



# Fearful victims and fearless bullies? Subjective reactions to emotional imagery scenes of children involved in school aggression



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## ABSTRACT

Being aggressive has been related to fearlessness, low empathy and premeditated antisocial behaviors. The current study examined how school bullies and victims respond to affective situations presented through imagery. It was hypothesized that victims would perceive fear imagery as more fearful than bullies, demonstrating their proneness to fear and high behavioral inhibition. Bullies were expected to perceive fear imagery as less fearful and experience less negative affect, based on their callous-unemotional characteristics. Children participated in a tone-cued imagery experiment during which they imagined for 8 s twelve pre-normed scripts describing fear, anger, joy and pleasant relaxation. Children rated their experienced emotions of fear, anger, joy and sadness for each scene. Bullies responded with low levels of fear to fear imagery and across emotion types and reported overall higher positive affect, even during provocative anger scenes. In contrast, victims responded with higher fear, anger and sadness. The varied emotional responses appeared to be partly explained by group differences in behavioral inhibition, which was high in victims. Results are discussed in light of aggression theories and potential interventions.

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## 1. Introduction

School bullying involves repeated physical (hitting, kicking) and non-physical (isolating, gossiping; Karatzias, Power, & Swanson, 2002) aggression toward children who are perceived as weaker and less dominant, with negative consequences for both perpetrators and victims (Ttofi, Farrington, & Lösel, 2012). Individual differences on how children encode and process emotionally evocative situations during social interactions, interpret and respond to the behaviors of others, and their motivation toward obtaining rewards and avoiding punishment play a significant role in school aggression (e.g., Crick & Dodge, 1996).

Aggressive children tend to be hyper-vigilant to hostile cues and attribute hostile intentions to others (Dodge, Price, Bachorowski, & Newman, 1990). Differences in emotions, in addition to interpretations, are also important, as some children feel positive after engaging in aggression (Arsenio & Lemerise, 2001), which may relate to their poor emotional empathy towards the pain of others and difficulty in recognizing expressions of fear and sadness (Blair, 1999). Motivationally, aggressors show resting hypo-arousal, documented by heart rate and skin conductance measures (Raine, 2002; Scarpa, Tanaka, & Chiara Haden, 2008),

and may engage in aggression for sensation and arousal seeking purposes (Wilson & Scarpa, 2011). Aggressive children also demonstrate little fear for negative consequences to self and others, and low sensitivity to punishment (Dierckx et al., 2014). Emotion processing and regulation difficulties characterize both children who display aggression (Beauchaine, Gatzke-Kopp, & Mead, 2007; Fanti, Panayiotou, Lazarou, Georgiou, & Michael, in press) and children with internalizing difficulties (Beauchaine, 2001) who are often their victims. For example, victims show more sadness in unpleasant situations (e.g., Boulton & Underwood, 1992) but it is unclear if this is a cause or an outcome of victimization (Camodeca & Goossens, 2005). To the extent that emotional responses represent action dispositions (Lang, 1979), understanding the emotions of bullies and victims in specific contexts can elucidate the processes involved in bullying, the aim of this investigation.

As a form of aggression, bullying is one of the DSM-5 criteria for conduct disorder. For this reason, research on children and adolescents displaying conduct problems (CP) is relevant to bullying. A subgroup of these youth are characterized by high levels of Callous-Unemotional (CU) traits, which include lack of remorse and empathy, callous use of others, shallow emotions (Fanti, 2013; Moffitt et al., 2008) and are considered precursors of adult psychopathy (Essau, Sasagawa, & Frick, 2006). CP children high on CU-traits tend to be fearless and insensitive to punishment (e.g., Frick & Morris, 2004) and may have been poorly socialized because

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of their insensitivity to the distress of others (Frick & Viding, 2009). They are calculated and premeditated in their aggression to receive particular rewards (Roose, Bijttebier, Claes, & Lilienfeld, 2011) rather than angry and reactive to provocation (e.g., Hughes, Moore, Morris, & Corr, 2012). CP children *without* CU-traits tend to be anxious, with intense, uncontrolled emotions. Their aggression is mostly reactive, hot-tempered and impulsive (Frick & Viding, 2009).

These two profiles of aggressive children, which reflect the new specifier in the DSM-5 criteria for Conduct Disorder, i.e., with or without Low Prosocial Emotions, seem to reflect the characteristics of children involved in bullying: bullies typically hold a positive attitude towards violence and are low in anxiety and fear, resembling CP + CU youth, whereas victimized children who become bullies themselves (bully/victims) are disruptive and impulsive, with intense emotional reactions that may be reinforcing to their perpetrators, resembling CP-only youth (Kokkinos & Panayiotou, 2004; Schwartz, 2000). Bully/victims tend to have symptoms of internalizing pathology and high distress, display impulsive and retaliatory aggression, and demonstrate poor emotional regulation (O'Brennan, Bradshaw, & Sawyer, 2009; Schwartz, 2000). On the other hand, victims are passive, submissive, anxious and insecure (Salmon, James, & Smith, 1998). Like bully/victims, they show increased reactivity to threat and high amygdala activation (McCrory et al., 2011; Pollak, 2008) and are prone to anxiety and depression (Idsoe, Dyregrov, & Idsoe, 2012; Meltzer, Vostanis, Ford, Bebbington, & Dennis, 2011).

Therefore, prior evidence indicates that traits related to fear, anxiety, behavioral inhibition (e.g., McNaughton & Gray, 2000) and callousness may relate to the behavior of bullies, victims and bully/victims, affecting how they perceive, interpret and respond to emotional situations. These differences, in combination with other risk factors including genetics and socialization (Ball et al., 2008; Schwartz, Dodge, Pettit, & Bates, 1997), may predict the different roles children adopt in the bullying phenomenon.

## 2. Current study

This investigation examines (a) difference in CU-traits and behavioral inhibition (as an index of fearfulness and anxiety) between bullies and victims and (b) how bullies, victims and bully/victims differ in their emotional responses. It was hypothesized that bullies will respond with less fear and anger, in situations meant to provoke these emotions, due to their callousness and un-emotionality. In contrast, victims and bully/victims were expected to respond with greater fear and negative valence across emotional situations due to their proneness to intense negative affect.

To address these questions the well-established tone-cued affective imagery paradigm (e.g., Panayiotou, Witvliet, Robinson, & Vrana, 2011) was used to evoke emotions, where participants memorize and briefly imagine scenes, pre-normed to reflect specific emotions. Imagery has been extensively used to study individual differences in emotional responses (Cuthbert, Vrana, & Bradley, 1991) because it activates associative networks in memory, evoking all aspects of emotions, physiology, subjective experience and action dispositions (Lang, 1979). Group differences in fearful, angry, joyful and sad reactions to emotional situations and the degree to which these are interpreted by differences in CU-traits and BIS are examined. Understanding how perpetrators and victims respond affectively can clarify why they behave aggressively or submissively to others and elucidate the mechanisms that perpetuate bullying. Such knowledge can inform interventions that address how children process and respond to information in their social environment.

## 3. Method

### 3.1. Participants

The sample was drawn from screening 943 children (518 female), from 21 schools in Cyprus (5th–8th grade). Schools and classes were selected randomly from the Nicosia and Larnaca districts. Children whose parents responded to invitation by providing informed consent were administered a questionnaire package completed at school in group format. From this screening sample, 91 children (37 females;  $Mage = 11.90$  at time of experiment) selected as bullies ( $N = 13$ ), bully-victims ( $N = 15$ ), victims ( $N = 15$ ) and control ( $N = 48$ ) participated in the experiment. Children were assigned to groups based on their responses to the Revised Bullying and Victimization Questionnaire (BVQ; Olweus, 1991). They were identified as bullies if they scored above one SD from the mean of the bullying distribution and below average on the distribution of victimization scores ( $n = 27$ ). They were categorized as victims if they scored above one SD from the mean of the victimization distribution and below average on the bullying distribution ( $n = 35$ ); as bully/victims if they scored above one SD from the mean of both distributions ( $n = 33$ ) and as controls if they scored below the mean on both distributions ( $n = 754$ ), following prior research (Fanti, Frick, & Georgiou, 2009). Only children whose parents at screening consented to participation in the experiment were contacted. For controls, a random sample was selected and contacted for participation in the experiment. Univariate ANOVAs verified that the groups differed in bullying and victimization: bullies and bully/victims scored similarly and significantly higher on bullying than both victims and controls,  $F(3,80) = 60.91$ ,  $p < .001$ ,  $\eta^2 = .69$ . Victims and bully/victims reported significantly more victimization than bullies and controls and did not differ between them,  $F(3,80) = 93.04$ ,  $p < .001$ ,  $\eta^2 = .78$ .

### 3.2. Measures and materials

CU-traits were assessed with the child self-report version of the 24-item Inventory of Callous-Unemotional traits (ICU; Frick & Morris, 2004; e.g., "I do not feel remorseful when I do something wrong"), rated on a 4-point Likert-scale (0 = not at all; 3 = definitely true). The ICU is valid for community and incarcerated youth in Cyprus and the U.S. (Fanti et al., 2009; Kimonis et al., 2014). In the screening sample Cronbach's  $\alpha$  was .82. Of the screened children, 17% scored one SD above the mean on CU-traits. Within selected groups, 16/27 bullies scored above 1SD in CU, 4/35 victims, and 18/33 of bully/victims ( $\chi^2(3) = 65.38$ ,  $p < .001$ ), demonstrating the frequency of CU-traits among children who bully others and their rarity among victims.

**Behavioral inhibition/activation.** The behavioral inhibition system & behavioral activation system scales for children (Muris, Meesters, de Kanter, & Timmerman, 2005) is a twenty-item version of Carver and White's (1994) BIS/BAS-scales. Only the seven BIS items, scored on a 4-point scale (0 = not true, 3 = very true), were used in analyses (e.g., "I feel pretty upset when I think that someone is angry with me"). Alpha for the screening sample was .70.

**Affective imagery.** Stimulus materials were 12 imagery scripts (three for each of four emotions: fear, joy, anger and pleasant relaxation). They were selected as the best representatives of each emotion among 32 scripts normed on an independent sample of children and adolescents ( $N = 61$ ; 39 females;  $Mage = 12.2$ ) on valence and arousal and specific emotion described. Scripts were adapted for use with children from scripts described previously (Panayiotou, Brown, & Vrana, 2007; Panayiotou et al., 2011) and standardized in Greek (Panayiotou, 2008). Scripts consisted of one sentence, a mean of 24 words and references to physiological

and behavioral responses to elicit efferent activation of emotion response systems (Lang, 1979).

**Subjective emotion ratings.** Participants rated their emotional reactions to each imagery script on 1–7 Likert-type scale (1 = not at all, 7 = very much), assessing the degree to which specific emotions, namely joy, sadness, anger and fear were experienced during each script.

### 3.3. Procedure

The study received approval from the Cyprus National Bioethics Committee, parents provided written and children oral consent. At the lab, children were seated in a reclining chair and were explained the procedure. Each script was randomly assigned to a high or low-pitched tone presented over earphones that cued participants to start imagery for 8 s until the next tone. Then, a medium tone signaled relaxation for 24–48 s when participants had to “clear their minds” and relax by silently repeating the word ‘one’ until the next tone. High and low tones were presented in a quasi-random order. Imagery occurred in 6 blocks of two scripts. Before each block, participants were given two cards, one with a positive (e.g., joy) and one with a negative script (e.g., fear) to memorize and retrieve when cued. They were asked to create vivid personal images as if the scenes actually happened to them. Following each block, participants rated scripts on the experienced emotions.

### 3.4. Statistical analyses

First, correlations between bullying and victimization, personality traits, and emotional reactions were examined. To address differences between children who bully and children who experienced victimization in (a) personality traits and (b) emotional reactions, participants were grouped into two groups: bullies and bully/victims formed the high bullying group (controls and victims were the low bullying group), while victims and bully/victims formed the high victimization group (controls and bullies formed the low victimization group). This transformation allowed for greater statistical power and was justified by the similar scores of bullies and bully/victims, and victims and bully/victims on bullying and victimization scores respectively (see above). Examining the interaction of these two dichotomous variables permitted for comparisons between the four original groups, bullies, bully/victims, victims and controls. Groups were compared on a) mean emotional reactions of fear, joy, sadness and anger across scenarios to address their general affectivity, irrespective of imagined situation and b) context-appropriate emotional reactions of fear, anger and joy in respective scenarios. Finally, ANCOVAs assessed the role of CU traits and BIS in explaining group differences in emotional reactions.

## 4. Results

### 4.1. Bivariate correlations

Table 1 shows correlations between bullying and victimization, treated as continuous variables, CU-traits, BIS and emotional reactions. Bullying was positively correlated with CU-traits and negatively with BIS; victimization was positively correlated with BIS. Bullying was positively related to greater joy in anger and marginally ( $p = .06$ ) with joy across situations. Both bullying and victimization were associated with more anger in Pleasant Relaxation while victimization was related to greater overall anger and anger during Joy and Pleasant Relaxation scenarios. Victimization was

**Table 1**

Bivariate correlations between bullying and victimization scores (continuous), traits, and emotional responses.

	Bullying	Victimization
Bullying		.19
BIS	-.23*	.35**
CU	.44**	-.14
Mean-fear	-.04	.38**
Mean-anger	.03	.33**
Mean-joy	.22	-.08
Mean-sad	-.04	.26*
Mean-fear in F	-.12	.19
Mean-joy in J	-.09	-.11
Mean-anger in A	.05	.22
Mean-fear in A	.02	.32**
Mean-fear in J	.17	.27*
Mean-fear in R	-.03	.07
Mean-joy in A	.29*	.05
Mean-joy in F	.19	-.04
Mean-joy in R	.05	-.05
Mean-anger in J	.12	.26*
Mean-anger in F	.06	.20
Mean-anger in R	.25*	.38**
Mean-sadness in A	-.11	.10
Mean-sadness in J	.20	.32**
Mean-sadness in F	-.02	.17
Mean-sadness in R	.15	.34**

Note: A = anger imagery, J = joy imagery, F = fear imagery, R = pleasant-relaxation imagery.

\*  $p < .05$ .

\*\*  $p < .01$ .

associated with greater overall fear and fear to Anger and Joy scenes, and with greater overall sadness and sadness during Joy and Pleasant Relaxation.

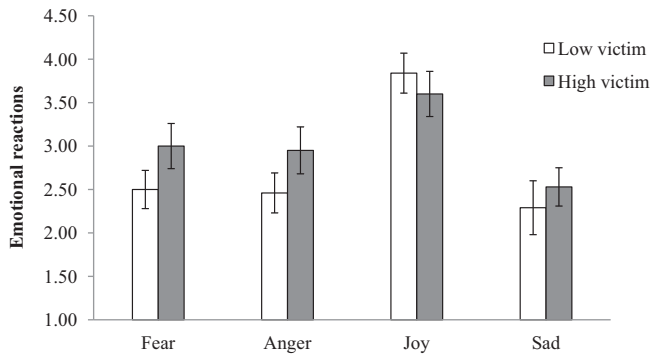
### 4.2. Group comparisons on assessed traits

A MANOVA examining group differences (high/low bullying, high/low victimization) in CU-traits and BIS resulted in a significant group effect of bullying,  $F(2,68) = 10.27, p < .001, \eta^2 = .23$ , Wilks' lambda = .77, and a marginal effect of victimization,  $F(2,68) = 2.40, p = .10, \eta^2 = .07$ , Wilks' lambda = .93. Post-hoc ANOVAs showed that bullies scored higher than children not engaging in bullying on CU-traits,  $F(1,69) = 19.48, p < .001, \eta^2 = .22$ , Cohen's  $d = 1.06$ . For BIS, there was a significant effect of bullying,  $F(1,80) = 7.74, p = .01, \eta^2 = .10$ , Cohen's  $d = .83$ , indicating that bullies scored lower than low bullying children. Additionally, a significant main effect of victimization showed that victims of bullying scored higher than non-victimized children,  $F(1,69) = 4.67, p = .03, \eta^2 = .06$ , Cohen's  $d = .51$ . No interaction effects were identified.

### 4.3. Group comparisons on general emotional reactions

Repeated measures ANOVAs conducted to examine the effects of groups on general emotions showed a significant effect of emotion,  $F(1.94,145.44) = 37.67, p < .001$ , partial  $\eta^2 = .33$ , indicating that emotional contexts elicited mean reactions of different strength. An emotion  $\times$  victimization interaction,  $F(1.94,145.44) = 3.95, p = .05$ , partial  $\eta^2 = .04$ ,  $\epsilon = .65$ , was also identified. Post-hoc comparisons indicated that those scoring high compared to those scoring low on victimization reported greater mean fear, Cohen's  $d = .45$  and mean anger, Cohen's  $d = .50$ , across situations, a medium effect size (Fig. 1). No other main or interaction effects were identified.

Next, BIS and CU-traits were entered separately as covariates in the repeated measures ANOVA. There was a marginal



**Fig. 1.** High and low victim differences in mean emotional reactions. Error bars represent 95% confidence-intervals.

BIS  $\times$  emotion interaction,  $F(3,70) = 2.20$ ,  $p = .09$ , partial  $\eta^2 = .09$ ,  $\varepsilon = .63$ , and a significant CU  $\times$  emotion interaction,  $F(3,59) = 3.80$ ,  $p = .02$ , partial  $\eta^2 = .16$ ,  $\varepsilon = .64$ , suggesting that both variables are significant covariates. With either covariate entered, the victimization  $\times$  emotion interaction was no longer significant indicating that both BIS and CU differences accounted in part for the effect of victimization on emotion ratings.

#### 4.4. Group comparisons on context-appropriate emotional reactions

A repeated-measures ANOVA tested group differences in specific responses of fear, anger, and joy to the respective stimuli. Similar to prior analysis, there was a significant effect of emotion,  $F(2,132.14) = 20.36$ ,  $p < .001$ , partial  $\eta^2 = .05$ ,  $\varepsilon = .99$ , and a significant victimization  $\times$  emotion interaction,  $F(5.76,132.14) = 3.14$ ,  $p = .05$ , partial  $\eta^2 = .04$ . High victims reported more fear during Fear scenes (Cohen's  $d = .39$ ) and more anger during Anger scenes than low victims (Cohen's  $d = .36$ ). Although the bullying  $\times$  emotion interaction was not significant, a planned contrast between the means of high and low bullying children was conducted for fear during fearful scenarios, given that fearful reactions of bullies are pertinent to the main study hypotheses. High bullies reported lower fear than low bullies (Cohen's  $d = .47$ , a medium effect size). Neither CU nor BIS showed significant interactions with emotion, although the emotion  $\times$  victimization interaction decreased to non-significance after entering these as covariates, suggesting that both traits explain in part group differences in the identified emotional reactions.

## 5. Discussion

This study examined subjective reactions to emotional situations by bullies and victims attempting to examine how each group differentially responds to affective contexts. As predicted, victimized children were more fearful than non-victims, both during fearful scenarios and across emotional contexts. Of interest is that victims experienced fear across situations, with victimization being correlated with greater fear even during Joy, indicating that fear is a paramount emotion that permeates most of their perceptions and reactions to emotional contexts. Results are in accord with research showing child victims to be anxious and fearful (e.g., Isolani, Salum, Osowski, Zottis, & Manfro, 2013), who perceive their environment as threatening and out of their control (Fredstrom, Adams, & Gilman, 2011). Such reactions are likely to make victims act submissively, fearfully and defensively (Perren & Alsaker, 2006), which may provoke further aggression by others. Whether they bring with them these fearful traits that make them vulnerable to bullying (Bernstein & Watson, 1997) or develop fear-

fulness after their exposure to aggression remains to be verified in longitudinal and genetic studies (Ball et al., 2008).

Victims also reported overall greater anger, across scenes, which suggests a general disposition to negative affectivity, potentially as a consequence of their experiences. This finding relates to evidence that victims are prone to depression (Brunstein Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007). In addition, their anger may make them reactive to provocation and may place some of them at risk for becoming bullies themselves as a form of retaliation (e.g., Ball et al., 2008). Differences between high and low victims in affective reactions seemed to be in part explained by their higher levels of BIS compared to children who had not experienced victimization.

In contrast, high compared to low bullying children reported less fear during fearful scenes, a trend which did not reach significance but with a medium effect size. This finding is in accord with accounts that childhood aggression and CP can be explained by a deficient defensive system and low arousal (Frick, Ray, Thornton, & Kahn, 2014; Raine, 2002). Correlations showed an association between bullying and joyful emotions during (provocative) Anger scenes, suggesting that children high in bullying may actually find such conflicts to be rewarding. Bullies, were less behaviorally inhibited, and similar to severely antisocial children were characterized by high CU traits, which are precursors and a significant risk factor for adult psychopathy and antisocial behavior. In contrast, victims were characterized by high BIS, a characteristic often associated with anxiety and fearfulness. Results, overall, highlight the importance of fearfulness for victims and fearlessness/unemotionality for bullies, indicating that this is a basic dimension to be seriously considered in the understanding of school aggression and in predicting and preventing future externalizing and internalizing outcomes. No significant interactions between victimization and bullying were observed for either traits or emotional reactivity, indicating unique effects of bullying and victimization irrespective of the co-occurrence between these behaviors in some children.

Strengths of this study include the use of a well-validated paradigm to induce emotion and the selection of a random and representative sample of children. In spite of the large population screening, the final experimental groups remained small, limiting the generalizability of findings, which should be replicated in larger samples, more diverse in the severity of these phenomena. Additional limitations include the fact that a specific measure of fearfulness was not included, and instead BIS that assesses both fear and anxiety was used. Finally, both traits and emotions were derived from the same informant, potentially leading to shared method variance effects. Future research should examine if the present findings pertain to forensic and clinical samples of aggressive or victimized children, as this study was specifically focused on school bullying.

When emotions are conceptualized as preparation for survival-related actions (Lang, 1979), examining emotional responses can elucidate how children interpret and respond to their world. Children who bully appear to be fearless reward seekers. These tendencies need to be taken into account in intervention programs, which may need to teach alternative behaviors for securing similar rewards, along with cultivating empathy (Olweus, 2003). Victims, tend to interpret their world as threatening, even in situations that do not imply immediate danger. The negative affectivity in emotional responses of victims may lead to submissive, passive or passive-aggressive reactions that may trigger further abuse. Victims may need to learn effective ways to cope with threats and their fearful emotions to enhance their competence and self-esteem. In this way, results from this study and others that investigate basic processes involved in bullying can help increase the effectiveness of interventions for this challenging social problem and elucidate the emotional characteristics of these children.



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