support from peers, irrespective of whether their peers view them as unskilled and without friends (Muñoz et al. 2008b).

An interesting and important area of divergence in the correlates of bullying and victimization was on the measure of emotional expression and emotional inhibition. First, victimization, but not bullying, was associated with higher rates of self-reported expression of sadness and more difficulty controlling sadness. These findings are consistent with past studies reporting an association between victimization and internalizing problems (Arseneault et al. 2006; McLaughlin et al. 2009). In contrast, bullying, but not victimization, was associated with higher levels of anger expression. These findings are novel and have several important implications. Specifically, they suggest that both bullying and victimization are associated with problems in emotional regulation but victimization is more specific to sadness, whereas bullying is more specific to anger. Further, the findings for bullying were specific to anger expression. That is, bullying was positively associated with reports of more anger expression but not with self-reports of perceived problems regulating this anger. Again, these findings are consistent with past research on childhood conduct problems suggesting that children and adolescents who show proactive aggression (Hubbard et al. 2002) and CU traits (Muñoz et al. 2008a) may look angry but this display of anger is used to intimidate or dominate others, rather than reflecting a problem regulating emotional arousal.

All of these results need to be interpreted within the context of several study limitations. First, the study design is cross-sectional so inferences cannot be made about causal connections between the independent and dependent variables. For example, the association between bullying and CU traits could reflect the role of a callous-lack of empathy in causing bullying or it is also possible that repeated instances of bullying could lead a child to become more callous to others' distress over time. Second, the measure of bullying was based on peer report, whereas the measure of victimization used self-report. This methodology was used to select the optimal informant for each construct, with peer-report of bullying providing the best assessment of behaviors that might harm others, yet may not be viewed as harmful by the bully, and self-report providing the best assessment of children's perceptions of whether they had been victimized by others, irrespective of whether others view them as victims (Sutton and Smith 1999). However, this methodology makes it

possible that some of the associations with victimization could have been inflated by shared method variance. Third, this study was conducted in a normal middle school setting, where the vast majority of bullying takes place (Nansel et al. 2001; Olweus 1991). However, participation in the study was voluntary and required active parental consent, both of which reduced the participation rate. Importantly, the participation rate in the current study is consistent with the rate of active parental consent found in research conducted in other schools characterized by a high rate of poverty (Esbensen et al. 2008). In addition, a large study of 13,195 students from 143 high schools did not find that participation rates differed based on the students' aggressive behavior (Easton et al. 2004). Further, the gender and ethnic composition of the sample was representative of the participating schools according to school system data. Fourth, the sample consisted of ethnically diverse students in a semi-rural public school system. Thus, although a strength of the current study was that the sample was more ethnically diverse than samples used in much of the past research studying bullying and victimization (Gini 2006; Goossens et al. 2006; Salmivalli et al. 1998), it is not clear how well the current findings would replicate to more urban school systems. Finally, some of the measures showed only modest internal consistency, especially those with relatively small numbers of items. Importantly, these estimates were similar to those reported in past research. For example, the internal consistency for the 6-item measure of CU traits was modest ($\alpha=0.50$) but this level of reliability is consistent with past research reporting coefficient alphas ranging from 0.50 to 0.68, yet reporting findings that support its temporal stability and correlations with important outcomes (Muñoz and Frick 2007).

Within the context of these limitations, the findings of the current study have a number of important implications for both research and practice. Most importantly, they suggest that considering the separate and interactive effects of bullying and victimization could help to bridge the research on causes of bullying with research on the causes of serious conduct problems more generally. For example, if our finding that bullying is more strongly associated with CU traits at low levels of victimization is replicated in a longitudinal study, this could suggest that the causes of bullying for those with minimal victimization experiences may be a) different from those who are also victimized and b) related to similar causal processes associated with the development of serious conduct problems in those with elevated CU traits (Frick et al. 2014). Further, these youth may respond to interventions that have been shown to be effective for children with elevated CU traits, which are somewhat different from the interventions that work for children with conduct problems who do not show elevated CU traits (Frick 2012). Our findings also suggest that research studying the emotional correlates of bullying and victimization could also be important for advancing research and treatment, but only if the measurement considers sadness and anger separately and considers the expression of emotion and the ability to inhibit the

emotion separately. Specifically, our findings suggest that sadness is more specific to victimization and anger is more specific to bullying. It is possible that the former association reflects the psychological consequences of victimization, whereas the latter reflects problems in emotional expression contributing to bullying. However, as noted above, such directional interpretations require further study using longitudinal designs. Finally, our study suggests that bullying may be associated with high rates of anger expression but not problems in a child's ability to regulate strong emotional arousal. Although this finding needs to be replicated in samples using other methodology that does not rely on self-report (Muñoz et al. 2008b), it does suggest that interventions targeting anger to reduce bullying may need to focus more on reducing the positive consequences for bullying for many children who bully, rather than focusing on methods to reduce and control angry arousal (Menesini et al. 2003).

Conflict of Interest The authors declare that they have no conflict of interest.

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