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

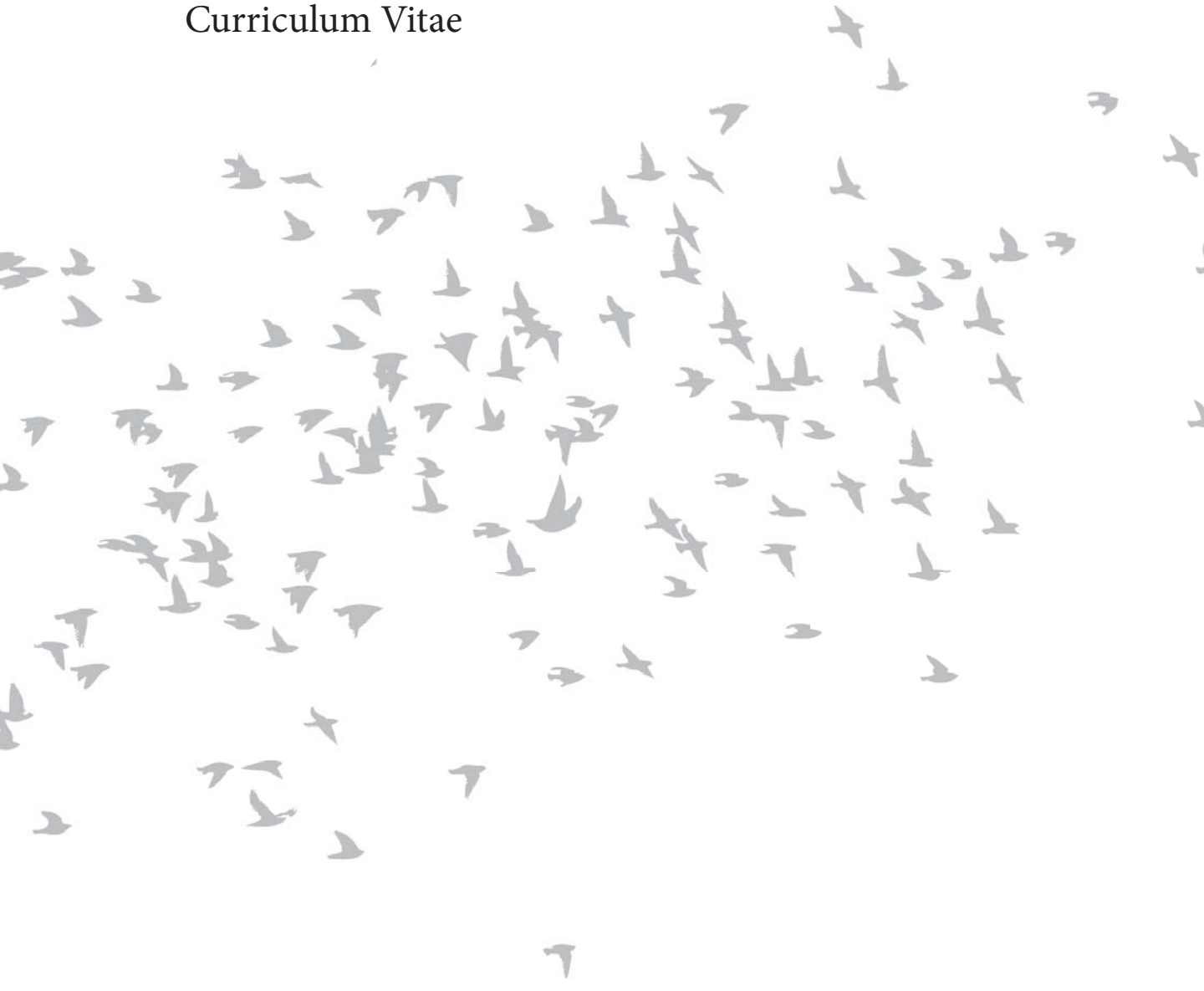
Broekhof, E.

Appendices

Supplementary materials

List of publications

Curriculum Vitae



SUPPLEMENTARY MATERIALS CHAPTER 3

Detailed description of the samples and procedures

For recruiting the boys without autism, we first contacted the schools to participate and then handed out information and consent letters. Testing these boys in their school allowed us to test multiple participants in one day, rather than going to their home to test them individually.

The boys with autism where recruited through a Center for Autism, a facility specialized in diagnosing and treating children with autism, and two schools for children with autism. We sent information and consent letters to the parents. The boys who were recruited through the Center for Autism were tested either at their home or at the facility (depending on what the parents preferred). We had no contact with their school. The boys who were recruited through their schools were tested at their school.

We had two explicit inclusion criteria that applied for both groups: a) IQ > 80 and b) no additional diagnoses based on DSM IV. IQ scores were based on the means of the norm scores of two nonverbal subscales of the Wechsler Intelligence Scale (WISC; Kort et al., 2002; Wechsler, 1991): Block Design (copying small geometric designs consisting of four or nine plastic cubes) and Picture Arrangement (sequencing cartoon pictures to make sensible stories). These tests were administered and interpreted by qualified and experienced psychologists. Additionally, we excluded participants with additional diagnoses. For the autistic sample, this information was taken from their file. For the non-autistic sample, we asked parents if their child had any diagnosis.

By using these criteria our sample was relatively homogeneous. A more heterogeneous sample could diffuse the interpretation of the results. Yet, given the high comorbidity rates of autism with other disorders (e.g., anxiety disorders, conduct disorders, ADHD), future research should examine the moderating effects of these disorders in the relationships we found.

Detailed description of the statistical analyses

In order to examine the contribution of emotions on Bullying Others and Victimization and vice versa, General Linear Model (GLM) analyses with clustered bootstrapping were performed. A GLM with clustered bootstrapping is a simple linear regression that takes the dependency between observations of the same participant into account. Thus, GLM analyses allow us to parse out the unique contribution of the predictor variables on the development of the outcome variable, beyond any effect shared with another predictor (Gordon, 2010). An advantage of this method is that few distributional assumptions are made, however, large uncentered variables and missing data might bias results (Graham and Hofer, 2000; Nugent et al., 2012). Therefore, age was centered

on the youngest participant (i.e., 109 months). Little MCAR test ($p < .01$) suggests that our missing data (see Table S3) is not missing completely at random. Since there was no indication that our missing data is missing non at random, missing at random was assumed. This type of missing data is best handled with multiple imputation (see Azur et al., 2011 for more information). We created 10 imputation sets to fill in the missing mean scores (Graham, 2009). Imputations were based on all variables in this study: bullying, victimization, guilt, shame, anger, fear and personal characteristics (i.e., Age at Time 1, Time 2, and Time 3, Group, IQ, Language, and SES). Analyses were performed on the imputed data and pooled results are reported.

To be able to differentiate between and within effects, we computed a mean score and change score per participant. The mean score represents the mean value for a variable for the three measurement occasions. The change score represents the score on either Time 1, Time 2 or Time 3 minus the mean score of the participant. A mean score in a GLM analysis assesses whether differences between participants in a predictor variable predicts a change in the outcome variable, while a change score assesses whether a change in the predictor variable predicts a change in the outcome variable.

To examine the contribution of emotions on Bullying Others and Victimization and vice versa, we first fitted basic models for each outcome measure. In these basic models Group (0 = no autism, 1 = autism) was inserted to examine group differences. Age, IQ, Language and Victimization were corrected for (see Table S4 for all basic models). Additionally, to assess differences in relations between boys with and without autism, interactions with Group were added to each basic model (e.g., Mean Anger x Group and Change Anger x Group). Only significant interactions were retained in the final model (more information about this procedure can be found in Broekhof, Bos, Camodeca, & Rieffe, 2018). Missing value analysis and multiple imputation were performed in SPSS version 24.0. For GLM analyses R version 3.3.0 was used in combination with the *Clusbootglm* function (de Rooij, 2013). The figures were made in R using the ggplot2 function. The figures represent the single relation between an emotion and Bullying Others/Vicimization, which do not control for other variables that were originally included in the final model.

REFERENCES

Azur, M. J., Stuart, E. A.. Frangakis, C., & Leaf, P. J. (2011). Multiple imputation by chained equations: What is it and how does it work? *International Journal of Methods in Psychiatric Research, 20*(1), 40-49. doi:10.1002/mpr.329

Broekhof, E., Bos, M. G. N., Camodeca, M., & Rieffe, C. (2018). Longitudinal associations between bullying and emotions in deaf and hard of hearing adolescents. *Journal of Deaf Studies and Deaf Education*, 23, 17-27. doi:10.1093/deafed/enx036

de Rooij, M. (2013). *Standard regression models for repeated measurement and longitudinal data.* Unpublished manuscript.

Gordon, R. A. (2010). *Regression analysis for social sciences.* New York, NY: Routledge.

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*(1), 549-576. doi:10.1146/annurev.psych.58.110405.085530

Graham, J. W., & Hofer S. M. (2000). Multiple imputation in multivariate research. In Little, T., Schnabel, K. U., & Baumert, J. (Eds.), *Modeling longitudinal and multilevel data: Practical issues, applied approaches and specific examples*. Mahwah, NJ: Erlbaum, pp. 201-218.

Kort, W., Compaan, E.L., Bleichrodt, N., Resing, W.C.M., Schit-tekatte, M., Bosman, M., Vermeir, G., & Verhaeghe, P. (2002). *WISC-III-NL handleiding*. Amsterdam: NDC/NIP.

Nugent, K.L., Daniels, A. M., & Azur, M. J. (2012). Correlates of schizophrenia spectrum disorders in children and adolescents cared for in community settings. *Child and Adolescent Mental Health, 17*(2), 101-108. doi:10.1111/j.1475-3588.2011.00618.x

Wechsler, D. (1991). *The wechsler intelligence scale for children - Third edition*. San Antonio, TX: The Psychological Corporation.

Table S1. Characteristics of participants.

	Autism	no Autism	Group differences
No. of participants	73	96	
Mean age in years at Time 1 (*SD*)	11.8 (1.35)	11.5 (1.38)	$t(167) = -1.28$, $p = .204$
Mean age in years at Time 2 (*SD*)	12.5 (1.39)	12.2 (1.38)	$t(149) = -1.38$, $p = .169$
Mean age in years at Time 3 (*SD*)	13.3 (1.42)	13.0 (1.41)	$t(128) = -1.28$, $p = .204$
IQ score*	11.44	10.78	$t(154) = -1.50$, $p = .136$
Language*	9.08[a]	10.07[b]	$t(151) = 2.47$, $p = .015$
Social economic status†	3.16	3.25	$t(130) = .89$, $p = .377$

Note. Autism = boys with autism; no Autism = boys without autism.
Character superscripts indicate differences between groups at $p < .05$, as evidenced by independent t-tests on the raw data.
* For IQ and language, age-corrected norm scores are presented. The grand population mean is set to 10.
† Based on parental education: (1) no/primary education, (2) lower general secondary education, (3) higher general secondary education, (4) college/university.

Table S2. Psychometric properties, mean scores and group differences of Bullying Others/Victimization and Emotions at Time 1, Time 2, and Time 3 as a function of group.

		Cronbach's α		Mean scores (*SD*)		Group differences
	No. items	Autism	no Autism	Autism	no Autism	independent t-tests
Time 1						
Bullying	9	.81	.79	1.60 (.38)	1.60 (.35)	$t(161) = -.28$, $p = .778$
Victimization	10	.81	.77	1.61[a] (.38)	1.42[b] (.31)	$t(163) = -3.53$, $p = .001$
Anger	4	.91	.81	1.61 (.59)	1.49 (.46)	$t(162) = -1.29$, $p = .199$
Fear	4	.69	.70	1.52[a] (.44)	1.22[b] (.34)	$t(162) = -4.90$, $p < .001$
Guilt	6	.80	.67	2.03[b] (.53)	2.22[a] (.42)	$t(161) = 2.80$, $p = .006$
Shame	6	.81	.74	1.97[b] (.54)	2.19[a] (.49)	$t(161) = 2.91$, $p = .004$
Time 2						
Bullying	9	.86	.78	1.58 (.44)	1.64 (.35)	$t(144) = .75$, $p = .455$
Victimization	10	.81	.77	1.52 (.38)	1.42 (.30)	$t(149) = -1.78$, $p = .077$
Anger	4	.92	.86	1.54 (.59)	1.54 (.49)	$t(147) = -.22$, $p = .823$
Fear	4	.86	.74	1.39 (.52)	1.30 (.38)	$t(147) = -1.06$, $p = .290$
Guilt	6	.78	.69	2.11[b] (.49)	2.28[a] (.41)	$t(143) = 2.21$, $p = .029$
Shame	6	.79	.70	2.07[b] (.54)	2.31[a] (.44)	$t(143) = 3.33$, $p = .001$
Time 3						
Bullying	9	.83	.77	1.50 (.38)	1.46 (.32)	$t(125) = -1.04$, $p = .302$
Victimization	10	.75	.74	1.45 (.32)	1.38 (.30)	$t(125) = -1.55$, $p = .124$
Anger	4	.94	.86	1.63 (.62)	1.52 (.46)	$t(126) = -1.43$, $p = .155$
Fear	4	.88	.79	1.43 (.48)	1.38 (.42)	$t(126) = -.83$, $p = .406$
Guilt	6	.82	.61	2.27 (.49)	2.30 (.36)	$t(127) = .30$, $p = .762$
Shame	6	.78	.67	1.92[b] (.53)	2.27[a] (.42)	$t(127) = 4.01$, $p < .001$

Note. Autism = boys with autism; no Autism = boys without autism.
Cronbach's alphas are based on the raw data, since missing scale means were imputed rather than item values.
Character superscripts indicate differences between groups at $p < .05$ as evidenced by independent t-tests on the raw data.

Table S3. An overview of amount of missing data

	Participants		Missing	
	Autism *n* = 73	no Autism *n* = 96	Count	Percentage
Language	68	85	16	9.5
IQ	71	85	13	7.7
Time 1	*n* = 73	*n* = 96		
Age	73	96	0	0
Bullying Others	67	96	6	3.6
Victimization	69	96	4	2.4
Anger	68	96	5	3.0
Fear	68	96	5	3.0
Guilt	67	96	6	3.6
Shame	67	96	6	3.6
Time 2	*n* = 67	*n* = 84		
Age	67	84	18	10.7
Bullying Others	64	82	23	13.6
Victimization	67	84	18	10.7
Anger	65	84	20	11.8
Fear	65	84	20	11.8
Guilt	64	81	24	14.2
Shame	64	81	24	14.2
Time 3	*n* = 62	*n* = 68		
Age	62	68	39	23.1
Bullying Others	60	67	42	24.9
Victimization	60	67	42	24.9
Anger	60	68	41	24.3
Fear	60	68	41	24.3
Guilt	61	68	40	23.7
Shame	61	68	40	23.7

Note. Autism = boys with autism; no Autism = boys without autism.

Table S4. Basic models of the GLM analyses with clustered bootstrapping for each separate outcome variable

Dependent variable	Predictors
Bullying Others	= Age + Group + Language + IQ + Victimization (M & C) + Anger (M & C) + Guilt (M & C) + Shame (M & C).
Victimization	= Age + Group + Language + IQ + Bullying Others (M & C) + Anger (M & C) + Fear (M & C) + Shame (M & C).
Anger	= Age + Group + Language + IQ + Bullying Others (M & C) + Victimization (M & C).
Fear	= Age + Group + Language + IQ + Victimization (M & C).
Guilt	= Age + Group + Language + IQ + Bullying Others (M & C).
Shame	= Age + Group + Language + IQ + Bullying Others (M & C) + Victimization (M & C).

Note. M = Mean score; C = Change score.

SUPPLEMENTARY MATERIALS CHAPTER 5

Table S1. An overview of amount of missing data and outliers.

	Participants		Missing			
	DHH	H	DHH Count	%	H Count	%
Time 1	*n* = 80	*n* = 227				
Gender	0	0	0	0	0	0
IQ	77	199	3	3.8	28	12.3
Language	55	199	25	31.3	28	12.3
Parental education level	68	165	12	15.0	62	27.3
Age	80	227	0	0	0	0
Bullying	53	227	27	33.8	0	0
Victimization	80	227	0	0	0	0
Anger	80	227	0	0	0	0
Fear	80	227	0	0	0	0
Guilt	78	227	2	2.5	0	0
Shame	78	227	2	2.5	0	0
Time 2	n = 78	n = 198	2	2.5	29	12.8
Age	78	198	2	2.5	29	12.8
Bullying	75	195	5	6.3	32	14.1
Victimization	77	198	3	3.8	29	12.8
Anger	78	197	2	2.5	30	13.1
Fear	78	197	2	2.5	30	13.1
Guilt	74	194	6	7.5	33	14.5
Shame	74	194	6	7.5	33	14.5

Note. DHH = Deaf and Hard of Hearing, H = hearing.

Table S2. Participant characteristics per DHH group regarding Type of Education by Type of hearing device.

	(1) Hearing Device		(2) Cochlear Implant	
	Mainstream education	Special education	Mainstream education	Special education
No. of participants	32	21	16	11
Mean age in years at Time 1	12.14	12.14	11.68	11.14
Age range in years at Time 1	9.50 – 15.75	9.17 – 15.75	9.42 – 14.92	9.25 – 12.33
Gender – *n* (%)				
Male	13 (40.6)	12 (57.1)	10 (62.5)	2 (18.2)
Female	19 (59.4)	9 (42.9)	6 (37.5)	9 (81.8)
IQ score[a]	10.99	9.33	10.28	9.55
Language[a]	10.81	8.66	10.97	7.60
Parental education level[b]	3.45	2.61	3.20	3.03
Communication mode - *n* (%)				
DSL/SSD	1 (3.1)	16 (76.2)	2 (12.5)	9 (81.8)
Spoken language only	31 (96.9)	5 (23.8)	14 (87.5)	2 (18.2)
Hearing loss in better ear – *n* (%)				
40-60 dB	15 (46.9)	5 (23.8)	0	0
61-90 dB	12 (37.5)	6 (28.6)	0	0
> 90 dB	4 (12.5)	8 (38.1)	15 (93.8)	9 (81.8)
unknown	1 (3.1)	2 (9.5)	1 (6.3)	2 (18.2)

Note. DHH = Deaf and Hard of Hearing, H = hearing; DSL = Dutch Sign Language, SSD = Sign supported Dutch. [a] For IQ and Language, age-corrected norm scores are presented. grand population mean is set to 10. [b] (1) no/primary education, (2) lower general secondary education, (3) higher general secondary education, (4) college/university.

Table S3. Participant characteristics per DHH group regarding Communication mode and amount of hearing loss.

	Communication mode		Amount of hearing loss		
	Spoken	DSL/SSD	mild	moderate	severe
No. of participants	52	28	20	18	36
Bullying	**1.41**	**1.56**	1.47	1.45	1.47
Victimization	**1.41**	**1.61**	1.42	1.52	1.50
Mean age in years at Time1	12.05	11.65	12.23	12.10	11.83
Age range in years at Time1	9.17 – 15.75	9.25-14.67	9.17 – 15.75	9.50 – 15.75	9.25-14.92
Male – *n* (%) Female – *n* (%)	27 (51.9) 25 (48.1)	10 (35.7) 18 (64.3)	6 (30.0) 14 (70.0)	12 (66.7) 6 (33.3)	17 (47.2) 19 (52.8)
IQ score[a]	10.52	9.64	9.90	10.95	10.28
Language[a]	10.41	8.78	10.47	10.66	9.48
Parental education level[b]	3.23	2.92	3.18	3.19	3.16
Type of education - *n* (%)					
Regular education	**45 (86.5)**	**3 (10.7)**	15 (75.0)	12 (66.7)	19 (52.8)
Special education	**7 (13.5)**	**25 (89.3)**	5 (25.0)	6 (33.3)	17 (47.2)
Communication mode - *n*(%)					
DSL/SSD	-	-	**2 (10.0)**	**15 (27.8)**	**17 (47.2)**
Spoken language only	-	-	**18 (90.0)**	**13 (72.2)**	**19 (52.8)**
Type of amplification - *n* (%)					
Hearing aid	36 (69.2)	17 (60.7)	**20 (100)**	**18 (100)**	**12 (33.3)**
Cochlear implant (CI)	16 (30.8)	11 (39.3)	**0**	**0**	**24 (66.7)**
Hearing loss in better ear *n* (%)					
40-60 dB	**18 (34.6)**	**2 (7.1)**	-	-	-
61-90 dB	**13 (25.0)**	**5 (17.9)**	-	-	-
> 90 dB	**19 (36.5)**	**17 (60.7)**	-	-	-
unknown	**2 (3.8)**	**4 (14.3)**	-	-	-

Note. DSL = Dutch Sign Language, SSD = Sign supported Dutch. Values displayed in bold represent significant differences within DHH groups (e.g., between HA and CI group) at $p < .05$.[a] For IQ and Language, age-corrected norm scores are presented. grand population mean is set to 10. [b] (1) no/primary education, (2) lower general secondary education, (3) higher general secondary education, (4) college/university.

SUPPLEMENTARY MATERIALS CHAPTER 6

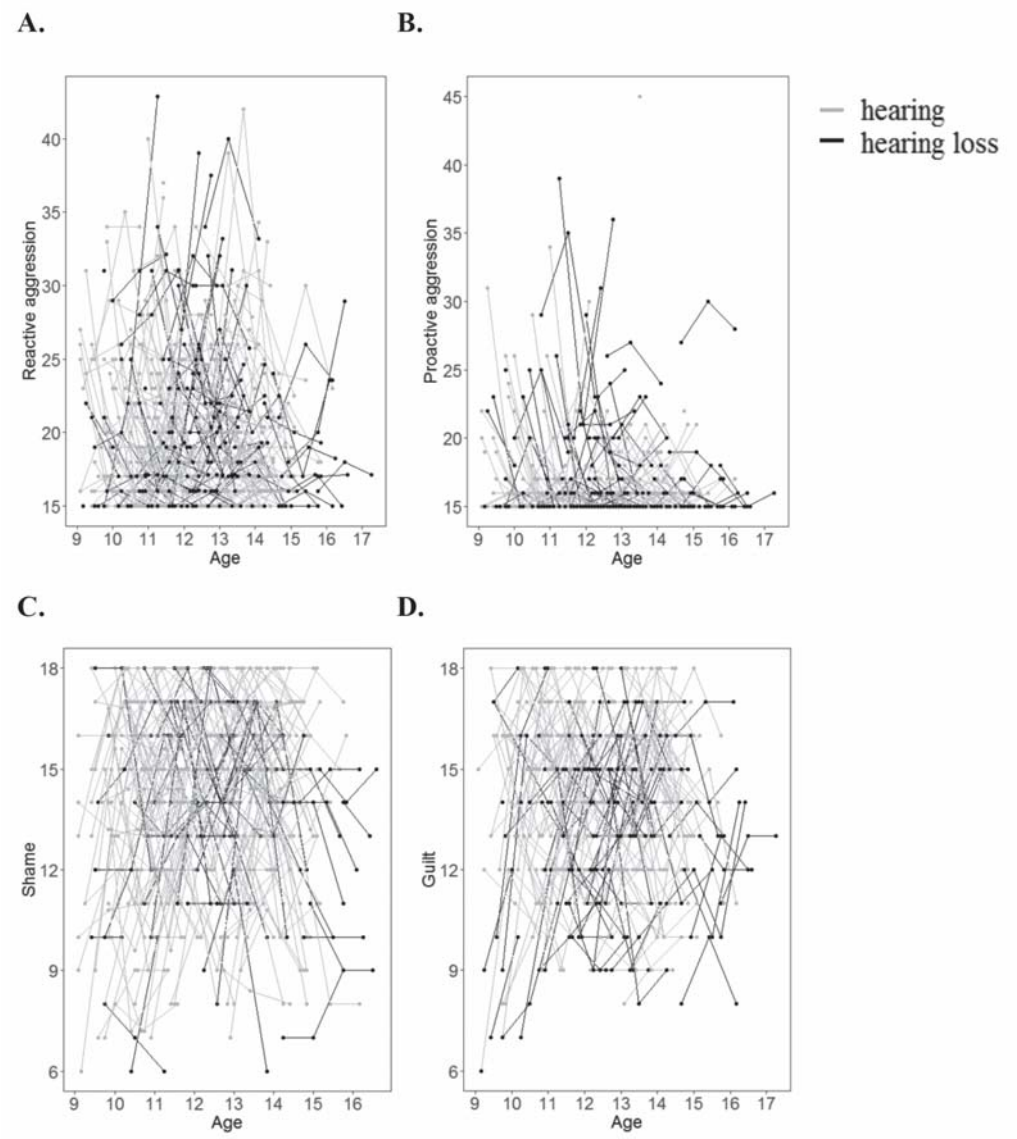


Figure S1. Longitudinal graphic representation of age at the three time points of reactive aggression, proactive aggression, shame and guilt. Each participant is presented by an individual line and each time point is presented by a point. Adolescents with hearing loss are displayed in black and hearing adolescents in grey. **1A.** reactive aggression. **1B.** proactive aggression. **1C.** shame. **1D.** guilt.

A

Table S1. Psychometric properties and mean scores of reactive aggression, proactive aggression, shame and guilt at the three time points per group

	No. of items	Range	Cronbach's α		Mean scores (*SD*)	
			HL	Hearing	HL	Hearing
Time 1						
Reactive aggression	15	15-45	.89	.89	20.36 (5.28)	20.41 (5.14)
Proactive aggression	15	15-45	.87	.90	18.23 (4.50)	16.47 (3.39)
Shame	6	6-18	.81	.78	13.00 (3.33)	14.03 (2.92)
Guilt	6	6-18	.80	.69	12.55 (3.08)	14.07 (2.50)
Time 2						
Reactive aggression	15	15-45	.91	.90	20.17 (5.52)	19.40 (4.90)
Proactive aggression	15	15-45	.92	.67	16.95 (4.00)	15.55 (1.28)
Shame	6	6-18	.69	.68	13.86 (2.58)	14.61 (2.61)
Guilt	6	6-18	.78	.69	12.96 (2.72)	14.38 (2.40)
Time 3						
Reactive aggression	15	15-45	.92	.87	21.09 (6.31)	18.68 (4.21)
Proactive aggression	15	15-45	.90	.77	16.94 (3.72)	15.75 (1.80)
Shame	6	6-18	.68	.75	12.70 (2.72)	14.12 (2.69)
Guilt	6	6-18	.69	.68	13.27 (2.51)	14.51 (2.51)

Abbreviations: HL = Hearing loss; SD: Standard deviation.

Table S2. An overview of missing data

	Participants		Missing			
	HL	Hearing	HL Count	HL %	Hearing Count	Hearing %
Time 1	*n* = 80	*n* = 227				
Age	80	227	0	0.0%	0	0.0%
Reactive aggression	78	227	2	2.5%	0	0.0%
Proactive aggression	78	227	2	2.5%	0	0.0%
Shame	78	227	2	2.5%	0	0.0%
Guilt	78	227	2	2.5%	0	0.0%
Time 2	*n* = 78	*n* = 197	2	2.5%	30	13.2%
Age	78	197	2	2.5%	30	13.2%
Reactive aggression	78	197	2	2.5%	30	13.2%
Proactive aggression	78	197	2	2.5%	30	13.2%
Shame	74	194	4	5.0%	33	14.5%
Guilt	74	194	4	5.0%	33	14.5%
Time 3	*n* = 64	*n* = 166	16	20.0%	61	26.9%
Age	64	166	16	20.0%	61	26.9%
Reactive aggression	64	166	16	20.0%	61	26.9%
Proactive aggression	64	166	16	20.0%	61	26.9%
Shame	63	166	17	21.3%	61	26.9%
Guilt	63	166	17	21.3%	61	26.9%

Note. HL = Hearing loss.

Table S3. Linear mixed models examining the developmental trajectory of reactive aggression, proactive aggression, shame and guilt

	Reactive aggression	Proactive aggression	Shame	Guilt
Model 1				
Intercept	19.91***	16.40***	13.97***	13.90***
AIC/BIC	4768.54/4777.93	3993.65/4003.04	3773.36/3782.74	3592.39/3601.76
Df	3	3	3	3
Model 2				
Intercept	19.69***	16.03***	14.24***	14.26***
Group	.84	1.39***	-1.00***	-1.34***
AIC/BIC	4765.60/4774.99	3976.54/3985.93	3763.61/3772.98	3570.19/3579.56
df	4	4	4	4
Model 3				
Intercept	**20.92*** **	**16.77*** **	13.79***	13.89***
Group	**.97**	**1.47*** **	-1.05***	-1.38***
Age(linear)	**-.38** **	**-.23** **	.14	.12
AIC/BIC	**4759.18/4768.57**	**3971.40/3980.78**	3763.37/3772.72	3570.54/3579.91
df	**5**	**5**	5	5
Model 4				
Intercept	20.70***	17.56***	**12.28*** **	12.95***
Group	.99	1.41***	**-.93** **	-1.31***
Age(linear)	-.22	-.81***	**1.25*** **	.80***
Age(quadratic)	-.02	.08*	**-.16*** **	-.10***
AIC/BIC	4762.90/4772.28	3970.55/3979.94	**3741.23/3750.60**	3562.70/3572.07
df	6	6	**6**	6
Model 5				
Intercept	21.07***	18.28***	12.13***	12.50***
Group	1.02	.15***	-.94**	-1.34***
Age(linear)	-.76	-1.84***	1.47**	1.46***
Age(quadratic)	.16	.44**	-.24	-.33*
Age(cubic)	-.02	-.03*	.01	.02
AIC/BIC	4767.95/4777.34	3972.26/3981.65	3747.72/3757.08	3566.58/3575.93
df	7	7	7	7
Model 6				
Intercept	21.29***	16.55***	12.32***	**13.15*** **
Group	-.33	2.23***	-1.16	**-2.53*** **
Age (linear)	-.50***	-.16	1.25***	**.80*** **
Age(quadratic)	X	X	-.17***	**-.12*** **
Age x Group	.38	-.22	.07	**.36***
AIC/BIC	4758.13/4767.52	3971.43/3980.82	3738.91/3752.27	**3558.42/3567.78**
df	6	6	7	**7**

*$p < .05$, **$p < .01$, ***$p < .001$.
Values for the best fitting model are displayed in bold.

Table S4. Correlations between the average score (of time1, time2, time3) of social emotions with aggression

	Proactive aggression	Shame		Guilt	
			Partial[a]		Partial[a]
Reactive aggression	.43***	.01	.10	-.13*	-.16**
Proactive aggression		-.13*	.04	-.29***	-.26***

Note. *$p < .05$, **$p < .01$, ***$p < .001$.
[a] Partial correlations were corrected for either shame or guilt.

LIST OF PUBLICATIONS

Broekhof, E., Bos, M. G. N., & Rieffe, C. (submitted). The role of social emotions and social access in the development of aggression; A longitudinal study in adolescents with and without hearing loss.

Eichengreen, A., **Broekhof, E.,** Güroğlu, B., & Rieffe, C. (in revision). Fairness decisions in children and early adolescents with and without hearing loss.

Novin, S., & **Broekhof, E.,** & Rieffe, C. (in press). Bidirectional relationships between bullying, victimization, and emotion experience in boys with and without ASD. *Autism*.

Rieffe, C., **Broekhof, E.**, Eichengreen, A., Kouwenberg, M., Veiga, G., da Silva, B. M. S., van der Laan, A., & Frijns, J. H. M. (2018). Friendship quality and emotion control in deaf and hard of hearing adolescents. *Journal of Deaf Studies and Deaf Education,* 1-10. Advance online publication. doi:10.1093/deafed/eny012.

Broekhof, E., Bos, M.G.N., Camodeca, M., & Rieffe, C. (2018). Longitudinal associations between bullying and emotions in deaf and hard of hearing adolescents. *Journal of Deaf Studies and Deaf Education, 23,* 17-27. doi:10.1093/deafed/enx036.

Broekhof, E., Kouwenberg, M., Oosterveld, P., Frijns, J. H. M., & Rieffe, C. (2017). The brief shame and guilt questionnaire for children and adolescents who are deaf or hard of hearing. *Assessment*. Advance online publication. doi:10.1177/1073191117725169

Overgaauw, S., Rieffe, C., **Broekhof, E.,** Crone, E. A., & Güroğlu, B. (2017). Assessing empathy across childhood and adolescence: Validation of the Empathy Questionnaire for Children and Adolescents (EmQue-CA). *Frontiers in Psychology, 840.* doi:10.1007/s10803-015-2363-3

Rieffe, C., **Broekhof, E.,** Kouwenberg, M., Faber, J., Tsutsui, M. M., Faber, J., & Guroglu, B. (2016). Disentangling proactive and reactive aggression in children using self-report. *European Journal of Developmental Psychology.* doi:10.1080/17405629.2015.1109506.

Broekhof, E., Ketelaar, L., Van Zijp, A., Stockmann, L., Bos, M. G. N., & Rieffe, C. (2015). The understanding of intentions, desires and beliefs in young children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 45,* 2035-2045. doi:10.1007/s10803-015-2363-3.

Ketelaar, L., Wiefferink, C.H., Frijns, J.H.M., **Broekhof, E.,** & Rieffe, C. (2015). Preliminary findings on associations between moral emotions and social behavior in young children with normal hearing and with cochlear implants. *European Child and Adolescent Psychiatry, 24*, 1369-1380. doi:10.1007/s00787-015-0688-2

Rieffe, C., Netten, A.P., **Broekhof, E.,** & Veiga, G. (2015). The role of the environment in children's emotion socialization; The case of deaf or hard-of-hearing (DHH) children. In M. Marschark & H.E.T. Knoors (Eds.), *Educating deaf learners: Creating a global evidence base*. London: Oxford University Press.

Broekhof, E., Rieffe, C., Ketelaar, L., & Wiefferink, K. (2013). De ontwikkeling van empathie bij kinderen met gehoorverlies. *Van Horen Zeggen*, 54, 10-13.

CURRICULUM VITAE

Evelien Broekhof was born on the 1st of March 1989 in Noordwijkerhout, the Netherlands. She graduated from Teylingen College Leeuwenhorst (high school) in 2008. In 2011 she obtained her bachelor degree in psychology at Leiden University (cum laude). In 2011 she started the research master developmental psychology at Leiden University, which she obtained in 2013 (cum laude). After graduation, Evelien worked as a junior researcher in the Focus on Emotions group under supervision of prof. dr. Carolien Rieffe.

In 2014, Evelien started her PhD research, again at Leiden University, under supervision of prof. dr. Carolien Rieffe and dr. Marieke Bos. Her research focused on longitudinal associations between shame, guilt, and aggression in typically developing adolescents, adolescents with an autism spectrum disorder and adolescents with hearing loss. In 2018, Evelien started working as a postdoctoral research associate for the project of dr. Anders Schinkel on the role of wonder in education for human flourishing at the Vrije Universiteit Amsterdam.