Title: Emotion Recognition Abilities and Empathy of Victims of Bullying or

Peer Rejection

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Emotion Recognition and Victimisation

Abstract

Objectives: Bullying is a form of systematic abuse by peers with often serious consequences for victims. Few studies have considered the role of emotion recognition abilities and empathic behaviour for different bullying roles. This study investigated physical and relational bullying involvement in relation to basic emotion recognition abilities, and empathic styles in children. Using the framework of the Social Information Processing model, it was expected that victims would have poor emotion recognition abilities, and that bullies would demonstrate low levels of empathy.

Methods: Data was collected from UK children (N = 373) aged 9-11 years who completed a bullying instrument, the Bryant Index of Empathy measurement, and the DANVA (Diagnostic Analysis of Nonverbal Accuracy) to assess emotion recognition abilities. Children were classified into physical and relational bullying roles (bully, victim, bully/victim neutral) for analytical purposes.

Results: While physical victims, bullies and neutrals differed little in their emotion recognition abilities, relational victims were particularly poor in recognising negative emotions of anger and fear in faces. No differences were found in empathy scores, according to bullying roles.

Conclusions: Children who are relationally victimised are poorer in understanding emotional information than bullies and non-involved children. In light of previous research that victims of bullying more frequently experience child abuse, future

interventions should consider the importance of emotion and social skills training for these vulnerable children.

Bullying behaviour is a common experience for a significant minority of children and adolescents. Children victimized by peers report experiencing more often harsh parenting and sibling abuse than those not involved in bullying (Wolke & Samara, 2004; Wolke & Stanford, 1999). Physical bullying is characterised by observable, externalised behaviours including being hit or beaten up, physical threats, blackmail, and nasty tricks. In contrast, relational forms of victimisation include more subtle indirect forms of behaviour including friendship withdrawal, untrue rumours, and social exclusion. Crick and colleagues argued that physical and relational behaviours loaded onto separate factors (Crick & Grotpeter, 1995), whilst some argue that there is some overlap between physical, verbal and relational forms of bullying (e.g. Archer & Coyne, 2005). Therefore, it is increasingly important to consider the possible overlap between physical and relational bullying.

The Social Information Processing Theory (SIP) offers a detailed six-stage model of how children process and interpret cues in social situations to arrive at competent behaviour (e.g. Crick & Dodge, 1994). Previous SIP research has concentrated on the biases and deficits that aggressors use in social situations, and has not considered in detail the SIP styles of victims. In particular, very little is known about the role of emotions and emotion recognition within a SIP framework. This has several implications both for victimisation and bullying perpetration. Being able to perceive and attribute emotions correctly is important for a child's social and cognitive development (e.g. Nowicki, Jr & Duke, 1994). How children become involved in various physical and relational bullying roles may be related to how well they are able to interpret the emotional states of their peers. Previous associations between

victimisation and poor social skills have been reported, but it remains unknown whether this is related to problems recognising and interpreting emotional information. Relational victimisation could be more dependent on the ability of the bully perpetrator successfully identifying the social and emotional weaknesses of specific individuals. In contrast, physical victimisation does not rely as heavily on the emotional and indirect characteristics of social situations.

The empathic styles of bullies and victims may also differ, and there is controversy about whether bullies are socially skilled cool manipulators who are unable to empathise with others (Dautenhahn, Woods, & Kaouri, 2007), or just deficient in their social skills (e.g. Sutton, Smith, & Swettenham, 1999). The SIP model emphasises social deficits, however effective bullying, and in particular relational bullying requires sophisticated social and emotional skills to manipulate the victim, and the peer group network into accepting their behaviour (Sutton, 2001). This would suggest that relational bullies do not differ from others in their perception of emotions, but rather in how to use them, by cognitively minimising or distorting the amount of distress felt by the victim (Arsenio & Lemerise, 2001).

The present study hypothesised that victims would have poorer emotion recognition abilities compared to bullies and neutral children. Further, it was expected that relational victims and 'overlap' victims (victims of physical and relational bullying acts) would have poorer emotion recognition abilities compared to physical victims, as competent emotion recognition skills are more important for relational bullying that is centred on the manipulation of close relationships. Secondly, it was hypothesised

that bullies would have the lowest levels of empathy compared to victims and neutrals.

Method

Participants

Overall, 373 primary school children from 11 schools in Hertfordshire, UK participated in the study, aged 9-11 years (M = 9.94, SD: 0.45). Sixteen schools were approached via telephone to take part in the study (69% overall participation). The average school size was 192 (range: 100 – 240 pupils). Participating schools varied in their socioeconomic composition of pupils ranging from lower to upper socioeconomic status, and 9% came from ethnic minority groups. If a school was interested in taking part, information letters and parental consent letters were distributed to the relevant teachers. Overall parental consent for their child's participation in the study was 97%.

Instruments

Bullying Nominations: This assessment was based on a standardised structured interview that enquired about friendships and peer relationships (previously described in detail, (see Wolke, Woods, Bloomfield, & Karstadt, 2000), and was adapted for the specific aims of this study. Using a time frame of the previous 6 months, children were asked to name up to six children in their class they believed physically bullied other children, and up to six children they thought were physically victimised (hit/beaten up, belongings stolen, threats, blackmail, nasty tricks). The same

procedure was used to assess relational bullying (getting called nasty names, being deliberately left out of games, withdrawal of friendship, and nasty rumour spreading).

Children were classified into physical bullying and relational bullying roles: physical bullies (nominated by 3 or more children in the class as being involved in physically bullying others, but did not receive any peer nominations for being victimised); physical victims (nominated by 3 or more children in the class as being physically victimised and received no peer nominations for physically bullying others); physical bully/victims (nominated on 3 or more occasions by peers as both physically bullying others and being physical victims); physical neutrals who neither physically bullied others nor became physical victims (received no, or less than 3 peer nominations for physically bullying others or being victimised). For relational bullying the same classification system was employed. Involvement in both physical and relational bullying were determined: physical bully only, relational bully only, physical and relational bully, physical victim only, relational victim only, physical and relational victim.

DANVA (Diagnostic Analysis of Nonverbal Accuracy) (Nowicki, 2005): The child facial expression test is a computerised test consisting of 24 photographs (12 male, 12 female, and mixed ethnicity) equally distributed between high and low intensity expressions of four emotions; happy, sad, angry and fearful. Happy, sad, angry, and fearful response options appeared on the screen below each photo. Each photo appeared on the computer screen for two seconds. Tests have shown the DANVA to have high internal consistency (current sample alpha = .61) and that it is reliable over

time (test-re-test reliabilities between .70 and .80 over 6 to 8 week periods). Construct validity support is also evident from results of over 200 studies with age ranges from 3 to 80 years (Nowicki, 2005).

Bryant Index of Empathy Measurement for Children and Adolescents: Empathy styles were measured using Bryant's (1982) 22-item empathy index (example items 'When I see someone who is feeling upset, I think about why he might be feeling like that', 'Seeing someone who is crying makes me feel like crying'). The index focuses specifically on affective components of the empathic process. The response format was changed from the original two-stage (yes vs. no responses) format that Bryant used, to a scale of one "I strongly agree" to five "I strongly disagree". Cronbach alpha for the current sample was .70 indicating moderate internal consistency.

Procedure

Ethical permission to complete the study was obtained from the University of Hertfordshire Ethical Committee. Written information about the study and a non-consent form (parents were asked to sign if they did not want their child to participate) was passed to all parents. The study took place at the University of Hertfordshire as part of an evaluation for a new anti-bullying software programme. A clear distinction between physical and relational bullying was provided before questionnaire completion. Children were ensured of their confidentiality and that they could withdraw from the study at any point. Children completed the Bullying Nominations assessment followed by the Bryant's Empathy Index.   Children completed the DANVA following a short break after the software interaction.

Results

Incidence of peer-nominated bullying roles

Of those children involved in some form of bullying behaviour (N: 141), 30.5% were classified as physical and relational victims, followed by 24.1% as physical and relational bullies. Pure bullying roles were less frequent with 15.6% of children classified as physical victims only, 12.8% as relational victims only, 9.2% as physical bullies only, and 7.8% as relational bullies only. A Kappa coefficient (Kappa = 0.64, $p < .001$), indicated a significant amount of overlap between physical and relational bullying roles. The analytical framework included distinct physical and relational victimisation roles, 'overlap' victims (children peer nominated as **both** physical and relational victims), and 'neutrals'.

Overall Emotion Recognition Abilities

Overall mean error rates on the DANVA emotion recognition test revealed that children made the fewest errors for 'happy' ($\underline{M}$ = .71, SD: 1.12), followed by 'sad' ($\underline{M}$ = 1.00, SD: 1.35), 'fear' ($\underline{M}$ = 2.05, SD: 1.62), and the highest mean error rate was found for 'anger' ($\underline{M}$ = 2.73, SD: 1.57).

Emotion recognition abilities and gender

A number of significant differences emerged between gender and emotion recognition abilities. Boys made significantly more mean total errors on the DANVA compared to girls, t = 2.93, (284), p = .004, (boys $\underline{M}$ = 7.56, girls $\underline{M}$ = 6.03). When each emotion was analysed individually, boys made significantly more mean total errors for happy, t = 2.61, (284), p = .01, (boys $\underline{M}$ = .90, girls $\underline{M}$ = .55), anger, t = 2.89, (284), p = .004,

(boys $\underline{M}$ = 3.06, girls, $\underline{M}$ = 2.51) and fear, t = 2.47, (284), p = .01, (boys $\underline{M}$ = 2.31, girls $\underline{M}$ = 1.84).

Emotion recognition abilities and peer nominated physical and relational victimisation status

Total Errors on DANVA

No significant differences emerged between physical bullying roles and mean number of total errors made on the DANVA, controlled for by gender. No other significant differences between physical bullying roles and DANVA, for specific emotions were found throughout the analysis.

A number of significant differences were uncovered between relational victimisation status and DANVA scores for total errors and individual emotions (Table I). Relational victims, and in some cases 'overlap' victims were significantly poorer at emotion recognition abilities on the DANVA compared to neutral children.

ANCOVA for victimisation role and total DANVA errors, controlling for gender was significant F (2, 200) = 3.52, p = .03. Planned post-hoc comparisons indicated that 'pure' relational victims t (167) = 2.26, p = .03, and 'overlap' victims t (187) = 2.22, p = .03 made significantly more mean total errors on the DANVA compared to neutrals (Table I).

<Insert Table I>

Recognition of individual emotions (happy, sad, anger, fear) and relational

victimisation status

No significant differences were found for relational victimisation roles, and mean number of errors for happy and sad emotions on the DANVA. ANCOVA (gender controlled) between relational victimisation and mean errors for angry emotions was significant F (2, 200) = 5.73, p = .02. Post-hoc planned comparisons revealed that 'pure' relational victims made significantly more errors for angry faces on the DANVA compared to neutrals t (167) = 2.82, p = .005 (Table I). A similar pattern of findings emerged for faces that depicted fear emotions on the DANVA, for relational victimisation status F (2, 200) = 3.03, p = .05. 'Pure' relational victims t (167) = 1.99, p = .05), and 'overlap' victims t (187) = 2.13, p = .03 made more errors compared to neutrals (Table I). A similar pattern of findings emerged for high and low intensity emotions on the DANVA in relation to relational victimisation status.

Bullying roles and association with Bryant empathy scores

An Independent measures t-test revealed that boys had significantly lower empathy scores compared to girls t = -4.40, (242), p < .001 (boys: <u>M</u> = 47.88, girls: <u>M</u> = 53.60). ANCOVA between bullying roles, for Bryant empathy scores controlling for gender revealed no significant differences.

Association between emotion recognition abilities and Bryant empathy scores

The mean overall score on the Bryant Empathy Scale was 50.99 (SD: 10.67; range 26-77). No significant relationship between overall emotion recognition abilities and empathy scores was found r = -.10, p = .13. Only one significant negative correlation

was found between total Bryant empathy scores and emotion recognition scores for fear $r = -.14$, $p = .03$, indicating that higher empathy scores were associated with lower errors rates for recognising fear emotions.

Discussion

The hypothesis that victims would have poorer emotion recognition abilities could not be fully accepted as physical victims were not found to have poorer abilities compared to neutrals and bullies. However, some support was generated for the hypothesis that relational victims would have poor emotion recognition abilities. Relational victims and in some instances 'overlap' victims (both relational and physical victims) were not as adept as others at recognising emotions overall, and more specifically in faces depicting angry and fear emotions.

Poor emotion abilities shown by relational victims may be one of the reasons why they are repeated targets of victimisation by peers at school. Relational victimisation relies heavily on the peer group and the subtle manipulation of social behaviour. The current results provide some initial support that the SIP model could provide a useful framework to further understand the social processing abilities of victims. Relational victims appear to have problems at the initial stages of the model with the correct encoding of cues, and the interpretation of cues (Crick & Dodge, 1994). These problems could in turn lead them to make incorrect judgments of the motivations of others, have poor access to appropriate responses and, ultimately, to make poor action decisions (Camodeca, Goossens, Schuengel, & Terwogt, 2003). However, the current results cannot say anything about the causal pathways.

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The hypothesis that bullies would demonstrate the lowest levels of empathy compared to victims and neutral children was not supported. This was a surprising result as some have proposed that although bullies understand the emotions of others, they do not share them in the same way, as they try to minimise or distort the amount of distress felt by others (e.g. Arsenio & Lemerise, 2004). The questionnaire may not have been sensitive enough to access the affective component of empathy. Physiological or observational assessments may be required to accurately measure empathic styles.

Future work should address emotional processing at different levels during information processing to determine whether there is a consistent pattern of deficits for children who are victimised. The current study does not relate emotion recognition abilities to further information processing or the ability to perspective take (e.g. theory of mind) (Sutton, Smith, & Swettenham, 1999). The link between emotion recognition and the understanding of other's perspectives in emotionally charged situations requires future exploration.

In light of previous findings that victimization by peers is for a significant number of children a continuation of harsh parenting or sibling abuse (Wolke & Samara, 2004) , the current results suggest that emotional and social skills training may be beneficial for victims, and could have a positive impact on other relationships. Caution should be taken for interventions aimed at bullies as they did not appear to have deficits in emotion recognition or empathic abilities.

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Table I. Mean number of errors made for relational victimisation roles on DANVA

Emotion Recognition test (N: 200)

	Relational Victimisation Status		
	Pure relational victim (n: 11)	Relational & Physical Victim (Overlap) (n: 31)	Neutral (n: 158)
Total DANVA Errors *	9.18	8.13	6.22
Happy DANVA Errors (ns)	.73	.97	.68
Sad DANVA Errors (ns)	1.64	1.39	.93
Angry DANVA Errors *	3.91	3.10	2.58
Fear DANVA Errors *	2.82	2.52	1.84

* $p = .05$

Note: Overall significance levels are shown. Individual post-hoc differences between bullying roles are

shown in the text