The handle http://hdl.handle.net/1887/22989 holds various files of this Leiden University dissertation

Author: Pouw, Lucinda
Title: Emotion regulation in children with Autism Spectrum Disorder : the link with social functioning and psychopathology
Issue Date: 2014-01-14
Chapter 5

Don’t anger me! Bullying, victimization, and emotion dysregulation in young adolescents with ASD

Published as: Don’t anger me! Bullying, victimization, and emotion dysregulation in young adolescents with ASD
Carolien Rieffe, Marina Camodeca, Lucinda B. C. Pouw, Aurelie M. C. Lange, & Lex Stockmann
European Journal of Developmental Psychology, 2012
Abstract

The purpose of this study was to increase our knowledge regarding the role that emotional functioning can play in the genesis of bullying and victimization at school for children with ASD. Therefore, we examined the unique associations of basic emotions (anger and fear) and moral emotions (shame and guilt) with bullying and victimization in children with an Autism Spectrum Disorder (ASD) and a control group with Typically Developing (TD) children. The study included 130 children and young adolescents (64 with ASD, 66 TD, Mage 140 months), who filled out self-report questionnaires. The main findings showed that in both groups less guilt and more anger were associated with more bullying. More fear was associated with more victimization in TD children only. Yet, more anger was also strongly and uniquely associated with more victimization in children with ASD, but not in TD children. These outcomes support the idea that lack of guilt is a pivotal antecedent of bullying for TD and ASD children. However, unlike TD children, the dysregulation of anger seems to play an important role in victimization as well as bullying in children with ASD.
Introduction

By definition autism is characterized by social impairments American Psychiatric Association (1995) The negative impact of these social impairments is well documented. Compared to typically developing (TD) children, children with an autism spectrum disorder (ASD) spend more time alone, are less often involved in social interactions, and report fewer reciprocal friends (Rotheram-Fuller, Kasari, Chamberlain, & Locke, 2010; Wainscot et al., 2008). Furthermore, children with ASD are less liked by peers, rejected and excluded more often, and worse, they are also more often bullied with verbal, physical and relational means (Cappadocia, et al., 2012; Carter, 2009; Humphrey & Symes, 2010; Little, 2002; Sofronoff, Dark, & Stone, 2011; Twyman, et al., 2010; Wainscot, et al., 2008). With many parents being unaware of it, recent studies have shown the relatively new form of cyber-bullying entering into the lives of children and adolescents with ASD and/or ADHD (Cappadocia, et al., 2012; Kowalski & Fedina, 2011).

Yet, victimization is only one side of the coin. Among TD children many victims are also bullies, which can also be observed in adolescents with ASD (Unnever, 2005; van Roekel, Scholte, & Didden, 2010). Nevertheless, although children with ASD are more often victims of peer bullying than TD children, it is not clear whether they themselves also bully others more often. Volker and colleagues (2010) found that parents rated their high-functioning children with ASD higher on bullying than parents of TD children, but this difference between ASD and TD children was absent when controlled for ADHD (Montes & Halterman, 2007). Also, results based on self-reports showed no differences in the frequency of bully behaviours between children with ASD and TD children (Twyman, et al., 2010).

Regardless of whether the absolute levels of bullying and victimization differ between ASD and TD children, the question that might be equally important to answer in order to improve our understanding of peer bullying is which factors are associated to these behaviours in children with ASD, since they do not necessarily coincide with those related to the same behaviours in TD children (Rieffe, et al., 2011). An important factor related to the occurrence of bullying and victimization in TD children is emotion dysregulation (Camodeca & Goossens, 2005; Spence, De Young, Toon, & Bond, 2009). Besides their social problems, impairments in the domain of emotion regulation are also frequently noted in children with ASD (Begeer, et al., 2008; Scarpa & Reyes, 2011; Singh et al., 2011; Sofronoff, et al., 2011), but it is unknown to what extent these problems can also account for victimization and bullying in this group. In other words, it is unclear to what extent the relationship between emotional functioning and bullying/victimization in TD children also applies to children with ASD, which was the focus of investigation in this study.

Bullying and emotion dysregulation

In a typical development, both bullies and victims are known for their heightened levels of anger (Kochenderfer-Ladd, 2004; Mahady Wilton, Craig, & Pepler, 2000), but this anger might come from different underlying factors, such as a desire for dominance in bullies and an attempt to defend themselves in victims. Additionally, anger in bullies and victims alike might also stem from a tendency towards reactive aggression, reflected in hot-headed behaviours in easily aroused children defending themselves (Camodeca, et al., 2002; Salmivalli & Nieminen, 2002), possibly due to a (hostile) misinterpretation of others’ intentions (Camodeca & Goossens, 2005).

Besides anger, victims are also characterized by other negative emotions such as anxiety and sadness (Camodeca & Goossens, 2005; Fleming & Jacobsen, 2010; Hawker & Boulton, 2000). Fear is a particularly dominant emotion, related to going to school, getting involved in new activities, or fear of future victimization (Boulton,
Trueman, & Murray, 2008). Clearly, victims’ negative emotions may largely stem from their negative social interactions. Yet, a study from Spence and colleagues (2009) showed that higher levels of emotion dysregulation predicted the level of victimization, emphasizing that the causal relationships could be either way or reciprocal.

Compared to TD children, children with ASD display higher levels of negative emotions, more difficulties with emotional self-control, especially anxiety and anger (Singh, et al., 2011; Sofronoff, et al., 2007; Volker, et al., 2010), and more mood disorders (Gadow, et al., 2012), denoting problems in their emotion regulation. A combination of more negative and more socially inept emotional displays could make children with ASD more vulnerable to peer victimization.

Moreover, anecdotic material, provided by parents in the study by Sofronoff and colleagues (2011), but also from personal conversations, point to the idea that many parents think that their child with ASD is easily provoked. Misunderstandings in social communication (e.g., literally following something), but also the fact that children with ASD are easily aroused, can be triggers for others to tease them. Parents note that their children with ASD frequently react angrily or even violently to these provocations, thereby getting more and more upset. Preliminary outcomes based on parent reports in this study by Sofronoff and colleagues (2011) seem to suggest that anger is related to more victimization in children with ASD. Additionally, these heightened levels of anger in children with ASD could also be linked to more bullying behaviours, as it is the case for TD children (Camodeca & Goossens, 2005), but to date there is no empirical support for this claim.

**Bullying and moral emotions**

In investigations into the role of emotion dysregulation in the aetiology of bullying and victimization, moral emotions are usually considered equally important as the basic emotions such as anger and fear (Gasser & Keller, 2009; Menesini & Camodeca, 2008). More than the basic emotions, moral emotions are aimed at regulating social interactions and make people feel repentant for their moral transgressions (guilt), or concerned about appearing in front of an audience in an undesired or not approved way (shame) (Menesini & Camodeca, 2008; Olthof et al., 2000). Moral emotions, such as shame and guilt, develop when children become aware of rules, social standards and their responsibility in meeting them, and are elicited when children experience their own failure in conforming to them (Lewis, 1995). They also require a clear self-other distinction, and the ability to perceive oneself through the eyes of the other(s), which is exactly what in children with ASD is commonly found to be impaired (Begeer, et al., 2008).

Although bullies may understand social situations well and present good perspective-taking skills (Caravita, Di Blasio, & Salmivalli, 2009; Gasser & Keller, 2009; Gini, 2006), they show deficits in moral engagement (Gini, 2006; Menesini & Camodeca, 2008; Pornari & Wood, 2010), moral compassion (Gini, Pozzoli, & Hauser, 2011), and moral emotions (Menesini & Camodeca, 2008). It is especially lower levels of guilt and shame that seem to characterise bullies (Menesini & Camodeca, 2008), allowing them to harm others more easily. In contrast, victims show no impairments in their levels of guilt compared to other children, but often report more shame, which makes them more vulnerable to being ridiculed by their peers (Menesini & Camodeca, 2008; Morrison, 2006).

The few studies on moral emotions in children with ASD seem to indicate a less developed understanding or application of these emotions in daily life situations, whereby children with ASD take a more egocentric perspective when interpreting social events and additionally show an impaired understanding of common social
rules (Andanson, Pourre, Maffre, & Raynaud, 2011). Regarding guilt, children with ASD score lower than TD children on the display of guilt in a guilt eliciting observational task (Hobson, Chidambi, Lee, & Meyer, 2006), and refer to interpersonal transgressions less often than TD children (Kasari et al., 2001). Additionally, when asked to recall shameful events, children with ASD mention an audience less often than TD children, and the events more often involve an external locus of control (Capps, Yirmiya, & Sigman, 1992; Kasari, et al., 2001), although children with ASD seem to acknowledge the importance of an audience equally often as TD children when asked about embarrassment in someone else (Hillier & Allinson, 2002).

Our study

The main aim of the study presented here was to examine the associations between emotional functioning and bullying/victimization in children with ASD, as compared to their TD peers. The study included the two major moral emotions that play a crucial role in TD children’s bullying behaviour: guilt and shame. We expected shame and guilt to be negatively associated with bullying in the TD group. Furthermore, we expected that only shame was positively associated with victimization in the TD group.

To the best of our knowledge the relation between moral emotions and bullying or victimization in children with ASD has not received any attention in the literature yet, but on the basis of the notion that the impact of moral emotions in ASD children’s daily life is limited, one would expect the association of shame and guilt with bullying to be weaker in children with ASD compared to TD children, and that shame plays a less influential role when children with ASD are being bullied.

Additionally, we examined the role of emotion dysregulation over and above the association of these two moral emotions with bullying/victimization. Here, the focus was on the two basic emotions mentioned most frequently in connection with TD children’s bullying: anger and fear, which are also the two emotions most frequently mentioned in connection with emotion dysregulation in children with ASD. As stated earlier, anger might serve different means in bullies and victims. Anger in bullies might be related to a desire for dominance, but anger in victims might be related to the attempt to defend oneself (Camodeca, et al., 2002). However, anger is the more dominant emotion in bullies, whereas fear is more dominant in victims. Fear arises in victims in anticipation of more peer harassment, but anxious children are easy and rewarding targets for bullies, thus the relationship is reciprocal (Spence, et al., 2009). Therefore, we expected in both groups anger to be related to more bullying, whereas fear was expected to be associated with more victimization.

The lack of literature on bullying and emotion regulation in children with ASD makes it difficult to make specific predictions on the moderating effect of group (i.e. ASD vs. TD). Yet, based on parent reports about the aggressive reactions that children with ASD can have towards peer provocation, we expected higher levels of anger to be associated with more victimization in the ASD group.

We choose to use (anonymous) self-report measures for bullying and victimization, because we thought that children themselves would be better informants about these behaviours for two reasons. First, children might feel embarrassed about being bullied or about their own bullying behaviours, thus parents or teachers might underreport these behaviours. Additionally, most children with ASD are in small classes in special education. Yet, the bullying might occur in their neighbourhoods, in the streets, but not necessarily in the classroom. Therefore, information by classmates could also give an underestimation. Age, SES and IQ were controlled for, but no specific hypotheses were formulated in this respect.
Method

Participants
A total of 130 children participated in this study. The sample included 64 high functioning children with ASD (57 boys, 7 girls – $M_{age} = 141$ months, $SD = 15.1$; age range: 113 - 177 months), diagnosed on the basis of the Autism Diagnostic Interview-Revised (Lord, et al., 1994) by child psychiatrists. Participants were recruited from the Centre for Autism, Leiden, the Netherlands; the Dr. Leo Kannerhuis, Doorwerth, the Netherlands; and the C.P. Van Leersumschool, Zeist, the Netherlands. These institutions are specialised in treating and diagnosing children with ASD.

A TD group (66 boys, 8 girls – $M_{age} = 138$ months; $SD = 15.5$, age range: 114 – 176 months) was drawn from primary and secondary schools in the Netherlands. Inclusion criteria for the TD group were an IQ above 80 and no diagnosed developmental disorders. The TD group was matched with the clinical group on sex and mean age.

An IQ norm score was computed by means of two nonverbal subtests of the Wechsler Intelligence Scale (WISC) (Kort et al., 2002; Wechsler, 1991): Block Design (copying small geometric designs consisting of four or nine plastic cubes) and Picture Arrangement (sequencing cartoon pictures to make sensible stories). The mean of the norm scores on the two subtests was used. Of two ASD children and eight TD children IQ scores could not be obtained. In the remaining sample there were no differences between children with ASD and TD children on the mean of the two IQ subtest scores.

SES was computed by adding the scores on questions concerning income, education and occupation of both parents/caregivers. When one of the questions was not answered or the answer was unknown, no score could be computed and these data were omitted from the results. For 17 TD children information about socioeconomic status was not provided by their parents. In the remaining sample there were no differences between children with ASD and TD children on SES scores. Therefore, IQ and SES scores were left out in further analyses. The Ethics Committee of Leiden University and the Centre for Autism granted permission for the study and all parents gave their written consent before testing.

Procedure
The children were tested at home, at school or in their institutions (in the case of children with ASD). At the start of the testing session children were informed that their responses would be processed anonymously and that they could opt out at any time without further explanation. Children were asked to fill out the questionnaires using a laptop computer. Each item was presented separately, and children could select their response below each item with the mouse. The next item would appear automatically. A testing session lasted approximately one hour. The data presented here are part of a larger research project, and during the sessions more tests (including observation measures) were administered which are not included in this study.

Materials
The Bully Questionnaire is based on the Bully/Victim Inventory (Olweus, 1997). Before filling out the questionnaire the children were given an elaborate introduction on bullying and informed that their answers would be kept secret (see Appendix 1). Children were asked ‘Did you, with the aim to bully someone, over the last two months...’ and nine items featuring bullying behaviours were presented (for example, ‘hit, push, or kick somebody’, ‘call somebody names’, ‘say mean things’, or ‘ignore a
Children were asked to respond to each item on a 3-point scale (1 = (almost) never, 2 = sometimes, 3 = often).

The Victim Questionnaire was presented after the Bully Questionnaire and consisted of a short introduction about bullying, now asking the children if they were bullied sometimes, and the same nine items of the Bully Questionnaire were presented, but now the items were formulated asking children if, in the last two months, they had been bullied (e.g. ‘Did someone call you names?’) Because deliberately making someone invisible can be a strategy to bully, one extra item was added to tap into this ‘Are you invited to birthday parties?’, that was scored reversed. The children could answer to each item on a 3-point scale (1 = (almost) never, 2 = sometimes, 3 = often).

The Mood Questionnaire (Rieffe, Meerum Terwogt, & Bosch, 2004) is a self-report about children’s affective states over the last four weeks, including the basic emotions Fear, Anger, Sadness and Happiness. Children are asked to indicate how they have been feeling recently. In all, the questionnaire consists of twenty items on a 3-point scale (1 = (almost) never, 2 = sometimes, 3 = often). The scales used in this study were Anger and Fear, each consisting of four items.

To assess Moral Emotions we used an adapted version of the Maladaptive and Adaptive Scales (SCMAS) (Ferguson, et al., 2000) to measure shame and guilt. The current version of the questionnaire consists of five scales (Guilt, Shame, Anger, Happiness, Pride), of which only the Guilt and Shame scales were used for this study. Six scenarios depicted moral situations in which harm was inflicted on someone else, and were intended to elicit guilt (e.g., ‘You’re riding your bike really fast. You crash into a little girl’). Another six scenarios were intended to elicit shame, in which the social image of the agent was damaged, but no harm was done to others (e.g., ‘You have to give a presentation. Everyone is staring at you. You forget what you wanted to say.’). Children were asked to read these twelve vignettes, each followed by the question how much of the intended emotion (guilt or shame) they would feel in these situations, to be answered on a 3-point scale (1 = not at all, 2 = a little, 3 = a lot).

The internal consistencies of all scales used in this study were good (see Table 1).
Table 1. 
Psychometric Properties and Mean Scores for Bullying Roles, Moral Emotions, and Mood Scales in Children with ASD and TD Children.

<table>
<thead>
<tr>
<th></th>
<th>No of items</th>
<th>ASD</th>
<th>Cronbach’s Alpha</th>
<th>Mean scores (SD) ASD</th>
<th>TD</th>
<th>Mean scores (SD) TD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullying roles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bully</td>
<td>9</td>
<td>.81</td>
<td>.80</td>
<td>1.59 (.38)</td>
<td>1.64</td>
<td>(.36)</td>
</tr>
<tr>
<td>Victim*</td>
<td>10</td>
<td>.81</td>
<td>.75</td>
<td>1.61 (.39)</td>
<td>1.47</td>
<td>(.31)</td>
</tr>
<tr>
<td>Moral emotions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guilt**</td>
<td>6</td>
<td>.76</td>
<td>.63</td>
<td>2.07 (.50)</td>
<td>2.28</td>
<td>(.40)</td>
</tr>
<tr>
<td>Shame**</td>
<td>6</td>
<td>.79</td>
<td>.77</td>
<td>1.98 (.52)</td>
<td>2.33</td>
<td>(.51)</td>
</tr>
<tr>
<td>Mood states</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger</td>
<td>4</td>
<td>.91</td>
<td>.83</td>
<td>1.58 (.61)</td>
<td>1.53</td>
<td>(.49)</td>
</tr>
<tr>
<td>Fear**</td>
<td>4</td>
<td>.66</td>
<td>.76</td>
<td>1.52 (.43)</td>
<td>1.25</td>
<td>(.37)</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01

Statistical Analyses
First, in order to make a comparison of the prevalence of Bullying and Victimization (dependent variables) and levels of moral emotions (Guilt and Shame), and mood states (Anger and Fear) (independent variables) between the ASD and TD group, t-tests were carried out. Second, relations between dependent variables and independent variables were established by means of Pearson Correlations. Fisher transformations were used to examine the differences between the correlation coefficients for both samples. Third, Group was recoded into a dummy variable (TD = 0; ASD = 1) and the independent variables were centred to have a mean of zero. Two hierarchical regression analyses were carried out with Bullying and Victimization as dependent variables, Group, Guilt, Shame, Anger, and Fear in step 1. In step 2, the interaction terms with Group were added to examine whether the effects of the independent variables vary as a function of Group.

Results
The mean scores in Table 1 show that children with ASD reported more victimization than TD children, but children in both groups reported bullying others equally often. Additionally, children with ASD reported higher scores on Fear than TD children, but not on Anger. Children in the TD group reported more guilt and shame than their peers with ASD.

Relations between bullying roles, moral emotions and mood states
Table 2 shows Pearson’s correlations of the bullying roles with the moral emotions, and the scales of the Mood questionnaire for the ASD and TD group separately. Bullying and Victimization were associated in the ASD group (r = .38, p ≤
but not in the TD group \( r = .14, p \geq .25 \), yet the difference in the strength of the correlation between the groups was not significant.

The correlations in Table 2 also show that, for Bullying, correlations emerged in both groups in the expected direction with Guilt and Anger. The strength of the associations did not differ between the groups. The regression model (Table 3) confirmed that Guilt contributed negatively and Anger positively to Bullying. Group did not significantly interact with either of the independent variables, suggesting there was no moderating effect of Group on the association between these independent variables and Bullying.

The correlations in Table 2 show that Fear was associated with Victimization, but for the TD children only. Anger was associated with Victimization in the ASD group, but not in the TD group. However, using Fisher transformation, only the correlation coefficients between Anger and Victimization differed between the two Groups \( p \leq .001 \). Only Anger contributed to Victimization. For Victimization, Group interacted with Anger \( p \leq .001 \) and Fear \( p \leq .016 \). The significant interaction terms suggest that group moderated the effect of Anger and Fear on Victimization. To examine these interaction effects, the effects of Anger on Victimization, and Fear on Victimization were plotted for the ASD group and the TD group separately, following the Aiken and West (1991) procedure. Figure 1 shows that Anger was associated with Victimization in the ASD group and that this association was absent in the TD group. Figure 2 shows that Fear was associated with Victimization in the TD group and that this association was absent in the ASD group.

These regression analyses were also carried out controlling for Victimization in the prediction of Bullying, for Bullying in the prediction of Victimization, and for Age and IQ for both dependent variables. The inclusion of these variables did not lead to significant differences and were therefore omitted from the results. Additionally, the regression analyses were carried out for boys only and showed the same outcomes. Therefore, also these outcomes are not further reported here.
Table 2. 
Correlations Between Bullying Roles, Moral emotions and Mood Scales for 
Children with ASD and TD Children.

<table>
<thead>
<tr>
<th></th>
<th>ASD Bully</th>
<th>ASD Victim</th>
<th>TD Bully</th>
<th>TD Victim</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moral emotions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guilt</td>
<td>-.35**</td>
<td>.15</td>
<td>-.43***</td>
<td>.00</td>
</tr>
<tr>
<td>Shame</td>
<td>-.18</td>
<td>.09</td>
<td>-.10</td>
<td>.15</td>
</tr>
<tr>
<td><strong>Mood states</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger</td>
<td>.49***</td>
<td>.59***</td>
<td>.21</td>
<td>.13</td>
</tr>
<tr>
<td>Fear</td>
<td>.13</td>
<td>.19</td>
<td>.14</td>
<td>.39**</td>
</tr>
</tbody>
</table>

*Note.* Using Fisher transformation, the correlation coefficients between Anger and Victimization differed between the two Groups.

* p < .05; ** p < .01; *** p < .001.
Table 3

Hierarchical Regression Analyses for Moral Emotions, Mood Scales, and Interactions with Group on Bullying and Victimization in Children with ASD and TD

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Δ $R^2$</th>
<th>$B$</th>
<th>$p$</th>
<th>Δ $R^2$</th>
<th>$B$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bullying</td>
<td>.24</td>
<td></td>
<td>.000</td>
<td>.24</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>Group</td>
<td>-.15</td>
<td>.033</td>
<td>.033</td>
<td>.12</td>
<td>.060</td>
<td>.060</td>
</tr>
<tr>
<td>Guilt</td>
<td>-.28</td>
<td>.000</td>
<td>.000</td>
<td>.06</td>
<td>.440</td>
<td>.440</td>
</tr>
<tr>
<td>Shame</td>
<td>.01</td>
<td>.939</td>
<td>.939</td>
<td>.04</td>
<td>.504</td>
<td>.504</td>
</tr>
<tr>
<td>Anger</td>
<td>.19</td>
<td>.001</td>
<td>.001</td>
<td>.24</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Fear</td>
<td>.12</td>
<td>.141</td>
<td>.141</td>
<td>.12</td>
<td>.111</td>
<td>.111</td>
</tr>
<tr>
<td>Total adj. $R^2$</td>
<td>.20</td>
<td></td>
<td></td>
<td>.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $B$-coefficients only shown when $\Delta R^2$ for Model was significant.
Figure 1. Group moderates the effect of Anger on Victimization.

Figure 2. Group moderates the effect of Fear on Victimization.
Discussion

First of all, it should be noted that children with ASD seem very capable of responding to self-report questionnaires about their own internal states and their social behaviours, as we also observed in previous studies (Berthoz & Hill, 2005; Rieffe, et al., 2011). This was indicated by the moderate to high outcomes for internal consistency of the scales that were used in this study.

Confirming the outcomes in previous studies, children with ASD reported a higher rate of victimization than their TD peers (Humphrey & Symes, 2010), but they reported to bully others equally often. The self-reported levels of shame and guilt in children with ASD were lower than in their TD peers (Kasari, et al., 2001).

When we examined the moderating effect of group we found no effect on bullying. Consistent with the literature, self-reported bullying behaviour by TD children in this study was also related to fewer feelings of guilt and more anger (Camodeca & Goossens, 2005; Menesini & Camodeca, 2008). Yet, we found the exact same pattern in children with ASD. However, differences occurred for victimization. Whereas more fear was related to more peer harassment in TD children, anger made the strongest contribution to the prediction of victimization in children with ASD.

Bullying

Anger played a dominant role in bullying for ASD and TD children. It has been argued that anger in bullies may be related to a (hostile) misinterpretation of others’ intentions in TD children (Camodeca & Goossens, 2005) and this might also be true for children with ASD. The well-documented impairments in acknowledging and understanding others’ mental states in children with ASD negatively affects their daily social interactions (Garnett, Kelly, & Attwood, 2009), which might have also played a role in this relationship we found between anger and bullying behaviours.

Nevertheless, the motive for the anger could also be partially different in the two groups. In TD bullies anger can be useful in establishing or maintaining social dominance and in avoiding retaliation (Olthof et al., 2011; Pellegrini & Long, 2002). Yet, it is less likely that this strategic use of anger would also be found in children with ASD. Bullying and victimization have been found to be significantly interrelated in children with ASD, but not in TD children, implying that children with ASD might be both targets and perpetrators of peer harassment more often than TD children (van Roekel, et al., 2010). In other words, they do not seem to be the bullies that maintain a dominant, albeit negative, role as leader. It seems plausible that their anger is more related to frustration and misunderstandings than to controlled anger expressions for dominance. This could imply that bullying in children with ASD is less strongly related to antisocial behaviours, as observed in TD children (Baldry & Farrington, 2000; Bender & Losel, 2011; Sigfusdottir, Gudjonsson, & Sigurdsson, 2010), but to emotion dysregulation instead.

Personal experiences by the last author, in his profession as child psychiatrist, working exclusively with children and adolescents with ASD, give rise to the idea that an important strategy for children with ASD is to gain control over socially difficult or unpleasant situations which cause uncontrollable arousal in the child. The way to obtain this control can result in aggressive behaviours towards others, trying to evoke those negative reactions, so that the child knows when and what to expect. Parents with a child with ASD confirm this view, but to date there is no empirical evidence for this. Future studies may further explore this avenue, which could give important insights into the effect of the over-arousal and problems of emotion dysregulation in children with ASD.

Despite the lower level of guilt in children with ASD, our results indicated that guilt was strongly related to bullying behaviours in TD and ASD children, over and above
children’s level of anger. As it appeared, a lack of guilt is a common feature in ASD and TD bullies, who have difficulties in feeling remorse and responsibility for their conduct, and present deficits in morality. The fact that in our study higher levels of guilt were also related to less bullying in children with ASD suggests that these children are well capable of understanding the level of responsibility or blame that one can attribute in negative social situations (Grant, Boucher, Riggs, & Grayson, 2005).

Previous studies suggest that children with ASD show a lesser understanding of shame and guilt in the appropriate social contexts compared to TD children, which seems to contradict our results. Yet, these studies were based on children’s spontaneous responses and explanations regarding guilt- or shame-evoking events (Capps, et al., 1992; Hobson, et al., 2006). Because many children with ASD are characterised by an inhibition to take the initiative in social situations, this inhibition could also hinder them in responding spontaneously (Begeer, Rieffe, Terwogt, & Stockmann, 2003). Nevertheless, the outcome in our study that children with ASD, as we had expected, reported less guilt and shame in response to the norm-violating vignettes they were presented with, emphasises some moral impairments in ASD children’s daily functioning that should be examined in more detail in future studies.

Victimization

Although a positive association was found between shame and victimization in TD children, we were surprised that it was not statistically significant. In fact, a previous study (Menesini & Camodeca, 2008), employing a similar measure to assess non-moral shame in Italian preadolescents, found a clear association between shame and victimization. A cultural aspect may have played a role: it is possible that Dutch victims feel less social pressure than Italian adolescents to behave or appear in a certain way as is typical for more honour oriented cultures, like Mediterranean cultures (Mosquera, Manstead, & Fischer, 2002). Therefore, Dutch adolescents might not display the same levels of shame when they fail to conform to these kinds of norms. It may also be likely that Italian victims think they can be further humiliated because of their unwanted identity, gaffes or failures, whereas this may not be the case for their Dutch counterparts. However, given the contrasting findings, further studies are needed to shed light on links between shame and victimization.

We were able to confirm our hypothesis that TD victims also reported more fear related to victimization. As noted, TD children who are often harassed by their peers might become anxious to go to school or participate in other child-related activities in order to avoid negative experiences. Yet, highly anxious children are also easy targets for potential bullies and thus the relationship of fear and victimization could be reciprocal. Several intervention programs were developed based on this possible relationship with the goal to make children less vulnerable and more socially and emotionally skilled (Bierman et al., 2010; Salmivalli, Garandeau, & Veenstra, in press). In contrast to these findings regarding victimization in TD children, and despite the finding that children with ASD reported more fear in this study than their TD peers, this general fear was unrelated to being bullied in children with ASD. Instead, it appeared that anger was an influential emotion in children with ASD, strongly related to victimization. The role that anger plays in the victimization of children with ASD is not clear yet, and could in fact be reciprocal as well. Victims may react angrily to being provoked, ridiculed or feeling misunderstood, and may resort to anger because they lack social competence, or have no solutions to respond to provocation. However, children with poor anger management can also become victims more likely because they are easily triggered to over-react as was noted by many parents of a
child with ASD. Future studies could compare the instrumental use of anger in TD children to the function or possible dysfunction of anger in children with ASD.

Experience of more frequent harassment could be an effect of the widely noted social impairments in children with ASD. Children with ASD display difficulties in understanding nonverbal behaviours, jokes, and others’ feelings, and their atypical behaviours might be perceived as awkward and clumsy and therefore are more easily ridiculed (Carter, 2009; Little, 2002). Children with ASD also display difficulties in regulating their own level of arousal, especially in negative peer interactions. These symptoms, combined with poor social skills and tendency for idiosyncratic contacts, could make these children easy targets for bullies. Future studies could further explore these aspects into one integrated model.

**Concluding remarks**

Anger implies the tendency to confront others with the harm that has been done, and demand of these others to restore the damage (Rieffe & Meerum Terwogt, 2006). Adequate anger management might still be an important goal to obtain for many children with ASD(Singh, et al., 2011). Yet, also when expressed maladaptively, either out of frustration or because of feeling provoked, anger expression does imply a tendency and willingness to set and guard one’s limits, i.e., to confront the social world and stand up for oneself. In other words, children with ASD who face social problems such as bullying and/or victimization do not seem to be the types that withdraw, as implicated by a fear reaction. Instead, we observed patterns of anger, which imply that these children seek a connection with the outside world more often than their less angry peers and may be indicating a stronger, though less productive, desire to express themselves. Thus, these outcomes seem to suggest that children with ASD who are more frequently involved in bullying and/or victimization are also more inclined to seek the confrontation in their social interactions. In our study we did not find whether the anger in children with ASD is the cause or the effect of both bully behaviours and victimization, but we hope to establish this link with future longitudinal studies.

Our current work also raises some other questions that could be explored in future studies. A one-dimensional category for victims was used in this study, but literature suggests that two types of victims can be detected: more passive and withdrawn versus more aggressive and provocative victims (Olweus, 1993; Unnever, 2005). It is possible, for instance, that whereas fear is more typical of the first type, anger mainly characterizes the second type of victims. Given the high correlation between bullying and victimization in our ASD sample, this distinction might also be valid for this group. Besides this point, future research could also focus on investigating different types of bullying and victimization, such as physical, verbal, relational and electronic.

In conclusion, the outcomes of this study suggest that TD and ASD bullies share a common lack of guilt and high levels of anger, whereas victimization is only associated to fear for TD children. Instead, both bullying and victimization in ASD children appear to be linked with the dysregulation of anger. As noted earlier, the causality of these relationships as assumed in this paper has to be established longitudinally in future studies.