Reflect, (re)act and interact: the roles of shame, guilt and social access in adolescent aggression

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Chapter 7

General Discussion

Self-conscious emotions are crucial for children's social development, as these emotions make us aware of norms and values that are necessary for creating and maintaining social harmony. Self-conscious emotions motivate individuals to comply with something more important than their own individual needs, namely a safe and protective social climate (e.g., Beer, Heerey, Keltner, Scabini, & Knight, 2003; Tracy & Robins, 2004). The main aim of this thesis is to enhance our understanding of the role of self-conscious emotions (i.e., shame and guilt) in the development of adolescent aggression. Previous cross-sectional studies have studied the relationship between self-conscious emotions and aggression in this important developmental phase, yet we still lack sufficient understanding of (1) the longitudinal nature of these associations, and (2) the importance of access to and input from the social world for the development of self-conscious emotions. Therefore, this thesis aims to unravel how guilt and shame contribute to the development of adolescent aggression over time, and in addition, to examine the influence of social access on the development of self-conscious emotions and their relations with aggression.

Our hypothesis is that participation in the social world is crucial for the development of self-conscious emotions, and that less access to the social world could therefore be detrimental to this development. It may in this regard affect negative outcomes, such as aggressive behaviour. In this thesis, the influence of access to the social world on the development of self-conscious emotions is modelled using a quasi-experimental design. Two groups with less access to the social world are included: adolescents with an autism spectrum disorder (ASD), and adolescents with hearing loss. These two groups differ greatly from each other regarding causes, neurobiological underpinnings, symptomatology and clinical presentation, yet members of both groups face challenges in achieving access to and participating in the social world.

ASD is a disorder characterized by deficits in social communication and social interaction (American Psychiatric Assocation, 2013). From an early age, children with ASD struggle to engage in social interactions with their parents, thereby reducing the quality and quantity of the child's social experiences (Beurkens, Hobson, & Hobson, 2013). Adolescents and young adults with ASD also have more difficulty participating in the social world, as they have fewer friends and are more socially isolated (e.g., Orsmond, Shattuck, Cooper, Sterzing, & Anderson, 2013). Individuals with hearing loss are restricted in their access to the social world solely due to limitations on access to auditory input. Essentially, children with hearing loss are able to learn everything just as well as hearing children. However, the majority of infants with hearing loss are born to hearing parents who do not use sign-language, leading to communication problems at an early age (Ambrose, Walker, Unflat-Berry, Oleson, & Moeller, 2015; Mitchell & Karchmer, 2004). But also at an older age, with or without hearing

technology, challenges in communication remain. Children and adolescents with hearing loss are less able to access the sounds of interactions between hearing family members and friends, and many acoustic environments pose problems for comprehension (Luckner & Cooke, 2010). Taken together, diminished access to the social world characterizes both individuals with ASD and individuals with hearing loss, which decreases their opportunity to learn from these daily interpersonal social experiences.

The first aim of this thesis was to examine the influence of social access on the development of self-conscious emotions. Theory of Mind (ToM) is an important precursor for the development of self-conscious emotions. Therefore, ToM was examined in young children (one to six years old) with ASD. Levels of shame and guilt in adolescents with ASD and adolescents with hearing loss were assessed through self-reports and compared to a group of matched controls. All adolescents were between nine and sixteen years old. The second main aim of this thesis was to unravel the longitudinal contributions of shame and guilt to the development of adolescent aggression in three groups: adolescents with ASD, adolescents with hearing loss, and typically developing adolescents. To this end, these self-conscious emotions and aggression (i.e., bullying, reactive aggression, and proactive aggression) were measured at multiple time points with a nine-month interval. This final chapter summarizes the main findings of this thesis, discusses the strengths and weaknesses of the studies, and provides suggestions for future directions.

MAIN OUTCOMES

The first aim of this thesis is to examine the level of self-conscious emotions in adolescents with ASD and adolescents with hearing loss, as compared to levels of self-conscious emotions in typically developing adolescents.

Theory of Mind

The first study of this thesis (**Chapter 2**) examined the understanding of three core ToM elements in young children with ASD (age range = one to six years old; $n = 63$): intentions, desires, and beliefs. Difficulty in understanding others' mental states is a core cognitive feature of ASD. Children with ASD already experience a substantial delay in ToM development at an early age (for reviews see Baron-Cohen, 2001; Kimhi, 2014). However, previous studies often focused on single elements of ToM, whereas the unique aspect of this study was that we studied three core elements of ToM simultaneously. Furthermore, we included children with ASD at a very young age. This

was made possible by advances in the early identification of ASD (Kleinman et al., 2008). Studying different elements of ToM in very young children provides more insights in developmental timing of ToM abilities in children with ASD.

Children with ASD were less able to understand others' desires and beliefs compared to a group of typically developing controls. The outcomes regarding intention understanding were more diffuse: children with ASD were able to derive behavioural intentions but seemed to lack the social interest to share intentions. They were less inclined to react to the pointing gesture of an experimenter and, less often met the experimenters' non-verbal request to hand over a bottle cap as compared to the typically developing controls. Greater difficulty understanding the pointing gesture and non-verbal request in children with ASD could be explained by the highly social nature of these two latter tasks. Overall, this first study indicates that children with ASD experience more difficulties in understanding others' mental states. Yet understanding mental states is a basic requirement for the development of self-conscious emotions (Misailidi, 2018). The developmental delay in ToM remains into adolescence, where adolescents with ASD still show impairments in ToM abilities (e.g., Kimhi, 2014).

If social access is important for the development of ToM, a similar delay should be observed in ToM in children with hearing loss as observed in children with ASD. A previous study, using the same experimental design, showed that children with hearing loss also experience difficulties in their ToM development (Ketelaar, Rieffe, Wiefferink, & Frijns, 2012). This study included young children (i.e., one to six years old) with cochlear implants raised in hearing families. Children with hearing loss performed equally well on intention understanding tasks, but showed lower performance on desire and belief understanding as compared to hearing children (Ketelaar et al., 2012). Like in adolescents with ASD, these difficulties with ToM are still observed in adolescents with hearing loss (Gonzalez, Quintana, Barajas, & Linero, 2007; Hao, Su, & Chan, 2010; Lecciso, Levante, Baruffaldi, & Petrocchi, 2016).

When these outcomes regarding ToM skills of children with ASD and children with hearing loss are compared, one difference emerges. Children with ASD are less able to understand non-verbal gestures, while children with hearing loss do not seem to have any problem understanding the intentions of the experimenter compared to typically developing children. However, this can be explained by the known differences between the two studied groups. Parents of children with hearing loss may be more inclined to use non-verbal language due to their child's difficulty hearing speech compared to parents of hearing children. In addition, children with hearing loss do not tend to lack social interest in sharing intentions. Thus they are in a position to recruit non-verbal experience with intentions during the first years of life. Intention understanding skills usually emerge around the preverbal age of one (Behne, Carpenter,

Call, & Tomasello, 2005; Behne, Carpenter, & Tomasello, 2005; Camaioni, Perucchini, Bellagamba, & Colonnesi, 2004), and the development of intention understanding does not depend on verbal language comprehension (Akhtar & Gernsbacher, 2007). Therefore, it is not expected that the understanding of intentions is delayed in children with hearing loss. In contrast, children with ASD show less social interest from an early age (Chevallier, Kohls, Troiani, Brodkin, & Schultz, 2012). They are less inclined to attribute attention to social information, show less initiative in sharing attention, and respond less frequently to others' pointing gestures (Bruinsma, Koegel, & Koegel, 2004; Dawson et al., 2004; Mundy et al., 2007) Thus in children with ASD, their lack of social interest could be responsible for their delay in intention understanding, as well as desire and false-belief understanding (Chevallier et al., 2012). Taken together, the observed delays in ToM (i.e., desire and belief understanding) in both children with ASD and children with hearing loss suggest that input from the social world is indeed important for ToM development, regardless of the underlying cause for the reduced access.

Self-conscious emotions

Since ToM is delayed in children with ASD and children with hearing loss, we expected lower levels of self-conscious emotions. A good way to assess levels of shame and guilt is by using hypothetical scenarios that elicit shame or guilt and to ask participants to imagine being in this situation, and to report how ashamed or guilty they would feel. The Brief Shame and Guilt Questionnaire (BSGQ) uses this approach and consists of six shame-eliciting and six guilt-eliciting hypothetical scenarios.

To be able to map shame and guilt in adolescents with hearing loss, the third study of this thesis (**Chapter 4**) first assessed the suitability of the BSGQ for this group. Administering self-reports in adolescents with hearing loss can be unreliable due to a high incidence of language problems (Moeller & Tomblin, 2015; Tomblin et al., 2015). Difficult item formulation can therefore easily lead to misinterpretations. The BSGQ is a questionnaire especially designed for adolescents with language difficulties, given the short items and simple item formulation, and the possibility for viewing items in sign language (Novin & Rieffe, 2015). The third study indicated that the BSGQ can indeed be used to successfully measure shame and guilt in adolescents with hearing loss. The self-report questionnaire showed good reliabilities and construct validity in this group. In addition, the BSGQ showed measurement invariance, meaning that levels of shame and guilt in adolescents with hearing loss as measured by the BSGQ can be meaningfully compared to levels of shame and guilt in adolescents without hearing loss. Using the BSGQ, several studies in this thesis (**Chapter 3, 4, 5, and 6**) showed that adolescents with hearing loss and adolescents with ASD reported lower levels of shame and guilt compared to typically developing adolescents.

The second main of this dissertation is to investigate the contribution of self-conscious emotions to the development of aggression.

The second and fourth study (**Chapter 3 and 5**) of this thesis examined the longitudinal contribution of shame and guilt to the development of bullying in typically developing adolescents. These studies showed that guilt was longitudinally associated with bullying, while shame was unrelated. The longitudinal association of guilt with bullying was bidirectional; lower levels of guilt contributed to higher levels of bullying over time, while higher levels of bullying also contributed to lower levels of guilt (see Figure 1). These findings suggest that individuals with low levels of guilt are more inclined to start bullying others compared to individuals with high levels of guilt, which is in line with previous studies showing that guilt inhibits transgressing behaviours (Roberts, Strayer, & Denham, 2014; Roos, Salmivalli, & Hodges, 2015; Stuewig, Tangney, Heigel, Harty, & McCloskey, 2010). But these findings also suggest that individuals who participate in bullying others become less prone to the experience of guilt. The more often one bullies, the lower the threshold becomes to bully again. This could be explained by the attempt of adolescents to condone their own immoral behaviours. Adolescents who display more bullying behaviours, are more inclined to engage in moral disengagement to deactivate the uncomfortable feeling of guilt (Mazzone, Camodeca, & Salmivalli, 2016; Thornberg, Pozzoli, Gini, & Jungert, 2015). Moral disengagement involves cognitive effort to disengage from your own immoral actions by, for example, minimizing one's role (e.g., "I bullied, but I was not the one who started it"), denying consequences (e.g., "we were just joking/teasing"), or blaming the victim (e.g., "it is his/her own fault"; Bandura, 1999). Individuals who use these strategies more frequently to escape their own feelings of guilt could therefore become less guilt-prone over time.

The fifth study of this thesis (**Chapter 6**) assessed the contribution of shame and guilt to the development of reactive and proactive aggression. Guilt played an inhibiting role in the development of aggression, but for proactive aggression only (see Figure 1). This is consistent with the finding that guilt also inhibits the development of bullying behaviours (**Chapter 3 and 5**). Adolescents who are prone to guilt will not quickly resort to purposeful aggressive behaviours or repeated aggressive actions towards a weaker individual (i.e., bullying). Presumably, adolescents who are prone to guilt will anticipate more negative outcomes following aggressive behaviour, such as harm for the victim and the negative feeling state associated with guilt.

Shame was unrelated to proactive aggression; however, this self-conscious emotion was uniquely associated with the development of reactive aggression (see Figure 1). Reactive aggression represents aggressive responses to a perceived threat or provocation, and is therefore associated with a high level of arousal (Tangney, Wagner, HillBarlow,

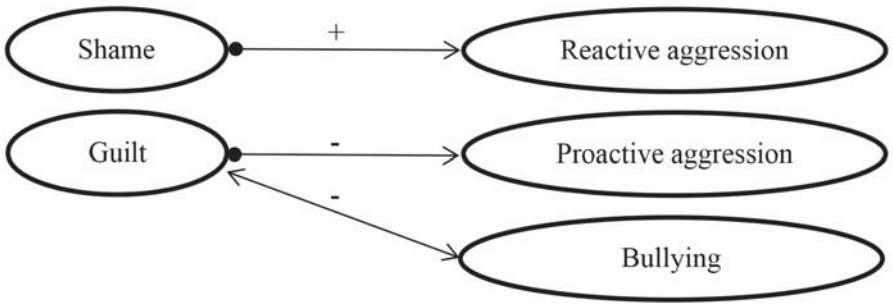

Figure 1. A graphic representation of the longitudinal associations in typically developing adolescents found in this thesis. This figure depicts the longitudinal associations of shame and guilt with three types of aggression: bullying, reactive aggression, and proactive aggression. Double-sided arrows represent bidirectional relations between variables over time and a dot at the end of a line indicates this direction has not been tested in this thesis. Plus signs indicate positive relations and minus signs indicate negative relations.

Marschall, & Gramzow, 1996). Thus, adolescents with higher levels of shame were more likely to use aggression to protect themselves or to retaliate. We suspect that shame-prone adolescents are more likely to interpret others' behaviour as threats for one's identity goals or as provocative.

Interestingly, adolescents with ASD and adolescents with hearing loss both reported lower levels of shame and guilt and similar levels of bullying, the longitudinal associations between these self-conscious emotions and bullying were similar to typically developing adolescents (**Chapter 3 and Chapter 5**; see Figure 1). This indicates that also in groups with less access to the social world, guilt has an inhibiting function in the development of bullying. In addition, for adolescents with hearing loss, the influence of shame and guilt on the development of proactive and reactive aggression was tested and did not result in differences compared to typically developing adolescents (**Chapter 6**). Thus also for adolescents with hearing loss, shame seems to encourage reactive aggression, while guilt discourages proactive aggression (see Figure 1).

Next to lower levels of shame and guilt, adolescents with hearing loss reported higher levels of proactive aggression, but similar levels of reactive aggression compared to typically developing adolescents (**Chapter 6**). The findings regarding levels of aggression are not surprising in light of the longitudinal associations. Lower levels of shame do not pose a risk for the development of reactive aggression. Only high levels of shame are associated with more reactive aggression. Based on the longitudinal associations, it is therefore not expected that adolescents with hearing loss would report elevated levels of reactive aggression. However, the lower levels of guilt do pose a risk for developing proactive aggression. Since lower levels of guilt are found in adolescents with hearing loss, it may not be surprising that higher levels of proactive aggression were reported by adolescents with hearing loss compared to typically developing adolescents.

GENERAL DISCUSSION

The link between shame and aggression

This thesis revealed that adolescents with higher levels of shame develop higher levels of reactive aggression, whereas shame was unrelated to bullying and proactive aggression. Previous studies were indecisive about the function of shame in the development of aggression. While some studies highlighted that shame prevents aggressive behaviours (Olthof, 2012; Roos, Salmivalli, & Hodges, 2011), other studies indicated that shame is related to higher levels of aggression (Stuewig et al., 2010). Longitudinal studies have failed to confirm any relationship between shame and aggression (Manning, 2005; Roos, Hodges, & Salmivalli, 2014). These contrary findings could be explained by differences in the particular operationalization of shame, the adopted measurement methods, and the strategies employed in analysis. The outcomes of this thesis should be interpreted with respect to these differences.

First, the dominant approach in psychology is to define shame as a strong negative emotion and to place great emphasis on the accompanying feeling of a deficient self (Tangney, 1998; Tangney, Burggraf, & Wagner, 1995). Researchers using this conceptualization tend to use instruments that highlight the negative affect associated with shame. For example, the widely used Test of Self-Conscious Affect for Children (TOSCA-C; Tangney, Wagner, Burggraf, Gramzow, & Fletcher, 1990) requests children to imagine being the protagonist of a hypothetical scenario in which the protagonist transgresses a social norm or standard. Subsequently, they are asked to indicate to what extent certain statements would apply to them. Responses to statements such as, "I would think: I'm terrible", are used as an indication for shame. These studies tend to relate shame to higher levels of aggression (Stuewig et al., 2010; Tangney, Stuewig, & Mashek, 2007). Whereas, researchers that do not (solely) focus on the negative characteristics of shame, tend to highlight the inhibiting role of shame in aggression (e.g., Olthof, 2012). In this thesis, we measured shame in reaction to hypothetical incompetent behaviour, putting emphasis on feelings of deficiency and inferiority. It is therefore not surprising that this thesis confirms previous studies that shame is related to higher levels of reactive aggression over time.

Second, although shame and guilt are clearly distinguishable, they are also highly correlated (Olthof, 2012; Roos et al., 2014; Tangney, Wagner, & Gramzow, 1992). It is therefore challenging to study the unique relations of shame and guilt with aggression. Some researchers attempt to study these unique relationships by controlling for the covariance between guilt and shame. Whether or not one controls for this covariance can strongly influence the drawn conclusions with regards to the relation with aggression. Because what is guilt-free shame? Filtering out the overlap with guilt could

put more emphasis on the unique and negative aspects of shame, such as the fear of being negatively evaluated, the urge to escape, and the focus on the defective self. For this reason, guilt-free shame might be more easily related to higher levels of aggression, whereas shame contaminated by guilt is more often found to be related to lower levels of aggression or unrelated to aggression (Novin & Rieffe, 2015; Rieffe, Camodeca, Pouw, Lange, & Stockmann, 2012; Roos et al., 2011). In this thesis the associations of shame with aggression are corrected for the covariance with guilt (**Chapters 3, 4, 5, and 7**). Future studies should unravel the influence of different measurement methods and controlling for covariance on the relationship between shame and aggression.

The link between guilt and aggression

The longitudinal studies in this thesis highlight that guilt can inhibit the tendency to bully others or to behave aggressively in order to obtain a certain goal (i.e., proactive aggression). The underlying process could be that guilt-prone individuals anticipate a negative emotional experience as a consequence of behaving aggressively, and therefore refrain from this norm-transgressing behavior (Tangney et al., 2007). These findings are consistent with previous cross-sectional studies (Onishi, Kawabata, Kurokawa, & Yoshida, 2012; Roberts et al., 2014; Roos et al., 2015). The innovative aspects of this thesis with regards to guilt compared to previous studies are: (1) the longitudinal design, as it has been shown that higher levels of guilt inhibit the development of bullying and proactive aggression over time, and (2) the conclusion that the inhibiting function of guilt is limited to non-impulsive types of aggression, such as bullying and proactive aggression, but that this inhibiting function does not extend to reactive aggression.

The social nature of shame and guilt

Shame and guilt are not only associated with antisocial behaviours such as aggression, but they also have an important social function (Tracy & Robins, 2004, 2007). As described in Chapter 1, self-conscious emotions serve as a social feedback system. The experience of shame and guilt both indicate that goals such as preserving social status and group acceptance are threatened. Therefore, the consequences of lower levels of shame and guilt in adolescents with ASD and hearing loss could extend beyond aggression.

Shame and guilt can both be experienced when one transgresses against another. This norm-transgressing behaviour could jeopardize social relationships. Guilt motivates an individual to make amends and to learn from previous mistakes. Shame motivates the urge to escape, manifested by avoiding eye-contact and a collapsed body posture. The expression of both shame and guilt signal to others that the perpetrator

is aware of the mistake and the harm done (Tracy & Robins, 2004, 2007). In addition, the expression of these self-conscious emotions implicates that the perpetrator will probably not repeat this harmful behaviour in the future. Therefore, others are more willing to forgive or accept someone who displays shame and/or guilt (Giner-Sorolla, 2012). In other words, both shame and guilt are crucial in restoring relationships and achieving social acceptance. Therefore, lower levels of these self-conscious emotions could lead to problems maintaining social relationships and social acceptance. Both adolescents with ASD and adolescents with hearing loss have more difficulty in maintaining positive friendships and are more often rejected by peers (Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011; Wolters, Knoors, Cillessen, & Verhoeven, 2011). Future studies should examine the consequences of lower levels of shame and guilt for social functioning.

Considerations and directions for future research

This thesis raises several issues that need to be considered. First, a strong assumption is made in this thesis that ToM is a necessary requirement for the development of self-conscious emotions. Given that other studies have found lower levels of ToM in adolescents with ASD and adolescents with hearing loss, we inferred that these groups would be at risk for delay in the development of shame and guilt. However, while the theoretical foundation for a connection between ToM and self-conscious emotions is strong, no experimental studies have yet examined this claim. Only one recent study has directly assessed the link between ToM and guilt (Misailidi, 2018). This study found that a higher performance on ToM tasks was positively related to the ability to define guilt, and to the accuracy with which a retrospective guilt experience was reported. This suggests that ToM development should be encouraged from an early age, especially in adolescents with lower levels of self-conscious emotions. Future studies are needed to examine whether ToM interventions are successful in promoting the development of self-conscious emotions.

Second, given the lower levels of reported guilt in adolescents with ASD and adolescents with hearing loss, it is remarkable that they did not report elevated levels of aggression, except for higher levels of proactive aggression in adolescents with hearing loss. In addition, it is especially remarkable that adolescents with ASD and adolescents with hearing loss do not engage in more bullying, despite reporting higher levels of victimization. Note that adolescents in a community population (i.e. without hearing loss or ASD) who are more often victimized, tend to bully more often themselves. These findings suggest that adolescents with ASD and hearing loss seem well aware of societal rules, norms and values regarding socially accepted behaviours, such as levels of aggression within the social context. In other words, regardless of their

challenges with social access, also these adolescents seem to develop in a way as to contribute positively and constructively to their social environment, although more research is obviously needed to further strengthen this claim. Yet, lower levels of guilt cannot explain why these adolescents do not engage in more aggressive behaviours. The outcomes suggest that other mechanisms are in place in inhibiting aggression in these groups with less social access. Future studies are recommended to unravel which other factors are important in the prevention of aggression in groups with less social access.

A third point to consider is the way in which the role of social access is assessed in this thesis. A unique approach is employed; the relation between self-conscious emotions and adolescents aggression is examined in two groups with less social access, and compared with typically developing adolescents. Instead of including intrapersonal factors (e.g., autism symptom severity, the degree of hearing loss, communication quality, etc.), this approach enables to capture the constant day-to-day experience of diminished access to the social world from an early age. Based on this approach, it can be concluded that social access is important for the development of self-conscious emotions. This is why we should strive for a society in which all children are socially included. Research is often focused on how individuals with ASD or hearing loss can improve their social participation. But is it not everyone's responsibility to make the social world accessible for every child?

CONCLUSIONS

This thesis aimed to unravel the longitudinal contributions of shame and guilt on the development of adolescent aggression. The studies in this thesis have demonstrated that shame is a risk factor for the development of reactive aggression, and that guilt is an inhibiting force on the development of bullying and proactive aggression. Thus, adolescents with lower levels of guilt are at risk for developing bullying and proactive aggression.

Even though lower levels of self-conscious emotions were reported by adolescents whose access to the social world was diminished by ASD or hearing loss, the longitudinal relations in these groups between shame, guilt and aggression were similar to those in typically developing adolescents. Importantly, this indicates that guilt also functions as an important inhibitor for aggression in adolescents with less access to the social world. However, lower levels of self-conscious emotions in the two groups with less access to the social world do demonstrate that the development of self-conscious emotions depends on sufficient social input. In addition, more factors seem

into play for adolescents for which access to their social environment might come less easy, since they do not show heightened levels of aggression (except for proactive aggression in adolescents with hearing loss), despite lower (self-reported) levels of these self-conscious emotions.

Hopefully, this work will inspire other researchers to unravel which and to what extent social information is crucial for the development of self-conscious emotions, because this thesis has shown that guilt is an indispensable aspect in promoting a harmonious society.

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