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GUILT, SHAME, EMOTION REGULATION, AND SOCIAL COGNITION: UNDERSTANDING THEIR ASSOCIATIONS WITH PREADOLESCENTS' SOCIAL BEHAVIOR

Sanna Roos

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Guilt, shame, emotion regulation, and social cognition: Understanding their associations with preadolescents' social behavior

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ABSTRACT

In this thesis, two negatively valenced emotions are approached as reflecting children's self-consciousness, namely guilt and shame. Despite the notable role of emotions in the psychological research, empirical research findings on the links between guilt, shame, and children's social behavior – and particularly aggression – have been modest, inconsistent, and sometimes contradictory. This thesis contains four studies on the associations of guilt, shame, emotion regulation, and social cognitions with children's social behavior. The longitudinal material of the thesis was collected as a survey among a relatively large amount of Finnish preadolescents. In Study I, the distinctiveness of guilt and shame in children's social behavior were investigated. The more specific links of emotions and aggressive behavior were explored in Study II, in which emotion regulation and negative emotionality were treated as the moderators between guilt, shame, and children's aggressive behavior. The role of emotion management was further evaluated in Study III, in which effortful control and anger were treated as the moderators between domain-specific aggressive cognitions and children's aggressive behavior. In the light of the results from the Studies II and III, it seems that for children with poor emotion management the effects of emotions and social cognitions on aggressive behavior are straight-forward, whereas effective emotion management allows for reframing the situation. Finally, in Study IV, context effects on children's anticipated emotions were evaluated, such that children were presented a series of hypothetical vignettes, in which the child was acting as the aggressor. Furthermore, the identity of the witnesses and victim's reactions were systematically manipulated. Children anticipated the most shame in situations, in which all of the class was witnessing the aggressive act, whereas both guilt and shame were anticipated the most in the situations, in which the victim was reacting with sadness. Girls and low-aggressive children were more sensitive to contextual cues than boys and high-aggressive children. Overall, the results of this thesis suggest that the influences of guilt, shame, and social cognition on preadolescents' aggressive behavior depend significantly on the nature of individual emotion regulation, as well as situational contexts. Both theoretical and practical implications of this study highlight a need to acknowledge effective emotion management as enabling the justification of one's own immoral behavior.

Syyllisyys, häpeä, tunteiden säätely ja sosiaalinen kognitio: Yhteyksistä esimurrosikäisten sosiaaliseen käyttäytymiseen

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TIIVISTELMÄ

Tässä väitöskirjassa tarkastellaan kahta lasten itsetietoisuutta heijastavaa negatiivista tunnetta, nimittäin syyllisyyttä ja häpeää. Huolimatta tunteiden merkittävästä asemasta psykologisessa tutkimuksessa, empiiriset tutkimustulokset syyllisyyden ja häpeän yhteyksistä lasten sosiaaliseen käyttäytymiseen – ja erityisesti aggressiivisuuteen – ovat olleet vähäisiä, epäjohdonmukaisia ja toisinaan ristiriitaisia. Tämä väitöskirjatutkimus sisältää neljä osatutkimusta häpeän, syyllisyyden, tunteiden säätelyn ja sosiaalisten kognitioiden vuorovaikutuksesta lasten sosiaalisessa käyttäytymisessä. Tutkimuksessa käytetty ja kyselyn avulla kerätty pitkittäisaineisto koostuu suhteellisen suuresta joukosta esimurrosikäisiä suomalaisia lapsia. Osatutkimuksessa I tarkastelen syyllisyyden ja häpeän tunteiden erillisiä vaikutuksia lasten sosiaaliseen käyttäytymiseen. Tunteiden vaikutuksia erityisesti aggressiiviseen käyttäytymiseen tarkastellaan syvällisemmin osatutkimuksessa II, jossa tunteiden säätelyn oletetaan mahdollistavan syyllisyyden ja häpeän vaikutukset lasten aggressiiviseen käyttäytymiseen. Osatutkimus III puolestaan lähestyy tunteiden säätelyä rakenteena, joka mahdollistaa tilannekohtaisten eli aggressiivisten kognitioiden vaikutukset lasten aggressiiviseen käyttäytymiseen. Osatutkimuksissa II ja III saatujen tulosten valossa näyttää siltä, että heikon tunteiden hallinnan omaavilla lapsilla tunteiden ja sosiaalisten kognitioiden vaikutukset aggressiiviseen käyttäytymiseen ovat suoria, kun taas tehokas tunteiden hallinta tekee mahdolliseksi tilanteen uudelleenarvioinnin. Lopulta osatutkimuksessa IV tarkastelen kontekstien vaikutusta lasten ennakoimiin tunteisiin. Kuvitelluissa tilanteissa lapsi itse toimii aggressiivisesti samalla, kun läsnäolijoiden identiteetti sekä uhrin reaktiot ovat systemaattisesti manipuloituja. Lapset ennakoivat eniten häpeää tilanteissa, joissa koko luokka on todistamassa aggressiivista tekoa, kun taas sekä syyllisyyttä että häpeää ennakoitiin eniten uhrin reagoidessa surullisesti. Tytöt ja heikosti aggressiiviset lapset olivat poikia ja voimakkaasti aggressiivisia lapsia herkempiä kontekstieroille. Tämän väitöskirjatutkimuksen tulokset antavat viitettä siitä, että syyllisyyden, häpeän ja sosiaalisen kognition vaikutukset esimurrosikäisten lasten käyttäytymiseen riippuvat merkittävästi sekä yksilöllisen tunteiden hallinnan että tilannekohtaisten kontekstien luonteista. Sekä tutkimuksen teoreettiset että käytännön sovellukset korostavat tarvetta tunnustaa tehokas tunteiden hallinta tekijänä, joka mahdollistaa omien moraalinvastaisten tekojen oikeutuksen.

CONTENTS

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Viking Grace, 24.9.2014.

Sanna

LIST OF ORIGINAL PUBLICATIONS

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II **Roos, S.,** Salmivalli, C., & Hodges, E. V. E. (2014). *Emotion Regulation and Negative Emotionality Moderates the Effects of Moral Emotions and Externalization of Blame on Aggression.* Manuscript accepted for publication in the special issue of Merrill Palmer Quarterly on Moral Disengagement.

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IV **Roos, S.,** Salmivalli, C., & Hodges, E. V. E. (2011). Person × Context Effects on Anticipated Moral Emotions Following Aggression. *Social Development, Vol. 20*(4), 685-702. doi:10.1111/j.1467-9507.2011.00603.x

1. INTRODUCTION

At the beginning of the 2000s the number of psychological studies on moral emotions, such as guilt, shame, and pride, nearly doubled, as compared to the previous decade[1]. The need for a broader understanding of moral emotional functioning has been evident, even though the issue has been a preoccupation of moral philosophers throughout the past centuries. German philosopher Friedrich Nietzsche noted that the emotional pain and hurt felt as a consequence of moral transgression is necessary for an individual's moral development (Nietzsche, 1887/1969). Danish philosopher Søren Kierkegaard, on the other hand, critically pointed out pride as a reason for a person's unwillingness to serve the good in the world (Kierkegaard, 1845/2011). Indeed, moral emotions link moral standards and cognitions to moral behaviors through constant self-reflection and self-evaluation, such that the interests and welfare of others are accounted for (Tangney, Stuewig, & Mashek, 2007). As such, guilt and shame are distinguished as cognitively complex moral emotions with requirement of self-representations, as well as lacking discrete and universally recognized facial expressions (Lewis, Sullivan, Stanger, & Weiss, 1989; Tracy & Robins, 2007).

In order to gain a broader understanding of moral emotional functioning in children, studies that explore factors beyond behavioral manifestations of moral emotions are needed (see e.g., Blasi, 2005). In this thesis, I start by systematically evaluating the distinctiveness of guilt and shame in children's social behaviors (i.e., prosocial behavior, withdrawal, and aggression). After that, the joint effects of guilt, shame, and emotion management (i.e., emotion regulation and negative emotionality) on children's aggressive behavior are evaluated. Aggression is typically defined as behavior aimed at intentionally harming another person, being a costly phenomenon with well documented consequences for the perpetrator, victim, and the community at large (Killen & Coplan, 2011). In order to reach a deeper understanding of this domain-specific behavior, I continue by shifting the focus to children's aggressogenic thought-behavior associations. Finally, as social contexts are most likely to influence children's social behaviors, I finish this thesis by systematically evaluating context effects on children's anticipated emotions.

1 Google Scholar lists 40300 hits for search words "moral emotions psychology" during 1990-1999, whereas the amount of hits for a period 2000-2009 is 79300.

1.1 Guilt and shame in early adolescence

Feelings of guilt acknowledge personal responsibility for own behavior by involving causal attributions that are controllable (Weiner, 2006). Guilt typically motivates reparative actions to ease the tension created by own unacceptable behavior (Lewis, 1971; Tangney et al., 2007), and the approach motivation stimulated by guilt is most likely to strengthen social bonds and attachments (Baumeister, Stillwell, & Heatherton, 1994). In previous studies, guilt has been associated with constructive means of handling anger and low levels of aggression (Tangney & Dearing, 2002; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996), whereas a chronic lack of guilt has been identified as a hallmark among highly aggressive youth (Frick & White, 2008).

Feelings of shame, on the other hand, acknowledge negative evaluations of the global self, involving causal attributions that are uncontrollable (Weiner, 2006). The internal and stable focus of shame is likely to lead to a desire to withdraw or hide the self (Olthof, Ferguson, Bloemers, & Deij, 2004; Tracy & Robins, 2006), which is a reason why shame has been treated as a more maladaptive emotion, as compared to the approach-oriented guilt. In addition, feelings of shame may occasionally lead to defensive externalizing behaviors (Lewis, 1971; Stuewig, Tangney, Heigel, Harty, & McCloskey, 2010). For instance, studies on narcissism have indicated that feelings of shame can threaten the inflated yet fragile self-view and lead to aggressive responding (Baumeister & Bushman, 2003; Thomaes, Bushman, Stegge, & Olthof, 2008).

Early adolescence is a critical period in the development of guilt and shame. Although proneness to feel guilt and shame have been observed in children as young as 2-3 years (Kochanska, Gross, Lin, & Nichols, 2002; Mills, 2003), a phenomenological understanding of guilt and shame develops as late as from middle childhood on (Ferguson, Stegge, & Damhuis, 1991). Also, changes in the strength of emotions emerge, as guilt typically increases during adolescence, and shame decreases from adolescence into middle adulthood (Orth, Robins, & Soto, 2010; Walter & Burnaford, 2006). Overall, during early adolescence, changes emerge in the quality of the emotions as the perceived controllability of the situations, as well as emotion expectancies, increasingly affect moral decision making (Graham, Doubleday, & Guarino, 1984; Krettenauer, Jia, & Mosleh, 2011). As such, early adolescence provides a fruitful setting for exploration of guilt and shame in children's social behaviors.

Research findings have clearly indicated gender differences in children's guilt and shame, such that girls typically experience more guilt and shame than boys

(Kochanska et al., 2002; Walter & Burnaford, 2006). These differences could be due to the gender differences in socially shared expectations for moral behavior, as well as prototypical female reactions, such as rumination and self-blame (Bybee, 1998). In stressful situations, women typically report greater increases in overall negative affect than men (Kelly, Tyrka, Anderson, Price, & Carpenter, 2008; Nichols, Graber, Brooks-Gunn, & Botvin, 2006). However, not much is known about the eventual differential functioning of guilt and shame among girls and boys, and we need to explore, whether gender differences only apply to the mean level differences, or whether they extend to the overall functioning of guilt- and shame-proneness among girls and boys.

In addition to gender differences, the behavioral links of guilt and shame are also dependent on individual emotion management and cognitive resources. The quality of an individual's emotion management is vitally important, since moral reasoning is linked to moral action through affective self-regulatory mechanisms (Bandura, 2002). Children may, for instance, disengage from feelings of guilt and shame by focusing more strongly on personal consequences than on the victim's suffering (Menesini et al., 2003). Self-sanctions, such as anticipatory guilt and shame, keep the behavior in line with internal standards, but selective activation and disengagement of these sanctions permits different types of behavior by people with same moral standards (Bandura, 2002).The unique combination of moral emotions, emotion management, and cognitions may significantly influence children's social behavior, and therefore, a systematic evaluation of these motivational components is needed (see, Read et al., 2010).

1.2 What do we need to know about guilt and shame in children, and why?

The functioning of guilt and shame in children's social behaviors need to be systematically explored. In the following, I start by highlighting one of the major issues in the research of moral emotions, namely, the distinctiveness of guilt and shame in children's social behaviors. After that, domain-specific emotional and cognitive constructs are integrated into the studies, such that the joint functioning of guilt, shame, cognitions, and emotion management can be evaluated. Finally, little is known about the variation that different relationship contexts cause in children's moral emotional responding. Thus, relationship contexts, such as the identity of witnesses or victim's reactions during an aggressive incident, are approached as influencing the valence and the strength of children's anticipated emotions.

1.2.1 Distinctiveness of guilt and shame

Previous studies have, by utilizing confirmatory factor analyses (CFA), indicated that adults' guilt-proneness is empirically distinguishable from shame-proneness. Guilt is likely to be aroused in private transgressions involving negative evaluation of one's own behavior, whereas shame is likely to be aroused in public transgressions (Wolf, Cohen, Panter, & Insko, 2010). The two factor model has also been supported as the best fitting model for adult's guilt- and shame-proneness in achievement contexts (Thompson, Sharp, & Alexander, 2008). Yet, little is known about the measurement structure of guilt and shame during early adolescence. Although guilt and shame are conceptually distinct constructs, they are often highly correlated among children and young adults (*r*s > .60) (e.g., Ferguson, Stegge, Eyre, Vollmer, & Ashbaker, 2000; Harder & Zalma, 1990). Because the correlation between the two constructs may be even higher once measurement error is taken into account, the factor structures of guilt and shame need to be carefully evaluated.

Another limitation of previous studies concerns inconsistent behavioral correlates of guilt and shame. Sometimes guilt and shame have been positively associated with both approach and avoidance tendencies among children (Ferguson et al., 1991), which might be due to the developmental changes in emotion-behavior links, as well as methodological limitations of previous studies (e.g., emotions and behaviors have been assessed from the same source, or without controlling for the other emotion). However, when approaching adolescence, children's prosocial behavior has been positively linked to guilt-proneness, and negatively related to shame-proneness (Tangney, Wagner et al., 1996). Furthermore, children's externalizing tendencies and aggression have been negatively correlated with guilt-proneness, whereas shame-proneness has been positively related to both internalizing symptoms (e.g., withdrawal) and aggression (Ferguson et al., 2000; Ferguson, Stegge, Miller, & Olsen, 1999; Tangney, Wagner et al., 1996).

Finally, results from longitudinal studies suggest that adolescent guilt-proneness reduces, and shame-proneness increases, the likelihood of experiencing depression and engaging in delinquent behavior in late adolescence (Stuewig & McCloskey, 2005; Tilghman-Osborne, Cole, Felton, & Ciesla, 2008). However, due to the failures to control either for the initial levels of the outcome, or the overlap of the two emotions, interpretational ambiguity about the direction and the uniqueness of the effects between moral emotions and adjustment remains (Fleeson, 2007). In order to gain an understanding of the links between guilt, shame, and children's social behaviors, we need to simultaneously evaluate both concurrent and longitudinal relations of children's guilt and shame, as well as social behaviors.

1.2.2 Emotional and cognitive constructs linked to children's aggressive behavior

The effects of moral emotions on children's aggressive behavior are likely to depend on various emotional and cognitive processes. Moral emotions can be shaped, controlled, or regulated by relying on emotion regulation, negative emotionality, and moral disengagement (Blasi, 2005). Emotion regulation is generally based on (effortful) inhibitory control and attention, which enable altering one's own behavior, resisting temptation, and changing one's mood (Baumeister & Vohs, 2003; Eisenberg, Fabes, Guthrie, & Reiser, 2000). In particular, inhibition and self-control function as the basis for the voluntarily suppression of aggressive responding (Frijda, 1986). Indeed, children with poor emotion regulation are likely to engage in aggressive behaviors (Eisenberg et al., 2000; Runions & Keating, 2010; Valiente et al., 2003). Furthermore, a link between ineffective emotion regulation and cognitive underperformance has been documented (Baas, De Dreu, & Nijstad, 2011; Frijda, 1986; Johns, Inzlicht, & Schamder, 2008; Lawson & Ruff, 2004; Schmeichel, Vohs, & Baumeister, 2003). Since inefficient emotion regulation limits the cognitive resources available for reframing the situation, the effects of (moral) emotions on aggressive behavior should be straight-forward for children with poor emotion regulation. Children with effective emotion regulation, on the other hand, may utilize free cognitive resources available for reframing the situation. For instance, by blaming the victim, emotional arousal can be minimized and the moral disengager is freed from both emotional and cognitive self-sanctions (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Effective emotion regulation, thus, allows for efficient use and mastering of both emotions and cognitions, whereas the straight-forward effects of moral emotions are related to poor emotion regulation.

Even negative emotionality (e.g., depressive mood and frustration) has been associated with cognitive resources, such that high negative emotionality has been found to deplete executive resources by inhibiting cognitive abilities (Baas et al., 2011; Lawson & Ruff, 2004). Since inefficient emotion regulation limits the cognitive resources available for reframing the situation, the effects of moral emotions on aggressive behavior should be straightforward for children high in negative emotionality. Attenuated negative emotionality, on the other hand, has been reported by persons who are able to cognitively reappraise the situation (Memedovic, Grisham, Denson, & Moulds, 2010). Effective management of negative emotionality frees cognitive resources, such that efficient use of emotions and cognitions is allowed.

In addition to emotional and cognitive processes in children's social behavior (Lemerise & Arsenio, 2000; Keltner, Gruenfeld, & Anderson, 2003), more knowledge

is needed on domain-specific cognitions, as research has suggested that children draw domain-specific distinctions between divergent beliefs (Wainryb, Shaw, Langley, Cottam, & Lewis, 2011). Children's aggressive behavior needs to be explored by utilizing a motivational system involving aggressogenic thought-behavior associations (Read et al., 2010). The first interactive level of this motivational system is comprised by domain-specific beliefs, such as normative and self-efficacy beliefs for aggressive behavior (Read et al., 2010). Normative beliefs about aggression are cognitive standards concerning perceived acceptability of aggressive behavior (Huesmann & Guerra, 1997), whereas self-efficacy for aggressive behavior reflects children's beliefs about their ability and confidence to engage in aggressive behavior (Egan, Monson, & Perry, 1998). In the second level of the motivational system is the approach-avoidance system, which alters the course of whether aggressive cognitions are expressed or not (Keltner et al., 2003; Read et al., 2010). Emotions, such as frustration and anger, are particularly relevant as activators of approach system in the domain of aggression, as the attributions of hostile intent have been found to be related to higher levels of aggression only when children are prone to anger (Runions & Keating, 2010). The third level of the motivational system is comprised by a general inhibitory control system (Read et al., 2010). Aggressive cognitions are likely to be most strongly related to aggression when inhibitory control is low and anger is high (Runions & Keating, 2010). Thus, emotional and cognitive constructs link emotions with aggressive behavior and need to be evaluated in children's social behaviors.

1.2.3 Contextual effects on anticipated emotions

Anticipated emotions are outcome expectations providing information about the desirability of a hypothetical situation and reflecting the age-related development of morality (Krettenauer, Colosante, Buchmann, & Malti, 2014). Although several studies on anticipated moral emotions and children's social behaviors have been carried out during the past decades (for a meta-analysis, see Malti & Krettenauer, 2012), surprisingly little is known about the variation that different relationship contexts cause in the moral emotional responses of children when aggressing against their peers. This gap exists in spite of the fact that relationship contexts are known to activate peer-relational schemas with related affect. Positive relationships, such as friendships, are likely to mitigate children's emotions in stressful situations (Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-LaForce, 2006; Nummenmaa, Peets, & Salmivalli, 2008). In early adolescence, contexts are likely to affect emotions and behaviors through peer influences (Monahan, Steinberg, & Cauffman, 2009), since children are likely to choose the type of behavior that is of importance to their reference

group or significant others (Blanton & Burkley, 2008). That is, in order to understand the dynamics of moral emotions and the development of morality in children, the influence of both individuals and contexts needs to be examined simultaneously.

The context effects of witnesses are most likely to be present in the dynamics of shame. Empirical studies with adults have clearly demonstrated that shame is more affected by public exposure, as compared to guilt (de Hooge, Zeelenberg, & Breugelmans, 2007; Tracy & Robins, 2007). Although both guilt and shame are affected by the seriousness of the rule violation at issue, the intensity of shame is particularly influenced by the number and the identities of people witnessing the situation (Fessler, 2007). That is, when committing transgressions, children are more likely to experience shame when the audience is large and the witnesses are significant others.

Victim's reactions, on the other hand, are expected to contribute to the valence and intensity of anticipated emotions. For instance, attacking an aggressive target is expected to lead to more approval from peers as compared to attacking a nonaggressive target (Perry, Perry, & Rasmussen, 1986). Furthermore, children are less friendly and attribute more hostile intent toward an angry provocateur, as compared to a sad one (Lemerise, Gregory, & Fredstrom, 2005). Although guilt and shame are the emotions that are most likely to be influenced by witnesses and victim's reactions, the contexts are also expected to affect other emotions, such as pride, anger, and indifference. A systematic manipulation of contexts is carried out by utilizing the advantages of the computerized questionnaire. For instance, the names chosen by the respondent as his/her most liked classmates are incorporated by the programmed questionnaire to those hypothetical scenarios, which specifically evaluate the effects of most liked classmates. As such, the effects can be explored in an innovative manner.

2. AIMS OF THE STUDY

This doctoral dissertation aims at filling in the presented gaps in the research literature on children's moral emotions and aggressive behavior.

The research questions are as following:

1. Are guilt- and shame-proneness distinctively associated with children's social behavior?
2. Do emotion regulation and negative emotionality moderate the effects of moral (dis)engagement on aggressive behavior in children?
3. Are aggressogenic thought-behavior associations moderated by anger and effortful control?
4. Do contexts affect children's anticipated emotions following aggression?

3. METHOD

3.1 Participants and procedure

The sample of this research was chosen to present early adolescents, since the knowledge about the causes of moral emotions is developed through intensified peer interaction and the development of cognitive abilities, such as self-reflection (Lagattuta & Thompson, 2007; Piaget, 1929/1951). The respondents represented five out of six schools in the medium sized city located in Southwest Finland. An active parental consent was requested of total 438 children, and the final sample of the study consists of 403 students. The data were collected in three waves in spring 2008, fall 2008, and spring 2009, such that the participants were in Grades 4 and 5 during the first data collection (mean age 11.3 years). Some 5% of students had at least one parent born abroad.

At each time point, the participants filled in a computerized questionnaire during a one hour session. The wording of the questionnaire was checked by consulting two control children representing the same age group. The items of the questionnaire were grouped into logically coherent sections, but the order of the questions within each section was randomized. The participants were encouraged to respond according to their own thoughts and feelings, and the confidentiality of their responses was assured.

3.2 Measures

Several measures were used to collect the data.

Guilt, shame, pride, externalization of blame, and detachment (TOSCA-C). Proneness to experience moral (dis)engagement was measured by the Test of Self-Conscious Affect in Children (TOSCA-C; Tangney & Dearing, 2002). TOSCA-C is a self-report measure comprised by 15 scenarios (10 negative and 5 positive) describing everyday situations. The scenarios are followed by responses that assess guilt, shame, pride, externalization of blame, and detachment. For example, children read the following scenario, "You were talking in class, and your friend got blamed. You go to the teacher and tell him the truth." Children then responded to several statements tapping morally (dis)engaging constructs, such as "I'm the one who should get in trouble. I shouldn't have been talking in the first place." (guilt), "I would feel like I always get people in trouble." (shame), "I'd be proud of myself that I'm able to tell

Table 1. An Overview of Measures Used, Data Collections, and Participants in the Studies.

Study	Type of measure used	Data collection	Participants (n)
I	Peer reports on social behavior Self-reports on guilt- and shame-proneness	II and III	395
II	Peer reports on social behavior Self-reports on guilt- and shame-proneness Teacher reports on emotion management	II	307
III	Peer reports on social behavior Self-reports on aggressive cognitions Teacher reports on emotion management	II	311
IV	Peer reports on social behavior Self-reports on anticipated emotions	I	378

Note. Age is measured in years.

the teacher something like that." (pride), and "The teacher should have gotten the facts straight before he blamed my friend." (externalization of blame). Children rated each potential response on a 5-point Likert scale (1 = not at all likely, 2 = unlikely, 3 = maybe (half and half), 4 = likely, and 5 = very likely). The test was translated to Finnish by a certified translator, and slight changes were made to the items that did not apply to typical Finnish circumstances. The scales used in this thesis were computed by averaging respective items, and they all evidenced acceptable to good reliability (guilt: 15 items, alpha = .84; shame: 15 items, alpha = .79; pride: 8 items, alpha = .68; and externalization of blame 14 items, alpha = .69).

Anticipated emotions. Each child's anticipated emotional responses following aggressive episodes were measured with 27 hypothetical vignettes describing different conflict situations with the child aggressing against a target. In order to tap the context effects, witnesses and the reactions of the victims were manipulated in the content of the vignettes. The social context included three conditions: a) no one was present to observe the child aggress against the target, b) only most liked classmates were observers, and c) the whole class as observers. In order to target peer-effects on anticipated emotions, children were asked to check off the names of their three most liked classmates, and these names were then transferred into the hypothetical vignettes that tapped the effects of most liked classmates witnessing. Emotional reactions of the victim in response to the child's aggressive provocation were manipulated in the vignettes to include either: a) anger, b) no affect (neutral), or c) sadness. Each condition was fully repeated, such that all the possible nine combinations of different conditions were tapped three times through the vignettes (summing up to 27 vignettes). Situations included descriptions of aggressive scenarios such as "All of the class is queuing for lunch at the school canteen. You pinch another kid while

Age of participants	Criteria for subjects to be included in the study
11.8	Present in both of the time points
11.9	No missing values in any of the study variables
11.9	No missing values in any of the study variables
11.3	Neither missing values, nor an outlier

everybody's watching. The kid gets sad almost bursting to tears." Children were asked to imagine how they would feel as the aggressor in the event in question and to rate the intensity to which they would feel each of the five emotions: guilt, shame, pride, indifference and anger. The intensity of anticipated emotions was rated with a four-point scale ranging from 'not at all' (0.00) to 'a lot' (3.00). The scales evidenced good reliability (range of alphas was .79–.95).

Aggressogenic cognitions. Aggressogenic cognitions were measured by normative and self-efficacy beliefs about aggression. Children responded to six items tapping normative beliefs about aggression (e.g., "It is OK to take it out on someone you're mad at by making up a mean rumor about the person", [reversed], "In general, it is wrong to push or shove other people around" (adapted from Huesmann & Guerra, 1997). Items were rated on a 4-point scale (1 = strongly agree, 2 = somewhat agree, 3 = somewhat disagree, and 4 = strongly disagree). Scale items were scored and averaged so that higher scores represent greater aggression encouraging thought. Children also completed questions concerning self-efficacy for aggressive behavior (adapted from Egan et al., 1998). The scale consisted of five items, such as "A kid won't let you play with a game you want to. Hitting the kid and grabbing the game is *easy* for some kids, but other kids would find it *difficult* to hit the kid and grab the game", and "For some kids it is *easy* to intentionally leave another kid outside of the peer group, but other kids would find it *difficult* to leave the kid outside". Children responded on the easiness or difficulty of the behavior described on a 4-point scale (1 = very easy, 2 = easy, 3 = difficult, and 4 = very difficult). Scale items were reverse coded and averaged so that higher scores represent greater aggression encouraging thought. The internal consistency for normative beliefs was low but acceptable (alpha = .63), and for self-efficacy beliefs it was good (alpha = .83).

Peer reports of social behavior. Children's social behaviors were measured by peer nominations. Children checked off the names of same- and cross-sex classmates who manifested the behavior described in the items. Prosocial and withdrawn behavior were assessed with three items each ("Helps others", "Cheers up others", "Does nice things to others" and "Seems lonely at school", "Seems sad at school", "Plays alone a lot") (Crick & Grotpeter, 1995). Six behavioral descriptors tapped aggression ("Uses physical force to dominate", "Gets others to gang up on a peer", "Threatens others", "When teased, strikes back", "Blames others in fights" and "Overreacts angrily to accidents"; Dodge & Coie, 1987). For each child and item, the proportion of received nominations of the total possible received nominations was computed. Internal consistencies of the total prosocial behavior, withdrawal, and aggression scales were good (range of alphas was .89-.94). In study IV, children were divided into the groups of low and high aggressive children by median split by sex, which was done for the ease of presentation.

Teacher reports on emotion regulation and negative emotionality Teachers completed the Early Adolescent Temperament Questionnaire-Revised (EATQ-R; Ellis & Rothbart, 1999) to assess each child's emotion regulation and negative emotionality. The test was translated to Finnish by a certified translator, and slight changes were made to the items that did not apply to typical Finnish circumstances. Emotion regulation was measured by 11 items tapping inhibitory control and attention (e.g., "Has a hard time waiting his/her turn to speak when excited." [reversed], and "Pays close attention when someone tells her/him how to do something.") Negative emotionality was tapped by five items of depressive mood and six items on frustration/anger (e.g., "Feels like crying over very little on some days.", and "Gets very irritated when someone criticizes her/him."). Items were rated on a 3-point scale (1 = almost never, 2 = sometimes, and 3 = often). Scale items were averaged and the internal consistencies for emotion regulation, negative emotionality, and frustration/anger were good (alpha = .82, .76, and .79. respectively).

3.3 Statistical analyses

In addition to the basic statistical analyses, which were performed using SPSS software package versions 14.0, 16.0, and 21.0, specific analyses were utilized to explore the research questions of each particular study. In Study I, the analyses of structural equation modeling were conducted on the raw data using the Mplus software package version 5 with maximum likelihood (ML) estimation. ML estimators maximize the likelihood of the observed sample by using full-information method (Kline, 2005). A series of CFA was used to test the hypothesis on two-factor model of guilt- and shame-proneness

and to examine the invariance of the model across gender and over time. Also, the distinct associations of guilt and shame to children's social behaviors were tested. To describe the model fit following indexes were used: χ^2-value; root mean square error of approximation (RMSEA; model fit supported if RMSEA ≤ .06), comparative fit index (CFI; model fit supported if CFI ≥ .95), and the nonnormed fit index (NNFI; model fit supported if NNFI ≥ .95) (see, e.g. Brown, 2006). The χ^2 difference test was used to compare nested model, such that the fit of the model with a freely estimated parameter (parent model) was compared to the fit of the model with the subsequent parameter constrained (nested model). A significant difference was an indication of the parent model having a better fit to the data, as compared to the nested model (Brown, 2006). In addition, measurement invariance was tested by the RMSEA model test in order to evaluate the equivalence of measurement properties across subgroups, such as gender. In RMSEA model test, the RMSEA values of the compared models should fall within one another's 90% RMSEA confidence intervals (see, Little, 1997), and the change in the CFI should be less than .01 (see, Cheung & Rensvold, 2002).

In Study II and Study III, regression analyses were conducted by using SPSS software package, allowing for the evaluation of the moderator variables. In Study II, a series of multiple regressions were conducted, such that the product term of one emotion and one emotion management construct was evaluated after controlling for their main effects, the other emotion constructs, gender and grade. In Study III, two multiple regressions were conducted on one aggressogenic cognition (i.e., normative or self-efficacy beliefs about aggression) and one emotion management (i.e. anger or effortful control) variable. All variables were centered through standardization prior to computing product terms. Simple slopes analyses (Aiken & West, 1991) were utilized to explore the nature of the significant interactions.

In Study IV, a mixed model approach to the General Linear Model (GLM) was used to calculate repeated measures ANOVAs. Repeated-measures designs reduce overall variability by using a common subject pool for all treatments, and at the same time remove subject differences from error term by partitioning out the variability due to individual differences (Howell, 2013). Context (witnesses, victim's reactions) and person × context effects were tested, such that ten (five for each context) mixed ANOVAs were conducted with anticipated guilt, shame, pride, indifference, and anger each taking a turn as the dependent variable. Between-subjects factors were sex (boys, girls) and aggression level (low, high), and the within-subjects factor was either the social context of witnesses (no witnesses, most liked peers witnessing, all of the class witnessing) or the victim's reaction (neutral, sad, angry).

4. OVERVIEW OF THE EMPIRICAL STUDIES

STUDY I

Roos, S., Hodges, E. V. E., & Salmivalli, C. (2013). Do guilt- and shame-proneness differentially predict prosocial, aggressive, and withdrawn behaviors during adolescence? *Developmental Psychology, 50*(3), 941-946.

In this study, the distinctiveness of guilt and shame in terms of their measurement structures and their differential relations to social behavior among children (*N* = 395, mean age = 11.8 years) was systematically examined. Structural equation modeling was used to analyze self-reported guilt- and shame-proneness together with peer-reported prosocial behavior, withdrawal, and aggression. Results indicated that guilt and shame are distinct but correlated latent constructs that are invariant across gender and time. The distinctiveness of guilt- and shame-proneness was also supported by their differing associations with peer-reported social behaviors, such that guilt was positively linked to prosocial behavior both concurrently and longitudinally, whereas shame, as a more maladaptive emotion, predicted prospective decreases in prosocial behavior. The adaptive nature of guilt was also supported by its concurrent negative association with aggression. Although guilt-proneness did not predict decreases in aggression over time, it may serve to maintain low levels of aggression as it uniquely correlated with lower levels of aggression at each time point. It seems then that the distinctive links of guilt- and shame-proneness to social behaviors become more apparent in the developmental changes across time, as compared to concurrent relations, and when accounting for the overlap between the two emotions. All in all, the study adds important knowledge on the unique effects of guilt and shame on children's social behaviors, highlighting the adaptive nature of guilt, as compared to the more maladaptive shame, and urging for further investigations on the possible joint effects of emotions, cognitions, and regulation mechanisms.

STUDY II

Roos, S., Salmivalli, C., & Hodges, E. V. E. (2013). *Emotion Regulation and Negative Emotionality Moderate the Effects of Moral Emotions and Externalization of Blame on Aggression.* Manuscript accepted for publication in the special issue of Merrill Palmer Quarterly on Moral Disengagement.

The effects of moral (dis)engagement mechanisms on aggressive behavior were investigated among 307 Finnish 5th and 6th graders (mean age = 11.9 years). Self-reported guilt- and shame-proneness were expected to reflect moral engagement and reduce levels of peer-reported aggressive behavior, whereas self-reported externalization of blame was hypothesized to function as a moral disengagement mechanism with links to greater aggressive behavior. To test the primary hypotheses, a series of multiple regressions were conducted with aggression serving as the criterion variable. The results indicated that the relations between guilt and shame with aggressive behavior were moderated by emotion regulation. In both cases, the aggression-inhibiting function of guilt and shame was evident only when children had difficulty regulating their emotions. Children who were able to effectively regulate their emotion were seemingly able to disengage from the aggression inhibiting effects of the moral emotions. Furthermore, children prone to feel shame were more likely to externalize blame, as compared to guilt-prone children. However, negative emotionality (i.e., depressive mood and frustration) moderated the link between externalization of blame and aggression, such that high negative emotionality was linked to lower levels of aggression. For children low in negative emotionality, both shame and externalization of blame indicated an aggression supporting tendency. Both shame and externalization of blame may lead to aggression when children are able to engage in cognitive reappraisals of negatively charged situations. All in all, children who can quickly manage their emotions appear to be able to control the functioning of moral emotions as inhibiting behaviors that cause harm to others. The results highlight the fact that emotion regulatory capabilities and moral (dis) engagement mechanisms work in conjunction to guide behavior.

STUDY III

Roos, S., Hodges, E. V. E., Peets, K., & Salmivalli, C. (2014). ***Anger and Effortful Control Moderate Aggressogenic Thought-Behavior Associations.*** **Manuscript accepted for publication in** ***Emotion and Cognition*****.**

The effects of anger and effortful control on aggressogenic thought-behavior associations were investigated among a total of 311 Finnish 5th and 6th graders (mean age = 11.9 years). Self-reported aggressive cognitions (i.e., normative and self-efficacy beliefs about aggression) were expected to increase peer-reported aggressive behavior. Teacher reported emotion management (i.e., anger and effortful control) were hypothesized to moderate the effects of aggressive cognitions on aggression, such that the effects were expected to be straight-forward for children, who are ineffective

in emotion management. Results supported the hypotheses, such that stronger effects of aggressive cognitions were found for condition of high anger and low effortful control. Furthermore, with high anger and high effortful control, self-efficacy was negatively related to aggression. Thus, aggression is a result of a complex motivational system, being jointly influenced by aggressive cognitions and emotion management. The findings support the importance of examining cognitive and emotional structures jointly when predicting children's aggressive behavior.

STUDY IV

Roos, S., Salmivalli, C., & Hodges, E. V. E. (2011). Person × Context Effects on Anticipated Moral Emotions Following Aggression. *Social Development, Vol. 20*(4), 685-702.

This study was conducted to investigate person (sex, aggression level), context (witness type, victim reactions), and person × context effects on children's anticipated moral emotions following hypothetical acts of aggression against a peer. Children (N = 378, mean age = 11.3 years) were presented a series of hypothetical vignettes in which the presence of witnesses (no witnesses/ most liked classmates/ all of the class) and victim's reactions (neutral/ sad/ angry) were manipulated. The mixed model approach to the GLM repeated measures procedure was used to test the context effects. Overall, boys reported more pride than girls, and girls and low aggressive children reported more guilt and shame than boys and high aggressive children. When examining whether contextual factors contribute to the variation in anticipated emotions, the results indicated that shame (but not guilt) and anger are affected by the quantity and identity of witnesses in the situation. Overall, children anticipated the highest mean levels of shame and anger when all classmates were present and the least when the identities of the witnesses were specified to be children's own most liked peers. With respect to victim's reactions, most guilt and shame were anticipated with victim's sad reactions. Victim's angry reactions caused the most indifference and anger. As for person × context effects, boys differentiated between witnesses, with the least shame anticipated when among their most liked classmates. Sex also qualified the effects of victim's reactions on guilt and shame, such that girls made a stronger distinction than boys for their anticipated emotions. Furthermore, low aggressive children differentiated more strongly between witnesses for anger, as compared to high aggressive children, such that the presence of liked peers appeared to assist relatively nonaggressive children in their regulation of anger. Low aggressive children also differentiated more strongly between victim's reactions for shame, as compared

to high aggressive children, such that more shame was expected when the victim reacted with anger than with neutral emotion. Taken together, the results indicate that aggressive children may encode situations differently than nonaggressive children, and that a person might adapt to a social situation by differentiating among contexts. Thus, person characteristics combined with situation specific emotional responding promote adaptive and maladaptive behavioral outcomes in children.

5. DISCUSSION

Although previous studies have recognized emotions as central factors in the process through which cognitions are being actualized into social behavior (see, e.g. Lemerise & Arsenio, 2000), the effects and mechanisms of guilt and shame in children's social behaviors have remained to be unexplored in a systematic manner. In the present study, a deeper understanding was gained about the distinctiveness of children's guilt and shame in relation to behavioral outcomes. Also, individual emotional and cognitive factors were incorporated in the analyses to evaluate the significance of the factors in children's aggressive behavior. Finally, a comprehensive picture of situational effects on children's anticipated (moral) emotions was gained by systematically manipulating context influences.

5.1 Distinct behavioral associations of guilt and shame

One of the objectives of this study was to evaluate whether guilt- and shame-proneness can be reliably distinguished among children, and whether they differentially predict prosocial, aggressive, and withdrawn behaviors in theoretically expectable ways. In Study 1, evaluation of the measurement structures provides support that guilt and shame are distinct, but correlated constructs. Their invariance across time suggests that the latent constructs are comparable over a six-month period for fifth and sixth grade students, and longer-term longitudinal studies will be needed to appropriately evaluate whether guilt- and shame-proneness might become more distinguishable as children grow older. The measurement invariance across gender, on the other hand, rules out the possibility that incomparable measurement structures in guilt and shame constructs between boys and girls account for previously observed gender differences indicating that girls are more prone to experience guilt and shame (Bybee, 1998; Roos, Salmivalli, & Hodges, 2011).

The distinctiveness of guilt and shame is also supported by their differing associations with peer-reported social behaviors. Results of this study indicate that guilt has an adaptive nature with links to increasing prosocial behavior, whereas shame is a more maladaptive emotion, as it predicted prospective decreases in prosocial behavior. It seems that the distinctive links of guilt and shame to adaptive behavior become apparent in the developmental changes across time, and when accounting for the overlap that exists between them. The adaptive nature of guilt is also supported by its negative concurrent association with aggression. Finally, proneness to feel guilt did

not predict decreases in aggression over time. However, guilt may serve to maintain low levels of aggression as it uniquely correlated with lower levels of aggression at each time point. Thus, guilt seems to reduce the likelihood of children's engagement in maladaptive behavior, whereas shame-proneness is linked to more negative prospects in the context of prosocial behavior. In order to further explore the functioning of guilt and shame, the role of children's emotion regulation capabilities need to be investigated (see e.g., Tilghman-Osborne et al., 2008), and this was done in Study II.

5.2 Emotion management moderate moral (dis)engagement on children's aggressive behavior

In Study II, the links between moral (dis)engagement and aggressive behavior in children were examined. In previous studies, the aggression inhibiting effects of guilt and shame, as well as the aggression supporting effect of externalization of blame, have been modest, inconsistent, and sometimes contradictory (e.g., Baumeister & Bushman, 2003; Stuewig et al., 2010). The results of this study indicated that the effects of guilt- and shame-proneness on aggressive behavior were, indeed, moderated by emotional regulation, such that the aggression-inhibiting function of moral emotions was evident only when children had difficulty regulating their emotions. The results for negative emotionality further confirmed the influence of emotion management on aggressive behavior. That is, proneness to experience guilt and shame were inhibitive of aggression to the extent that children were also reported by teachers as high in negative emotionality, indicating the straight-forward links from guilt and shame on aggression for children with poor emotion management.

Children who were able to effectively manage their emotion (as indexed by high levels of effortful control and low levels of negative emotionality) were seemingly able to eliminate the inhibiting effects of guilt and shame. That is, effective regulation allows children to disengage from the aggression-inhibiting function of guilt and shame by reframing the situation. Moreover, results clarify the inconsistent shame-aggression associations reported in the literature (e.g., Menesini et al., 2003; Tangney et al., 1992) by indicating that the self-blame associated with shame may be turned into outward aggression, such that an immediate relief to protect ego is provided (Thomaes et al., 2008). Indeed, shame is only associated with greater aggression when emotions are effectively regulated.

Surprisingly, morally disengaging externalization of blame was not directly linked to aggression (Bandura et al., 1996), being consistent with the findings of Stuewig et

al. (2010) and indicating that shared method variance may be responsible for prior observed associations. That is, externalization of blame was found to be related to self-reported aggression but not to aggression reported by teachers. Furthermore, externalization of blame was related to greater levels of aggression for children who rarely show signs of negative emotionality indicating that externalization of blame may lead to aggression among children who are able to cognitively reappraise the negatively charged situations.

The missing direct link between externalization of blame and children's aggressive behavior could also partly be explained by the fact that many children most likely do not morally disengage in the context of aggression. Indeed, guilt-prone children were less likely and children prone to experience shame were more likely, to externalize blame. These differential associations are consistent with previous studies indicating that, in order to minimize painful feelings raised by threats to self-esteem, feelings of shame are regulated by externalizing the blame (Ferguson et al., 1999; Stuewig et al., 2010; Tangney et al., 1996). Since effective emotion management allows for cognitive disengagement processes to operate, aggressogenic thought-behavior associations may further clarify our understanding of the motivational system influencing children's aggressive behavior.

5.3 Anger and effortful control moderate the effects of aggressive cognitions on children's aggressive behavior

In Study III, children's aggressive cognitions were expected, and found, to predict aggressive behavior, such that normative and self-efficacy beliefs for aggression were most strongly related to aggression when children were prone to anger and low in effortful control. The results are consistent with Read et al.'s (2010) theorizing, highlighting how the actualization of children's aggressive cognitions is highly dependent on the tendencies to experience anger and control emotions. It seems that poor emotion management is related to straight-forward effects of both (moral) emotions and aggressive cognitions on children's aggressive behavior, whereas effective emotion management allows children to more efficiently and flexibly manage these constructs (on moral emotions and emotion management, see Study II).

The results extend previous findings on the direct links between aggressive cognitions and aggressive behavior (Davis-Kean et al., 2008; Runions and Keating, 2010), by verifying the jointly moderating effects of anger and effortful control on these links. Furthermore, anger failed partly to qualify aggressogenic thought-

behavior associations under the condition of high effortful control (except for self-efficacy in the condition of high anger and high effortful control). Likewise, aggressogenic cognitions failed to support aggressive behavior for children relatively low in anger and high in effortful control. Finally, under the conditions of high anger and high effortful, self-efficacy is associated with *less* aggression. That is, even among highly anger-prone children, effortful control appears to completely override the normally aggression supporting effect of high self-efficacy. As highlighted by Runions and Keating (2010), the nature of the emotion management does seem to make an important contribution to the links between aggressive cognitions and aggression and should, therefore, be integrated in future studies on children's aggressive behavior.

In this study, the effects were produced by utilizing two different indexes of aggressive cognitions, namely normative and self-efficacy beliefs about aggression. Further confidence in the results is supported by the fact that the constructs were measured by both peers (aggressive behavior), teachers (emotion management), and the self (aggressive cognitions). All in all, aggressive cognitions work in conjunction with emotion management to guide children's aggressive behavior, which emphasizes the need to properly understand the conditionality of children's expression of aggressogenic thought. However, social-contextual factors may significantly contribute to children's cognition-behavioral functioning (Peets, Hodges, & Salmivalli, 2008; Peets, Hodges, & Salmivalli, 2011a), which is why the focus in Study IV is shifted to the effects of social context on children's anticipated emotions.

5.4 Identity of witnesses and victim's reactions affect children's anticipated guilt and shame

In Study IV, the effects of person characteristics (sex and aggression level), contexts (presence of witnesses and victim's reactions), and the interactions of persons and contexts on anticipated emotions following hypothetical acts of aggression against a peer were evaluated. Consistent with prior work, and as expected, girls and low aggressive children reported more guilt and shame than boys and high aggressive children (Ferguson et al., 2000; Kochanska et al., 2002; Menesini et al., 2003; Walter & Burnaford, 2006). The results also indicated that shame (but not guilt) is affected by the quantity and identity of witnesses. Overall, children anticipated the highest mean levels of shame when all classmates were present. When the identities of the witnesses were specified to be children's own most liked peers, a majority of which typically are nominated from the child's closest peer group (Farmer et. al, 2009), the least amount of shame was anticipated. These results are consistent with previous studies indicating

that the presence of a good friend inhibits emotional arousal in stressful or conflict situations (Burgess et al., 2006; Hartup, Laursen, Stewart, & Eastenson, 1988). With respect to victim's reactions, the most guilt and shame were reported in the condition of victim's sad reactions, and the least for victim's neutral reactions.

Sex further qualified the effect of witnesses on anticipated shame. Only boys differentiated between witnesses, with the least shame anticipated when among their most liked classmates, which could indicate that boys not only anticipate high levels of affective group identification in the context of most liked classmates witnessing an aggressive scenario, but they also might use their most liked classmates as a guide for what is normative (for variation in peer influence, see Bukowski, Velasquez, & Brendgen, 2008). Girls, on the other hand, anticipate high levels of shame regardless of witnesses, which could be due to the nonnormative nature of overt aggression among girls (Archer, 2004; Card, Stucky, Sawalani, & Little, 2008). Sex qualified the effects of victim's reactions on guilt and shame such that girls made a stronger distinction than boys for their anticipated emotions. For girls, the most guilt and shame were anticipated when the victim was sad, followed by anger, and then neutral reactions. For boys, anticipated guilt and shame were significantly elevated when the victim was sad as compared to the other reactions, in which no distinction was made. Girls, on the other hand, seem to anticipate clearly negative consequences from victim's displays of either sadness or anger.

Low aggressive children differentiated more strongly between conditions than high aggressive children. Although both high and low aggressive children anticipated the most shame for victim's sad reactions, low aggressive, but not high aggressive, children also differentiated between the remaining contexts (with more shame expected when victims reacted with anger than with neutral emotion). These results are consistent with findings that aggressive children may encode situations differently than nonaggressive children (Crick & Dodge, 1994), and impulsive adolescents (e.g., who act without thinking about situational constraints) are also more likely to act on aggressive encouraging cognitions than low impulsive adolescents (Fite, Goodnight, Bates, Dodge, & Pettit, 2008).

5.5 Strengths

The strengths of this research can be derived from all of the four studies. The systematic evaluations on the distinctiveness of guilt and shame in Study I result in a broader understanding of the functioning of the two emotions in children's social behaviors.

Furthermore, the possibility of shared method variance in observed emotion-behavior associations is ruled out by the use of self- and peer-reported measures in Studies I and IV. In Studies II and III, self-, peer-, and teacher-reported were utilized.

In Study II, emotion-behavior links were further evaluated by incorporating emotional and cognitive mechanisms into the study. Emotion management was evaluated by utilizing two indexes of emotion regulation, resulting in findings which challenge the approach supportive of exclusively positive influences of effective regulation on children's social behavior. Study III adds to these findings on emotional and cognitive links by incorporating aggressive cognitions to the study. In Study III, two different indexes of aggressive cognitions (i.e., normative and self-efficacy beliefs about aggression) are explored, such that an operation of a complex motivational system comprised by aggressive cognitions, anger, and effortful control can be evaluated. Not only are previous findings on aggressogenic thought-behavior associations supported by the results of this study, but the central inhibitory role of effortful control is highlighted. The nature of the emotion management, thus, makes an important contribution to the links between domain-specific cognitions and behaviors, being verified by the Studies II and III.

Finally, Study IV shed light on the functioning of moral emotions in children by integrating contexts into the approach. Not only were person effects evaluated, but the effects of contexts and the interactions between person and context effects were explored. Since social behaviors are inevitably dependent on the situational contexts, the study contributes to a broadened approach on children's emotional responding by capturing the variability of social situations. The strengths of this study culminate in the presentation of hypothetical situations including a variety of combinations with manipulated identities of the witnesses, as well as victim's reactions. The experimental approach of Study IV allows for investigations of contextual effects shedding light on the mechanisms concerning inhibiting and promoting effects of various anticipated emotions.

Overall, relying on both multiple informant approach and validated measures allows for reliable results on the unique concurrent and longitudinal effects of guilt and shame on children's social behaviors. The practical implications of this study highlight the centrality of emotions when, for instance, providing feedback at school. The feedback supportive of guilt and prosocial behavior is likely to be focused on children's behavioral responding, rather than personal characteristics. Likewise, shame-evoking feedback in the context of failure is likely to be related to one's own

low *ability*, rather than own insufficient *effort* (evoking guilt) (Weiner, 2006). Thus, knowledge on the functioning of children's guilt and shame is of central practical importance, for instance, at school.

In this study, guilt and shame were conceptualized and evaluated as dispositional or anticipated emotions guiding children's social behaviors. In contrast to situation-specific momentary emotions, proneness to an emotion reflects individual emotional tendencies across a range of contexts (Tangney, Stuewig, & Mashek, 2007; Tilghman-Osborne, Cole, Felton, & Ciesla, 2008). That is, emotions are closely linked to personality factors, such that the temperamental qualities of guilt-prone children have been linked to fearfulness and reactiveness, whereas shame-prone children have indicated a need for approval and acceptance by others (Lagattuta & Thompson, 2007; Rangganadhan & Todorov, 2010). Not only do the results of Studies I and II support the indications of guilt- and shame-proneness as inhibiting aggressive behavior concurrently, but in Study I the distinct associations with prosocial behavior become significant even longitudinally.

In addition to dispositional influences, various motivational structures, such as cognitive-affective units (i.e., emotion regulation, negative emotionality, and aggressive cognitions) are likely to guide behaviors (Read et al., 2010). Studies II and III incorporate motivational units to this research, and in Study IV the use of anticipated emotions to motivate and guide children's decision making is evaluated. The results of Study IV indicate that the anticipated guilt and shame do seem to guide children in various contexts highlighting gender and aggression level differences. The conceptual and functional differences of momentary, dispositional, and anticipated emotions need to be notified.

5.6 Limitations

This research contains several limitations. The narrow age range only provides a limited picture of the development squeal of guilt and shame in children, and generalizations to other developmental periods cannot be made. Furthermore, the longitudinal component may have been too short to allow for sufficient variation in individual differences in change of emotions and behaviors. That is, the high stabilities of social behaviors over the relatively short period of time may have promoted the failure to detect further longitudinal effects in Study I. In the rest of the studies, only concurrent relations were explored with no evaluations available for the directions of the effects.

Further limitations concern methodological issues. Observational methodologies could have been utilized to ensure that the findings apply to real life situations. Furthermore, the measure of negative emotionality utilized in Study II included items describing depressive mood and frustration, although the two factors might have differential influences on moral emotion-behavior associations in children. If measured separately, tendencies to experience depressive mood might minimize moral emotion-behavior associations, whereas frustration might enhance these associations. In Study IV, the grouping of individuals is overlapping, since most liked classmates are inherently included in the group containing all of the class. Thus, the groups are not independent.

In all of the studies, other person characteristics, such as popularity (Mayeux & Cillessen, 2008), could have been incorporated in the studies, explaining further increases in emotions and behaviors. Effects may also have been more detectable, if children had been asked to think of the target representing a specific gender. Also, reactively and proactively (or relationally vs. overtly) aggressive children might have differentially responded to the measures used in the studies (Card & Little, 2007). Finally, although the effects of the classmates on children's anticipated emotions were evaluated, the influence of peers on the development of guilt- and shame-proneness in children should be more systematically investigated. The peer influences might function differently for the two emotions.

5.7 Directions for future research

Future research could enhance the variability in individual differences in change in the social behavioral outcomes by a) using longer time intervals, or b) incorporating transitional designs, such as the transition from elementary to middle school. Furthermore, the affective relationship with the target (whether liked or disliked) may also play an important role in whether guilt and shame inhibit, and externalization of blame elicits, aggressive behavior toward the target (cf. Peets, Hodges, & Salmivalli, 2008, 2011b). In the future, measures that capture behaviors toward each interaction partner should be collected alongside guilt and shame so that such relationship-specific connections can be evaluated. This kind of approach might also unveil transactional relations, for example, between guilt and aggression, through processes of moral disengagement (Bandura et al., 1996).

An interesting addition to studies on guilt and shame is pride, which is a positively valenced moral emotion providing feedback based on the value of the person's social

behaviors (Tangney, Stuewig, & Mashek, 2007). Previous studies have indicated that pride could refer to both self-aggrandizing alpha pride with attributions that are internal, stable, and uncontrollable ("I'm proud of who I *am*"), as well as to prosocial, achievement-oriented beta pride with attributions that are internal, unstable and controllable ("I'm proud of what I *did*") (Tracy & Robins, 2007). Due to this distinction, pride has been linked to a variety of behaviors, ranging from aggression to prosocial behavior (Carver, Sinclair, & Johnson, 2010; Fossati, Borroni, Eisenberg, & Maffei, 2010; Tracy, Cheng, Robins, & Trzesniewski, 2009). The potential for differential functioning of alpha and beta pride in relation to aggression, depending on emotion regulation and negative emotionality warrants further attention. Alpha pride has been linked to aggressive behavior, whereas beta pride is associated with prosocial behavior (Carver et al., 2010; Tracy et al., 2009; Tracy & Robins, 2007). Future research might also focus on the domains in which children feel pride. Aggression, for example, might be more strongly linked to individual differences in taking pride through dominance whereas taking pride in achievement related domains should more strongly influence achievement strivings. In other words, the domain-specific nature of pride-behavior relations should be explored in the future studies.

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APPENDICES

APPENDIX A: ONLINE APPENDIX A FOR STUDY I

We started by specifying a baseline model utilizing data from both time points with dispositional guilt and shame as correlated latent variables (see Figure A1). Three parcels with identical item combinations across time were created for each latent variable by letting the loadings of the items guide the procedure, such that the relative strengths of the loadings at each time point were taken into account (Little, Cunningham, Shahar, & Widaman, 2002). Following the recommendations of Little et al. (2002), the three highest loading items were used to anchor the three parcels. After that, the next highest loading items were added in an inverted order, such that the highest loading item of the first step ended up matching the lowest loading item of the second step. This procedure was repeated until all the items were utilized and resulted in identical item combinations for parcels representing guilt and shame at both time points.

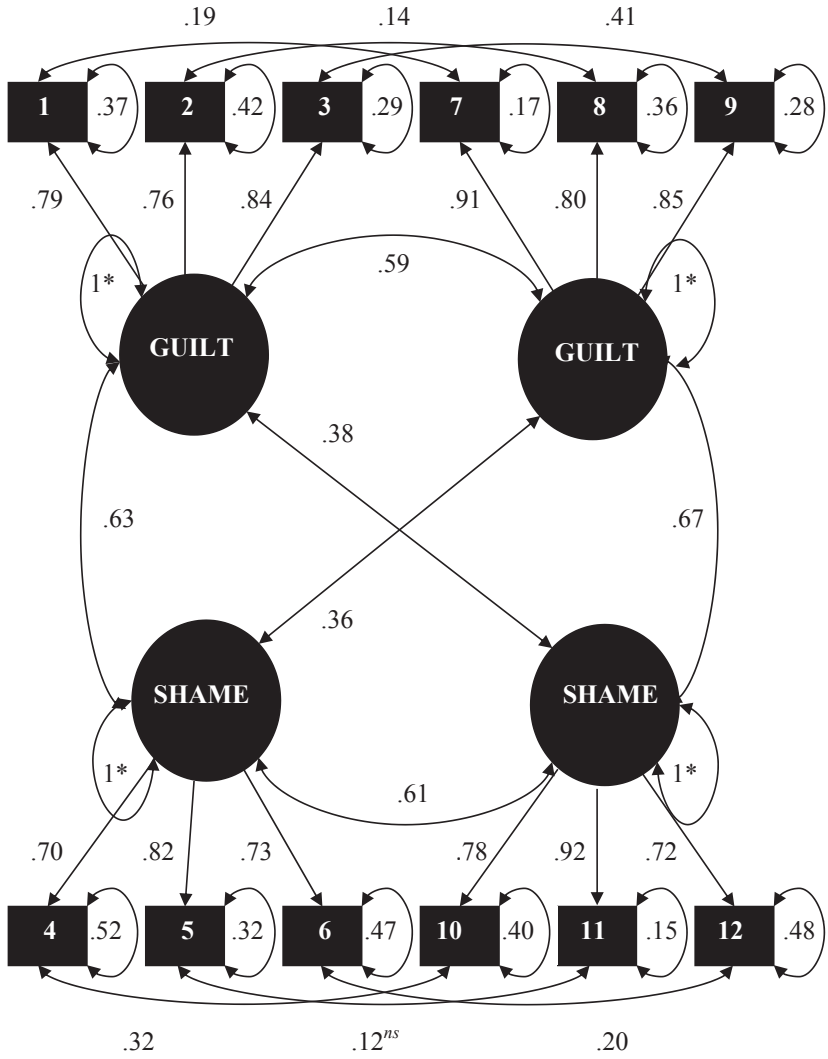
In the baseline model, three guilt parcels loaded on one factor and three shame parcels on another at each time point (see Figure A1). The residual variances of the parcels with identical item combinations were allowed to correlate across the time points to account for temporally stable indicator-specific variances. This resulted in a significantly better model fit as compared to the model with uncorrelated residuals across time points, $\Delta\chi^2(6) = 74.91$, $p < .001$. Furthermore, all latent factors were free to correlate both concurrently and across the time points. In order to identify the model, the fixed factor estimation method was utilized by fixing one of the factor loadings in each factor to 1.0. No equality constraints were imposed in the baseline model allowing all factor loadings, residual variances, and correlations in the model to be freely estimated. Our baseline model showed acceptable fit to the data (see Table A1).

We then evaluated whether our 2-factor correlated model was superior to a 2-factor uncorrelated model and a 1-factor model. A nested model comparison was first made to an orthogonal model (i.e., completely independent model), in which the latent correlations at both time points were fixed to zero. The RMSEA model test and the χ^2 difference test indicated that the orthogonal model has a poorer fit with the data (see Table A1). A nested model comparison was then made to a model with the latent correlations fixed to 1 at both time points. Again, the results indicated a better

fit of the correlated two-factor baseline model, as compared to a one-factor model (see Table A1). Individual differences in the latent emotions were significantly stable (guilt: $r = .59$; shame: $r = .61$). However, the majority of the variance for guilt (65%) and shame (67%) across time was accounted for by individual differences in change. Thus, guilt- and shame-proneness appear to be distinct, yet correlated and relatively stable latent constructs that have room to change at the individual differences level.

A series of analyses were conducted in order to investigate whether the latent factor structure of the two-factor model would vary across gender or time (for more detailed description of factorial invariance, see Little, Preacher, Selig, & Card, 2007). We started by imposing equality constraints on corresponding factor loadings over time. The RMSEA model test indicated that the observed loss in fit was negligible (see Table A1), supporting loading invariance over time. Similarly, imposing equality constraints on corresponding intercepts indicated invariance of the intercepts over time (see Table A1). After that, cross-gender equality of factor loadings was examined by constraining corresponding factor loadings to be equal not only across time but also across gender. Results supported the between-group equality of indicator loadings. Finally, the equality of intercepts was evaluated by fixing the means of the latent variables in one gender group to zero allowing for comparisons of the latent means between girls and boys. Again, results supported the measurement invariance of the model. All in all, results for the equality of loadings, as well as for equality of intercepts, indicated that the underlying constructs for boys and girls have a similar structure (see Table A1).

Because the correlated two-factor model of dispositional guilt and shame was best supported by the data and the two factor structures remained invariant across time and gender, we continued by examining whether the covariance and mean structures among the latent constructs differed for boys and girls (Little et al., 2007). Comparisons of the models with free and constrained paths on variances and covariances indicated differences between girls and boys, and a significant difference was found for variances between the two groups (see Table A1). Prior to testing the associations among constructs, the variances in the model were standardized by converting the covariances into correlations with the help of phantom variables (for more detailed description of the process, see Card & Little, 2007). Although no significant gender differences were found for correlations, the comparison of latent means indicated significant mean level differences across gender, such that girls reported more guilt- and shame-proneness than boys. The effect sizes of the gender differences in latent means were strong ($d_{guiltT1} = .76$, $d_{guiltT2} = .79$, $d_{shameT1} = .74$, $d_{shameT2} = .68$).



Model Fit: $\chi^2_{(42,\, n\,=\,395)} = 91.15$; RMSEA = $.055_{(.039\text{-}.070)}$; NNFI = .97; CFI = .98

Figure A1. The standardized baseline model.

Table A1. Fit Indices for the CFA Models.

Step	χ^2	Df	p	$\Delta\chi^2$	Δdf	p	RM-SEA	RM-SEA 90% CI	NNFI	CFI
					Two-Factor Model					
Baseline Model	91.15	42	<.001	---	---	---	.055	.04-.07	.97	.98
Orthogonal Model	352.17	50	<.001	261.02	8	<.001	.124	.11-.14	.83	.87
Single Construct Model	451.37	44	<.001	360.22	2	<.001	.153	.14-.17	.74	.83
					Measurement Invariance of the Two-Factor Model					
Configural Invariance for Time[1]	91.15	42	<.001	---	---	---	.055	.04-.07	.97	.98
Loading Invariance for Time[1]	98.73	48	<.001	---	---	---	.052	.04-.07	.97	.98
Intercept Invariance for Time[1]	120.25	54	<.001	---	---	---	.056	.04-.07	.97	.97
Configural Invariance for Gender[1]	206.96	96	<.001	---	---	---	.077	.06-.09	.94	.96
Loading Invariance for Gender[1]	210.16	98	<.001	---	---	---	.076	.06-.09	.94	.96
Intercept Invariance for Gender[1]	235.29	100	<.001	---	---	---	.079	.06-.09	.94	.96
Homogeneity of Variances/Covariances for Gender[2]	235.86	105	<.001	24.54	7	<.001				
Homogeneity of Variances for Gender[2]	229.81	102	<.001	19.65	4	<.001				
Equality of Correlations for Gender[2]	216.64	101	<.001	6.48	3	.09				
Latent Mean Invariance for Gender[2]	235.29	106	<.001	25.13	8	.001				

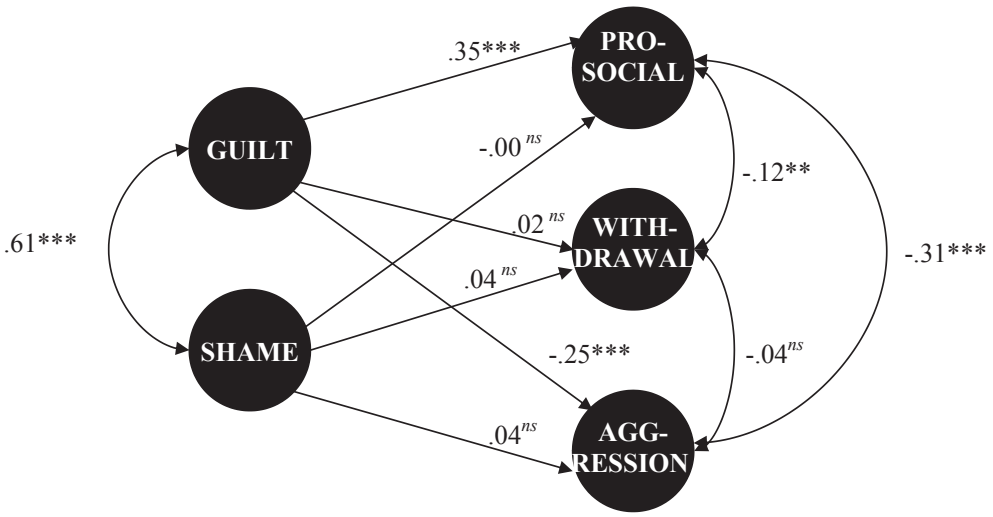
[1] Evaluated with the RMSEA model test

[2] Evaluated with the χ^2 difference test

Note. Each nested model contains its constraints, plus the constraints of all previous models. The models testing invariance for sex contains the constrained parameters of the model for Loading Invariance for Time.

APPENDIX B: ONLINE APPENDIX B FOR STUDY I

We examined the degree to which latent dispositional guilt and shame were related to prosocial behavior, withdrawal, and aggression within each time point, such that the behaviors were regressed on the emotions and the common variance in guilt and shame was accounted for. Since the initial analyses appeared to produce similar results for both time points, we decided to evaluate, whether there were any significant differences between the time points in any of the emotion-behavior associations. To do this, we first constrained the emotion-behavior paths one by one to be the same across the two time points (e.g., guilt-aggression path at Time-1 was constrained to be the same as the corresponding path at Time-2). After that, we also constrained all the corresponding emotion-behavior paths simultaneously. Results of the χ^2-tests indicated no significant differences between the models of free and constrained paths (all constrained: $\Delta\chi^2(6) = 6.81$, $p = .34$). After that, we conducted multiple-groups analyses on the emotion-behavior associations across gender (e.g., boys' guilt-aggression path was constrained to be the same as the girls' corresponding path). Again, the χ^2-tests indicated no significant differences between the models (all constrained: $\Delta\chi^2(6) = 5.18$, $p = .52$). Thus, our concurrent model with predictive paths between emotions and behaviors was both time- and gender-invariant.



Model Fit: $\chi^2_{(80,\, n = 790)} = 215.03$; RMSEA = .047$_{(.039-.055)}$; NNFI = .98; CFI = .98

Figure B1. The standardized coefficients of the paths between emotions and behaviors, derived from a model in which Time-1 and Time-2 associations were constrained to be equal. Factor loadings ranged from .780 to .994.

Note: Two-tailed significance test; ^{ns} = non-significant, * $p < .01$, ** $p < .001$