

Empirical study

## Teacher liking as an affective filter for the association between student behavior and peer status

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## ABSTRACT

This study investigated how peer perceptions of teacher liking and disliking for a student shape students' social cognitions by moderating associations between the student's peer-perceived social behavior and peer liking and disliking status. We studied individual teacher liking and disliking as well as classroom norms as moderators of individual and classroom-level behavior–status associations. Peer nominations of (dis)liking, being (dis)liked by the teacher, and prosocial and aggressive behavior were gathered from 1454 students ( $M_{\text{age}} = 10.60$ ) in 58 fifth-grade classes in the Netherlands. Results from multilevel analyses showed the teacher made a difference in particular for those students who were at-risk of low peer status, that is, those students who were perceived by many of their peers to show aggressive behavior and by few to show prosocial behavior. These students were disliked less and liked more when they were perceived by peers to be less disliked and more liked by the teacher. Furthermore, the amount of disliking associated with overt and relational aggression differed across classrooms, depending on norms of teacher liking. These findings may help teachers to understand and improve an individual student's peer status, and alter the behavior–status dynamics in their class.

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### 1. Introduction

Students' social status with peers, in terms of peer liking and disliking, is an important predictor of their social and academic development (Nelson & Dishion, 2004; Rubin, Bukowski, & Parker, 2006; Wentzel, 2005). Research on factors contributing to peer status has shown that student behavior, in particular prosocial and aggressive behavior, strongly predicts how peers evaluate a student (Cillessen & Mayeux, 2004; Newcomb, Bukowski, & Pattee, 1993; Rubin et al., 2006). Recent research suggests that the teacher can also contribute to students' peer status (e.g., De Laet et al., 2014; Hoffman, Hamm, & Farmer, 2015; McAuliffe, Hubbard, & Romano, 2009). In the present study, we integrated these relatively separate lines of research by investigating the role of the teacher in behavior–status associations. More specifically, we argue that teacher liking and disliking for a student can function as an affective filter, providing a context within which student behavior is evaluated by peers. When peers think that the teacher likes a student more, they might also evaluate the student's behavior

more positively and like the student better (Hughes, 2012; Hughes, Cavell, & Willson, 2001). If this indeed is the case, teachers could use this knowledge to improve peers' views of a certain student, thereby improving this student's peer status and, indirectly, fostering the student's general social, as well as academic development. Next to individual students' peer status, we take the system of the classroom into account. That is, we propose that the teacher's general tendency to like versus dislike students may explain some of the variability in behavior–status associations at the classroom level (see Chang, 2004; Stormshak et al., 1999).

Farmer, McAuliffe-Lines, and Hamm (2011) referred to the teacher's role in peer relations as the teacher's "invisible hand", as this role is relatively underrepresented in research on teacher effectiveness. The aim of the present study was to partly reveal this "invisible hand" by gaining understanding as to how the teacher affects associations between student behavior and peer status, both at the student and at the classroom level. Insights from this study might help teachers to understand and improve an individual student's peer status and to alter the behavior–status dynamics as part of the classroom climate.

#### 1.1. Peer status and student behavior

A student's peer status reflects how he or she is valued by the classroom peer group as a collective. In this study the focus is on

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peer liking and disliking status, which have also been referred to as peer acceptance and rejection. Although peer liking and disliking status are often studied together, as a composite score of a student's social preference or likeability (Coie, Dodge, & Coppotelli, 1982), correlations between the two are generally only moderate (e.g., Coie et al., 1982; see also Cillessen, 2009) and peer liking and disliking have different antecedents and consequences (Crick, Murray-Close, Marks, & Mohajeri-Nelson, 2009; Ladd, Kochenderfer-Ladd, Visconti, & Ettekal, 2012). Therefore, in the present study peer liking and disliking status are treated as two separate outcomes. Both peer liking and disliking are important contributors to students' social and academic development; higher levels of peer liking are associated with more emotional well-being (Ladd, 2006), and higher levels of motivation and academic competence (Flook, Repetti, & Ullman, 2005; Wentzel, 2005). Moreover, supportive peer relations facilitate effective collaborative discussions (Lin et al., 2015). On the other hand, higher levels of disliking are associated with more internalizing and externalizing behavior (Ladd & Troop-Gordon, 2003), academic disengagement (Buhs, Ladd, & Herald, 2006) and dropout (French & Conrad, 2001).

Research on the factors that contribute to peer status has largely focused on the behavior of the student at stake (see Asher & McDonald, 2009). Two broadband categories of student behavior that have been studied in relation to peer status are prosocial behavior and aggression. In general, students who show prosocial behavior, for instance helping others and cooperating, are liked by their peers (Asher & McDonald, 2009; Rubin et al., 2006). Students who show much aggression are generally disliked by their peers, both when they show overt aggression (hitting, calling names; Asher & McDonald, 2009) and relational aggression (gossiping, excluding others; Crick & Grotpeter, 1995; Neal, 2010). Contrary to peer disliking, peer liking is not typically predicted by aggression (Crick et al., 2009; Graham & Juvonen, 2002).

### 1.2. Peer status and reputation of teacher liking and disliking

A student's peer status is not only informed by his or her own behavior, but may also be affected by the teacher (Hughes et al., 2001). Teachers, in their position of powerful social role models, have the unique opportunity to inform peers about qualities and attributes of a student and thereby affect peers' affective responses to the student (Hughes et al., 2001). For instance, when a teacher often reprimands a student, classmates may infer from this interaction that the student is to be disliked. That is, through repetitive occurrences of supportive or conflicted teacher-student interactions, the teacher communicates a particular liking or disliking for this student, which peers seem to adopt as their own (Chang et al., 2007). Even at a young age students notice how teachers interact differently with their classmates, and based on this information students make accurate inferences regarding the teacher's attitudes towards these classmates (Babad, 1993, 2009; Kuklinski & Weinstein, 2001; Weinstein, Marshall, Sharp, & Botkin, 1987). Students whom peers perceive to be liked by the teacher are generally liked more and disliked less by their peers, whereas students who have the reputation to have more conflict with or to be disliked by their teacher are generally liked less and disliked more (Hendrickx, Mainhard, Oudman, Boor-Klip, & Brekelmans, 2016; Hughes, Im, & Wehrly, 2014; Hughes et al., 2001).

### 1.3. Teacher liking and disliking as an affective filter

Chang et al. (2007) argued that teacher liking and disliking may not be directly adopted by peers, but may rather be one of the sources of information that peers use to evaluate a student's behavior. Accordingly, Hughes (2012) proposed that peer reputations of teacher-student relationships function as an *affective filter* that

biases peer evaluations of student behavior. Children often use reputation-like information about their classmates when processing social stimuli (White, Jones, & Sherman, 1998). This reputational information colors how student behavior is perceived and evaluated by peers (Hymel, Wagner, & Butler, 1990). Research on affective bias has shown that peers indeed respond differently to certain student behaviors based on their affect for the student (Hymel, 1986; Peets, Hodges, & Salmivalli, 2008). Peets et al. (2008) presented students with a vignette in which a classmate jumps in a puddle and mud splashes over the student, after which the students were asked to rate the amount of hostile intent underlying the classmate's behavior. Students' attributions of hostile intent were much lower when they liked the peer that appeared in the vignette than when they disliked the particular peer. This finding is indicative of an affective filter that influences how social behavior is evaluated; social-cognitive evaluations ("this behavior is hostile") were often congruent with the affect students felt for their peers.

In the present study, the focus is on how evaluations of students' social behavior, in terms of peer liking and disliking, are biased by teacher affect (see Hughes, 2012). Thus, perceived teacher affect for a student is viewed as an affective bias that influences how peers evaluate prosocial or aggressive behavior. Student behaviors may be differently associated with peer approval or disapproval, depending on the positive versus negative affective filter provided by the teacher. Several studies in which teacher-student relationships were measured using teacher and observer ratings have found evidence for this affective filtering effect of the teacher. First, White and Kistner (1992) used video vignettes to manipulate the teacher's positive or negative response to a target student who showed disruptive behavior. Respondents who watched the videos liked the target better in the positive than in the negative condition, indicating a less strong association between disruptive behavior and peer liking in the case of positive teacher affect. In more ecologically valid settings, researchers have primarily investigated teachers' reports of their preference of students as a moderator for the behavior-status associations. Chang et al. (2007) found that aggressive girls, but not boys, were less disliked by their peers when the teacher reported more preference for them, which is also in line with the idea of the teacher as an affective filter. However, in that study, the positive prosocial behavior-status association was tempered, instead of augmented, for students who had higher teacher preference. Chang et al. explained this unexpected finding by hypothesizing that students with higher teacher preference were already more liked, and prosocial behavior had a weaker added positive effect on likeability. Finally, again following a line of reasoning of the teacher as an affective filter, Moore, Shoulberg, and Murray-Close (2012) found that teacher-reported preference could function as a protective factor for the association of aggression with peer disliking.

### 1.4. Classroom norms of teacher liking and disliking

The association between student behavior and peer status does not only differ across individuals, but also across classrooms (e.g., Boor-Klip, Segers, Hendrickx, & Cillessen, 2015; Chang, 2004). Mikami, Lerner, and Lun (2010) argued that the context within which students interact may impact these associations. Chang (2003; see also Gest & Rodkin, 2011) suggested that the teacher, as part of the classroom context, may affect the extent to which prosocial and aggressive behaviors are valued positively or negatively in the classroom, or the norm salience of prosocial and aggressive behaviors (see Henry et al., 2000). Teachers may do so by modeling liking and thereby creating a classroom climate that fosters positive interactions, versus modeling disliking and creating a norm for disliking each other (Farmer et al., 2011; Gest & Rodkin, 2011). To examine the role of teacher liking in the

classroom climate, the present study included the classroom descriptive norms of teacher liking and disliking, that is, the extent to which teacher liking and disliking are common or typical in a classroom (Henry et al., 2000). Hughes, Zhang, and Hill (2006) found that the classroom norm of teacher support predicted individual students' peer status. To our best knowledge, studies have not yet investigated classroom norms of teacher liking and disliking as predictors of classroom-based behavior–status associations. However, Chang (2003) found that teacher warmth, measured at the classroom level, alleviated the negative association between aggressive behavior and peer acceptance. Teacher warmth did not moderate the association between prosocial behavior and acceptance in that study.

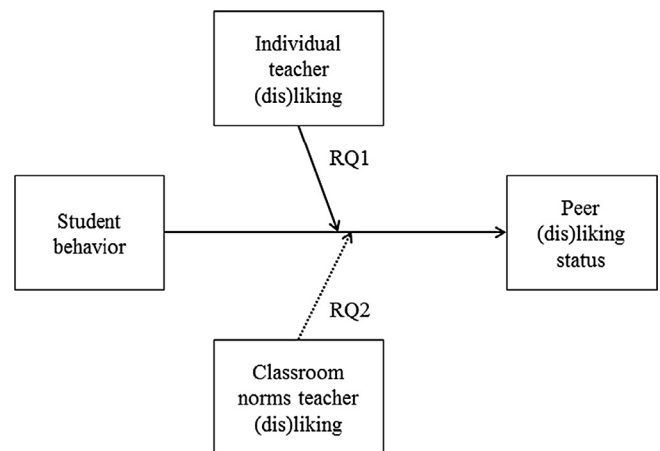
### 1.5. The present study

Research aimed at revealing the “invisible hand” of the teacher has produced relevant insights regarding the potential influence of the teacher on students' peer experiences. The present study advances this knowledge base by investigating how teacher liking and disliking are a context for the association between student behavior and peer liking and disliking status. Importantly, we aimed to study peers' affective responses to the behavior they identified, in context of the teacher (dis)liking they perceived. Therefore, we made sure to investigate peer-perceived student behavior and peer reputations of teacher liking and disliking (PRTL and PRD; see Hughes et al.'s, 2014: “peer teacher support reputation”). Moreover, because of the different antecedents and consequences of peer liking and disliking status, in this study peer liking and disliking were studied as two separate outcome measures.

We addressed the general problem: To what extent do peer reputation of teacher liking and disliking affect the association between peer perceptions of student behavior and peer liking and disliking? by investigating two research questions: (1) To what extent do peer reputation of teacher liking and disliking for individual students moderate associations between peer-perceived student behavior and peer liking and disliking?; and (2) To what extent do classroom norms of teacher liking and disliking moderate classroom-based associations between peer-perceived student behavior and peer liking and disliking? Fig. 1 graphically depicts the investigated associations among student behavior, peer status, and teacher (dis)liking. Student gender was included as a covariate in this study, because of the differences between boys and girls regarding student behavior and teacher–student relationships. Compared to boys, girls generally show more prosocial behavior and more relational aggression, but less overt aggression (e.g., Rose & Smith, 2009; Rubin et al., 2006). Girls generally have more supportive and less conflicted relationships with their teachers (e.g., Baker, 2006; McCormick & O'Connor, 2015). Besides including gender as a covariate, we also investigated whether moderation effects were similar for boys and girls, because Chang et al. (2007) found that this was not the case for aggressive behavior.

Existing research has given initial indications of a buffering function of teacher liking and disliking, partly counteracting negative associations between aggression and peer status. Accordingly, we expected that peer reputation of teacher liking would strengthen the positive prosocial behavior–liking association, and that it would temper the negative aggression–disliking association, as positive aspects of the student are pronounced via the positive affective filter. Peer-perceived teacher disliking was expected to temper the prosocial behavior–liking link and strengthen the aggression–disliking link, because of the negative affective filter that highlights negative aspects of the student.

In comparison to teacher liking, peer reputation of teacher disliking was expected to be particularly powerful. Negative information has a much stronger impact than positive information, as



**Fig. 1.** Overview of the investigated associations among peer-perceived student behavior, peer status of liking and disliking, and individual reputation as well as classroom norms of teacher (dis)liking. RQ1 = Research question 1: To what extent do peer reputation of teacher liking and disliking for individual students moderate associations between peer-perceived student behavior and peer liking and disliking? RQ2 = Research question 2: To what extent do classroom norms of teacher liking and disliking moderate classroom-based associations between peer-perceived student behavior and peer liking and disliking?

research on the negativity bias has shown (e.g., Rozin & Royzman, 2001; Vaish, Grossman, & Woodward, 2008). Also, negative affect is generally less common in primary school classrooms (e.g., Baker, 2006; Hughes et al., 2001) and may therefore have a stronger signaling value than more common positive affect. Students in our sample were in fifth grade. Even though over the course of primary school the amount of positive, supportive teacher–student interaction decreases, whereas the amount of negative, conflicted ones increases (Esposito, 1999; Jerome, Hamre, & Pianta, 2009), positive relationships still prevail over negative ones. Therefore, a student who is disliked by the teacher may stand in sharp contrast to their peers and thus peer reputation of teacher disliking may have a stronger effect on a student's peer status than reputation of teacher liking.

The second research question, regarding the classroom-based behavior–status associations, was more exploratory in nature. Higher norms of teacher liking and lower norms of teacher disliking were expected to be related to a climate of more peer liking and less peer disliking, because the teacher communicated positive affect and understanding for each other and each other's behaviors. This would result in less strong peer rejection of aggressive behavior (Chang, 2003).

## 2. Method

### 2.1. Participants

Students in 58 fifth-grade classrooms in 40 Dutch primary schools participated in this study, which was part of a larger research project on the classroom climate in upper elementary schools.<sup>1</sup> Class size ranged from 18 to 34 students ( $M = 26.14$ ,  $SD = 3.69$ ). Only students for whom active parental informed consent was obtained could participate (1496 out of 1518, participation rate 98.6%). Students' mean age was 10.60 years ( $SD = 0.50$ ) and 47.2% were girls. Absence on the day of data collection led to a final sample

<sup>1</sup> One of the in total 59 classrooms participating in the larger research project was excluded from this study, because of a diverting didactical approach with two teachers present in the classroom at all times who served an exceptionally large class of 43 students.

of 1454 students who completed questionnaires. According to the classification by [Statistics Netherlands \(2012\)](#), 84.4% were Dutch (both parents were born in The Netherlands), 5.6% were Western immigrants (at least one parent was born in another Western country), and 9.9% were non-Western immigrants (at least one parent was born in a non-Western country).

In the Netherlands, elementary school students have the same teacher for every lesson (approximately 25 h a week), or two teachers who each work part-time. In the case of two teachers, the teacher who spent most hours in the classroom participated in the study (60.3% at least 4 days a week). Teachers were on average 41.25 years old (range 24.51 to 62.47,  $SD = 11.91$ ), and had 15.17 years of experience (range 1 to 39 years,  $SD = 10.99$ ). Of the teachers, 63.8% were women.

## 2.2. Measures

**Peer nominations.** Peer nominations were used to measure peer status, peer perceptions of student behavior, and peer reputation of teacher liking and disliking. Students were asked which of their classmates, who all were presented on a list, fitted a certain description. Unlimited, same and cross-sex nominations were allowed for each question. For each student all received nominations on an item, expressed as a proportion of the maximum possible number of nominations, represented the student's score on that item.

**Peer status.** Peer liking was measured with the item "Which classmates do you like most?". Peer disliking was measured with the item "Which classmates do you like least?".

**Student behavior.** Peer-perceived prosocial behavior was measured using two items: "Which classmates help others?" and "Which classmates cooperate well with others?" (Cronbach's  $\alpha = 0.86$ ). The overt aggression items were "Which classmates call other children names?" and "Which classmates hit or kick others?" (Cronbach's  $\alpha = 0.96$ ). Relational aggression items were "Which classmates gossip about others?" and "Which classmates exclude others?" (Cronbach's  $\alpha = 0.83$ ).

**Peer reputation of teacher liking and disliking.** Peer reputation of teacher liking (PRTL) was measured with the item: "Which classmates are liked most by the teacher?". Peer reputation of teacher disliking (PRTD) was measured with the item: "Which classmates are liked least by the teacher?". In order to get students to focus specifically on the teacher that participated in the study, in both these items, "the teacher" was substituted with the name of the teacher involved. Prior research on the validity of peer nominations regarding the teacher-student relationship has shown positive correlations between peer and teacher reports of teacher support ([Li, Hughes, Kwok, & Hsu, 2012](#)) and of teacher conflict ([Doumen et al., 2008](#)). In the present sample, peer reputation of teacher liking and disliking correlated strongly and positively with peer nominations of teacher behavior in interaction with their students; PRTL with teacher praise ( $r = 0.71$ ,  $p < 0.001$ ), and PRTD with the teacher getting angry with a student ( $r = 0.90$ ,  $p < 0.001$ ).

**Classroom norms.** In line with recent studies (e.g., [Boor-Klip et al., 2015](#); [Hughes et al., 2006](#); [Sentse, Veenstra, Kiuru, & Salmivalli, 2015](#)), classroom descriptive norms of PRTL and PRTD were reflected by the classroom means of the proportion scores for these peer nomination variables. This classroom average refers to the degree of liking and disliking the teacher usually shows to all students, according to students themselves.

## 2.3. Procedure

Data were collected in the fall of 2012, at least one month after the start of the school year. Schools located in the middle, south, and east of the Netherlands were recruited to participate. After

the school board and classroom teacher agreed to participate, parents were informed and were asked for their consent regarding their child's participation. Consented students completed the questionnaires on netbook computers in their classrooms. Students were seated separately, and the computers were flanked by partition screens to prevent distraction and to safeguard the students' privacy. A standard instruction was given in which confidential data handling was explained. The computers presented the peer nomination items one by one, accompanied by a list of all classmates the students could nominate. Students chose the classmates that best fitted the description from this list. To avoid sequence effects ([Poulin & Dishion, 2008](#)), the order of the names was randomized for each participant. Apart from themselves, students could nominate any of their classmates, regardless of whether they were present or had consent. Nominations given to non-consented students were excluded from the dataset. The primary sample of 1454 students who completed the questionnaire could thus nominate peers from the larger, secondary, sample of 1496 students who were consented. Because students' scores were based on received nominations, which were available for both present and non-present consented students, analyses were based on the secondary sample of 1496 consented students. After data collection was finished, teachers received a report containing averaged results for their classroom.

## 2.4. Analysis

To account for the nested data structure of students within classrooms, we performed multilevel analyses in Mplus, version 7.2 ([Muthén & Muthén, 1998–2012](#)). All student-level (L1) predictors were entered group-mean centered, and all classroom-level (L2) predictors were entered grand-mean centered. Using this approach, both the classroom level of the predictor and an individual student's deviation from it are assessed and student-level and classroom-level predictors are tested independently. For peer liking and disliking outcomes separately, a sequence of six modeling steps was followed to test the hypotheses. The quality of each model over the prior one was tested using the likelihood ratio test based on the deviance of the models. First, students' gender and prosocial behavior, overt aggression and relational aggression, as well as PRTL and PRTD were entered in model M1. Second (M2), we tested the hypotheses that PRTL and PRTD functioned as moderators for the student-level behavior–status associations. To this end, we included all two-way interaction effects of student behavior x individual PRTL/PRTD. In M2a, we tested whether these interaction effects were similar for boys and girls by including three-way interactions of student behavior x individual PRTL/PRTD x gender.

The first models only included predictors at the student level. Next, classroom norms of PRTL and PRTD were added to the model M3. Then, random slopes for the main effects of prosocial and aggressive behaviors were added, to test to what extent behavior–status associations differed across classrooms. As suggested by [Hox \(2010\)](#), random slopes were tested on a variable-by-variable basis. Hereafter, only those slopes that were significant and improved the model were added in M4. Finally, to explore how differences in behavior–status associations across classes were associated with classroom norms of teacher liking and disliking, cross-level interaction effects of student behavior x classroom norm of PRTL/PRTD were examined in M5, only for those student behaviors for which the association with peer liking or disliking significantly differed across classrooms.

Peer disliking was positively skewed, and 29 cases (1.9%) with multivariate outliers (based on residuals) were present, which were all within the possible range but did contribute to non-normality. To address these issues, the multilevel analyses were

executed with robust standard errors using a sandwich estimator (see Hox, 2010).

### 3. Results

#### 3.1. Descriptive statistics

In Table 1 the descriptive statistics are shown. Because of the aforementioned issues regarding normality, Spearman correlation coefficients are presented. Note that in the correlations, the multilevel structure of the data is not taken into account. As expected, at the student level the positive peer nomination variables of peer liking, prosocial behavior, and PRTL were all positively correlated. The more negative variables peer disliking, aggression, and PRTD were also positively correlated. Girls received more peer liking and less peer disliking nominations than boys, and girls were perceived by their peers to show more prosocial behavior and less overt aggression than boys. Students thought that teachers generally liked girls more than boys and disliked boys more than girls. Classroom norms of teacher liking and disliking were not correlated. On average, students reported more liking than disliking,  $t(1495) = 9.29$ ,  $p < 0.001$ , and more prosocial behavior than overt aggression,  $t(1495) = 21.42$ ,  $p < 0.001$ , or relational aggression,  $t(1495) = 25.76$ ,  $p < 0.001$ . Students thought their teacher had liking for more of their peers than disliking,  $t(1495) = 27.73$ ,  $p < 0.001$ . Similarly, classroom norms of teacher liking were higher than classroom norms of teacher disliking,  $t(57) = 14.12$ ,  $p < 0.001$ .

Because of the relatively high correlations between student behavior variables and peer reputation of teacher liking and disliking, careful attention was paid to possible problems regarding multicollinearity. Collinearity diagnostics did not reveal problematic values (Tabachnick & Fidell, 2007). As the correlation between overt aggression and peer reputation of teacher disliking was highest, the variability in the teacher variables for students scoring low and high on overt aggression was further examined. Table 2 shows the mean level, standard deviation and range in proportion scores of peer reputation of teacher liking and disliking for students in the lowest and highest quartile of overt aggression scores. The table shows that although highly aggressive students in general had lower PRTL and higher PRTD, variability in both teacher liking and disliking was still quite high. Some students scoring high on aggression were considered by over half of their peers to be liked by the teacher and some were perceived by no one to be disliked by the teacher. Also, students who according to their peers showed little aggression occupied the entire range of teacher liking. Finally, students with low aggression scores were relatively rarely viewed as being disliked by the teacher. Thus, although correlations were fairly high, higher levels of aggression did not automatically mean higher levels of PRTD or lower levels of PRTL, and multicollinearity was not deemed problematic for the analyses in this study.

#### 3.2. Peer liking

Table 3 shows the results of the multilevel models with peer liking as the outcome. The intercept-only model (M0) shows that the intra-class correlation (ICC) was 0.178. Thus, 17.8% of the variance in peer liking status was located at the class level. That is, in some classes students in general liked each other better than in others.

The model M1 contained gender, peer-perceived student behavior, and PRTL and PRTD. The decline in deviance of this model compared to M0 indicated a significant improvement,  $\chi^2(6) = 740.22$ ,  $p < 0.001$ . The model M1 explained 40.4% of the first-level variance in peer liking. As expected, the more prosocial behavior peers perceived the student to show, the more the student was liked by peers. Furthermore, the higher peer perceptions

of overt aggression were, the less peers liked the student. As gender was coded 0 for boys and 1 for girls, girls had somewhat lower liking scores than boys. This could be due to the slight overrepresentation of boys in the sample. Students tend to nominate more same-sex peers as liked most, and more opposite-sex peers as liked least (e.g., Dijkstra, Lindenberg, & Veenstra, 2007; Rose & Smith, 2009), so the larger amount of boys might have made boys more likely to receive liked-most nominations and less likely to receive liked-least nominations.

**PRTL and PRTD as affective filters.** As a next step (M2 in Table 3), interaction effects among student behaviors and PRTL and PRTD were added to the model. As evident in the drop in deviance, this model was an improvement,  $\chi^2(6) = 18.59$ ,  $p = 0.005$ . M2 explained 41.2% of the level-1 variance in peer liking. The positive prosocial behavior–peer liking association was weakened for students who had high PRTL. To facilitate interpretation, we calculated predicted values of likeability for students with comparably high and low levels of peer-perceived prosocial behavior, in combination with a higher (+1 SD) or lower (−1 SD) PRTL. These values are graphically depicted in Fig. 2 (left graph). The positive association between prosocial behavior and peer liking was slightly weakened when students had higher PRTL. This was possibly due to a difference between students who were low in prosocial behavior and had (a) low PRTL, or (b) high PRTL. The liking score was 0.03 higher when students had high PRTL compared to low PRTL (a third of a SD). Translated to the number of classmates nominating the student for the average class size in our sample, on average one peer more per class indicated to like this student. Considering the mean level of peer liking of three and a half classmates (14% of the participants), we considered being nominated by one peer more or less a rather meaningful difference.

PRTD moderated the association between overt aggression and peer liking. Only for students who had a high reputation of teacher disliking the association between peer-perceived overt aggression and peer liking showed a slightly negative slope (see Fig. 2, right graph). Thus, students who were perceived by their peers to show more overt aggression were less liked when they had a high reputation of teacher disliking than when they had a lower reputation of teacher disliking. This difference was 0.02 in liking score, so on average “one half” of a peer less who indicated to like the highly aggressive student.

In model M2a, we examined whether each of the two-way interaction effects (both significant and non-significant in M2) differed depending on gender. Adding these six three-way interaction effects did not significantly improve the model,  $\chi^2(6) = 8.89$ ,  $p = 0.180$ , and correspondingly, neither of the three-way interactions were significant. Therefore, we excluded these interaction effects from our next modeling steps.

**Classroom norms of teacher liking and disliking.** In model M3, we investigated main effects of classroom norms of teacher liking and disliking on peer liking. Compared to M2, this was a significant improvement,  $\chi^2(2) = 17.60$ ,  $p < 0.001$ . M3 explained 28.3% of the class-level variance in peer liking that was present in M2. The higher the classroom norm for teacher liking was, the more peers liked each other in these classes.

Next, we examined whether the amount of peer liking associated with each type of student behavior differed across classrooms. Only for prosocial behavior the difference in deviance showed that allowing the association with peer liking to differ across classes improved the model,  $\chi^2(2) = 48.72$ ,  $p < 0.001$ , so only this random slope was added to M4.

As a final step, in M5 we tested whether part of this slope variation could be explained by classroom norms of PRTL and PRTD. Adding the cross-level interaction effects did not further improve the model,  $\chi^2(2) = 0.53$ ,  $p = 0.767$ , so classroom norms could not

**Table 1**  
Spearman correlation coefficients and descriptive statistics of the study variables.

Variable	1.	2.	3.	4.	5.	6.	7.	8.	N	M (SD)	Boys M (SD)	Girls M (SD)
1. Peer liking	–								1496	0.14 (0.09)	0.13 (0.09)	0.15 (0.09)*
2. Peer disliking	–0.40**	–							1496	0.10 (0.13)	0.12 (0.15)	0.07 (0.10)–
3. Prosocial behavior	0.62**	–0.49**	–						1496	0.27 (0.15)	0.23 (0.14)	0.32 (0.15)*
4. Overt aggression	–0.30**	0.54**	–0.49**	–					1496	0.11 (0.18)	0.19 (0.21)	0.03 (0.07)–
5. Relational aggression	–0.13**	0.43**	–0.24**	0.54**	–				1496	0.12 (0.13)	0.12 (0.13)	0.13 (0.13)
6. PRTL individual	0.37**	–0.26**	0.56**	–0.42**	–0.26**	–			1496	0.29 (0.16)	0.23 (0.13)	0.36 (0.16)*
7. PRD individual	–0.28**	0.51**	–0.49**	0.65**	0.45**	–0.46**	–		1496	0.10 (0.16)	0.16 (0.19)	0.04 (0.07)–
8. PRTL norm	0.16*	0.08**	0.19**	0.03	0.01	0.60**	0.03	–	58	0.29 (0.10)	–	–
9. PRD norm	0.05*	0.14**	0.12**	0.11**	0.13**	–0.03	0.18**	–0.02	58	0.10 (0.03)	–	–

Note. PRTL = peer reputation teacher liking; PRD = peer reputation teacher disliking. All correlations among group-mean centered variables. Means and standard deviations are based on un-centered variables.

\*  $p < 0.05$ .

\*\*  $p < 0.01$ . +/– Girls had a score that was higher/lower than the boys' score with  $p < 0.05$ .

**Table 2**  
Means and ranges in peer reputations of teacher liking and disliking for students showing little and much overt aggression.

	Low overt aggression			High overt aggression		
	M (SD)	Min.	Max.	M (SD)	Min.	Max.
PRTL	0.39 (0.17)	0.00	0.89	0.20 (0.12)	0.00	0.65
PRD	0.02 (0.04)	0.00	0.28	0.28 (0.22)	0.00	1.00

Note. PRTL = peer reputation teacher liking; PRD = peer reputation teacher disliking.

**Table 3**  
Student behavior and peer reputation of teacher liking and disliking as predictors of peer liking status.

	Intercept only		Student-level models				Class-level models			
	M0	M1		M2		M3		M4		M5
	B (SE)	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	B (SE)	
Fixed part										
Intercept	0.14 (0.01)**	0.15 (0.01)**		0.15 (0.01)**		0.16 (0.01)**		0.15 (0.01)**		0.15 (0.01)**
Student main effects										
Gender (0 = male)		–0.02 (0.01)**	–0.11	–0.02 (0.01)**	–0.10	–0.02 (0.01)**	–0.10	–0.01 (0.01)		–0.01 (0.01)
Pros		0.40 (0.03)**	0.63	0.41 (0.03)**	0.65	0.41 (0.03)**	0.65	0.41 (0.03)**		0.41 (0.03)**
OvAgg		–0.03 (0.02)**	–0.06	–0.01 (0.03)**	–0.03	–0.01 (0.03)**	–0.02	–0.00 (0.03)		–0.00 (0.03)
ReAgg		0.03 (0.02)**	0.05	0.04 (0.02)**	0.05	0.04 (0.02)**	0.05	0.02 (0.02)		0.02 (0.02)
PRTL		0.01 (0.03)**	0.02	0.04 (0.03)**	0.06	0.04 (0.03)**	0.06	0.03 (0.03)		0.03 (0.03)
PRD		0.00 (0.02)**	0.00	0.03 (0.03)**	0.06	0.03 (0.03)**	0.06	0.03 (0.03)		0.03 (0.03)
Student interactions										
Pros*PRTL				–0.42 (0.17)**	–0.10	–0.42 (0.17)**	–0.10	–0.44 (0.17)**		–0.44 (0.17)**
Pros*PRD				–0.22 (0.17)**	–0.07	–0.21 (0.17)**	–0.07	–0.25 (0.17)		–0.25 (0.17)
OvAgg*PRTL				–0.29 (0.16)**	–0.08	–0.27 (0.16)**	–0.08	–0.23 (0.14)		–0.23 (0.14)
OvAgg*PRD				–0.22 (0.07)**	–0.17	–0.22 (0.06)**	–0.17	–0.21 (0.06)**		–0.21 (0.06)**
ReAgg*PRTL				0.39 (0.24)**	0.07	0.41 (0.24)**	0.08	0.31 (0.24)		0.30 (0.24)
ReAgg*PRD				0.12 (0.09)**	0.05	0.13 (0.08)**	0.06	0.11 (0.09)		0.10 (0.10)
Class main effects										
PRTL norm						0.22 (0.06)**	0.52	0.21 (0.05)**		0.22 (0.06)**
PRD norm						0.21 (0.17)**	0.13	0.26 (0.16)		0.20 (0.17)
Cross-level interactions										
Pros*PRTL norm										0.03 (0.22)
Pros*PRD norm										–0.56 (0.92)
Random part										
Student variance	0.0073 (0.0004)	0.0043 (0.0003)		0.0043 (0.0003)		0.0043 (0.0003)		0.0040 (0.0002)		0.0040 (0.0002)
Class variance	0.0016 (0.0005)	0.0017 (0.0005)		0.0017 (0.0005)		0.0012 (0.0003)		0.0013 (0.0003)		0.0013 (0.0003)
Pros slope								0.0163 (0.0051)		0.0161 (0.0049)
Deviance										
–2Log likelihood	–3010.00	–3750.22		–3768.81		–3786.41		–3835.13		–3835.66
Δ –2Log likelihood		740.22**		18.59**		17.60**		48.72**		0.53

Note. PRTL = peer reputation teacher liking; PRD = peer reputation teacher disliking; Pros = prosocial behavior; OvAgg = overt aggression; ReAgg = relational aggression.

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

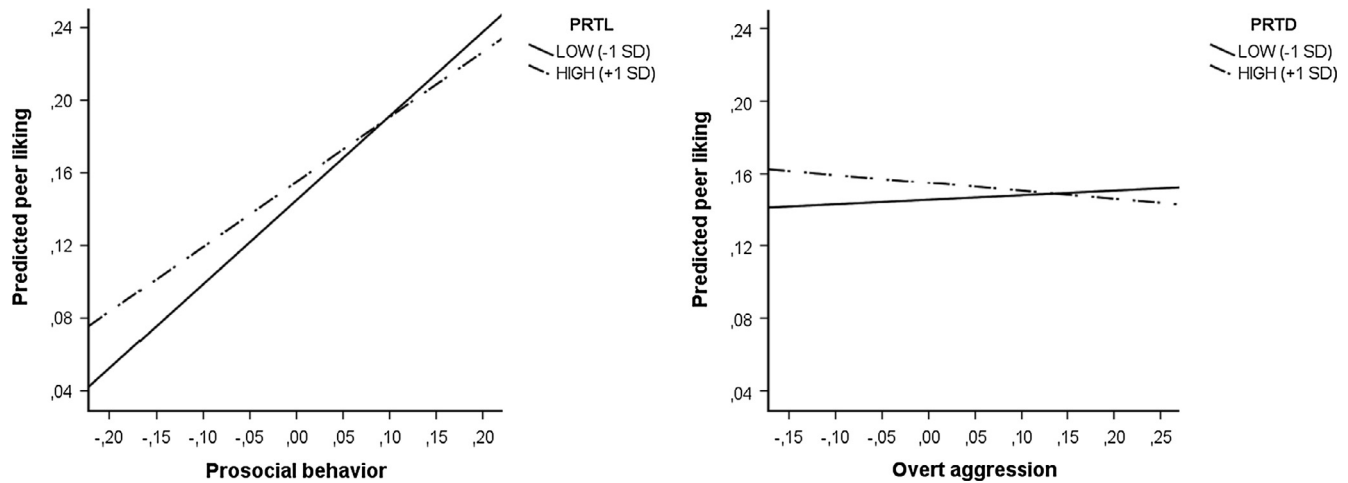


Fig. 2. Predicted values for peer liking as a function of prosocial behavior for low and high levels of Peer Reputation of Teacher Liking (PRTL; left graph), and as a function of overt aggression for low and high Peer Reputation of Teacher Disliking (PRTD; right graph).

explain variation in the prosocial behavior–peer liking association across classes.

### 3.3. Peer disliking

Table 4 shows the results of the multilevel models with peer disliking as the outcome. The intercept-only model (M0) shows that the ICC was 0.015. Thus, only 1.5% of the variance in peer disliking status was located at the class level. In contrast to the findings for peer liking, classes hardly differed in the extent to which peers disliked each other. Multilevel analysis was nonetheless proceeded to correctly estimate standard errors and cross-level interaction effects for these nested data (Hox, 2010).

The model M1 contained gender, peer-perceived student behavior, and PRTL and PRTD, and was a significant improvement to M0,  $\chi^2(6) = 1088.12$ ,  $p < 0.001$ . M1 explained 53.2% of the student-level variance in peer disliking. As expected, the more overt as well as relational aggressive behaviors students showed according to their peers, the more they were disliked by their peers. The more prosocial behavior nominations students received, the less they were disliked by their peers. Betas show that the association with disliking was stronger for overt aggression ( $\beta = 0.31$ ), and prosocial behavior ( $\beta = -0.33$ ) than for relational aggression ( $\beta = 0.08$ ). In accordance with the results for liking, girls received somewhat more disliking nominations than boys. Surprisingly, both PRTL and PRTD were positively related to peer disliking. Teacher disliking was more strongly associated with peer disliking than was teacher liking, as  $\beta = 0.08$  for PRTL and  $\beta = 0.26$  for PRTD.

**PRTL and PRTD as affective filters.** In M2 the interaction effects of the student behaviors with PRTL and PRTD were added. This was an improvement as compared to M1,  $\chi^2(6) = 63.16$ ,  $p < 0.001$ . This model explained 55.3% of the level-1 variance in peer disliking. PRTD moderated the prosocial behavior–disliking and the overt aggression–disliking association. The negative prosocial behavior–disliking association was strengthened for students who had high PRTD (see Fig. 3, left graph). Thus, students who were perceived by peers to show relatively much prosocial behavior were even less disliked more peers thought the teacher disliked the student. As we did for peer liking, we translated this difference to numbers of peers who nominated the student. On average, this difference in disliking was 0.04, or 1 disliking nomination less. On the other end, students who received relatively little nominations were more strongly disliked by their peers when they had a high reputation of teacher disliking. This difference was 0.06 or one

and a half nominations. On average, students were disliked by two and a half peers with a standard deviation of three peers, so again a difference of one or one and a half nominations was considered rather substantial.

The positive overt aggression–disliking association was amplified for students who had higher PRTD (see Fig. 3, right graph). When relatively highly aggressive students had a higher reputation of teacher disliking, their disliking score was even 0.04 higher. That is, they were disliked by one more peer than when they had lower PRTD.

In model M2a, again none of the two-way interaction effects differed depending on gender. Adding these six three-way interaction effects did not significantly improve the model,  $\chi^2(6) = 10.08$ ,  $p = 0.121$ , and neither of the three-way interactions were significant. Therefore, as we did for peer liking, we proceeded to the next modeling step without including these three-way interaction effects.

**Classroom norms of teacher liking and disliking.** M3 contained the main effects of classroom norms of PRTL and PRTD (see Table 4), which was a significant improvement of the model,  $\chi^2(2) = 19.01$ ,  $p < 0.001$ . M3 explained 41.1% of the class-level variance in peer disliking that was present in M2. Surprisingly, both norms of teacher liking and of teacher disliking were positively associated with peer nominations for disliking status in the class. As expected, the teacher disliking norm was more strongly associated with peer disliking than was the teacher liking norm, as  $\beta = 0.35$  and  $\beta = 0.56$  for PRTL and PRTD norms, respectively.

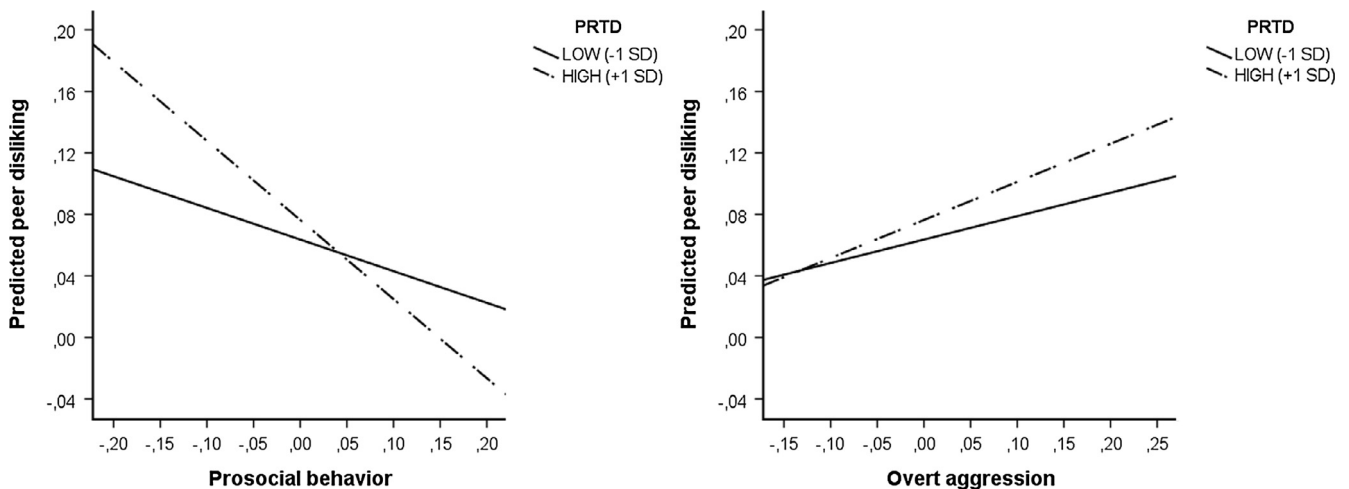
Next, we examined whether behavior–disliking associations differed across classes. Adding a random slope for overt aggression showed a significant drop in deviance compared to M4,  $\chi^2(2) = 100.62$ ,  $p < 0.001$ , as did adding a random slope for relational aggression,  $\chi^2(2) = 27.21$ ,  $p < 0.001$ . Consistently, M4 containing both these random slopes was an improvement compared to M3,  $\chi^2(5) = 117.94$ ,  $p < 0.001$ , and both slopes significantly varied across classes.

Finally, in M5 we tested whether variation in associations between each type of aggression and peer disliking could be explained by classroom norms of PRTL and PRTD. M5 was an improvement compared to the previous model,  $\chi^2(4) = 13.70$ ,  $p = 0.008$ . Cross-level interaction effects explained 23.3% of the slope variance for overt aggression, and 28.2% of the slope variance for relational aggression. Classroom norms of PRTL were associated with the slopes of both types of aggression, but, remarkably so, in opposite directions. As can be seen in Fig. 4 (left graph), the

**Table 4**  
Student behavior and peer reputation of teacher liking and disliking as predictors of peer disliking status.

	Intercept only		Student-level models				Class-level models			
	M0	M1	M2		M3		M4	M5		
	B (SE)	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	B (SE)	
<b>Fixed part</b>										
Intercept	0.10 (0.00)**	0.08 (0.00)**		0.07 (0.00)**		0.07 (0.00)**		0.07 (0.01)**	0.07 (0.01)**	
			<i>Student main effects</i>							
Gender (0 = male)		0.04 (0.01)**	0.14	0.03 (0.01)**	0.11	0.03 (0.01)**	0.11	0.03 (0.01)**	0.03 (0.01)**	
Pros		-0.31 (0.03)**	-0.33	-0.36 (0.03)**	-0.38	-0.35 (0.03)**	-0.38	-0.36 (0.03)**	-0.36 (0.03)**	
OvAgg		0.22 (0.06)**	0.31	0.20 (0.06)**	0.28	0.21 (0.06)**	0.30	0.23 (0.06)**	0.23 (0.06)**	
ReAgg		0.08 (0.03)**	0.08	0.11 (0.04)**	0.11	0.11 (0.04)**	0.11	0.10 (0.03)**	0.10 (0.03)**	
PRTL		0.08 (0.03)**	0.08	0.05 (0.04)**	0.05	0.06 (0.04)**	0.06	0.06 (0.04)	0.05 (0.04)	
PRTD		0.21 (0.06)**	0.26	0.04 (0.06)**	0.05	0.05 (0.05)**	0.06	0.03 (0.06)	0.03 (0.06)	
<i>Student interactions</i>										
Pros*PRTL				0.32 (0.22)**	0.05	0.31 (0.21)**	0.05	0.21 (0.22)	0.19 (0.22)	
Pros*PRTD				-0.97 (0.31)**	-0.20	-0.94 (0.30)**	-0.19	-1.13 (0.35)**	-1.13 (0.35)**	
OvAgg*PRTL				0.67 (0.46)**	0.13	0.76 (0.46)**	0.14	0.49 (0.49)	0.41 (0.48)	
OvAgg*PRTD				0.30 (0.14)**	0.16	0.29 (0.14)**	0.15	0.12 (0.20)	0.11 (0.20)	
ReAgg*PRTL				-0.24 (0.37)**	-0.03	-0.22 (0.37)**	-0.03	-0.08 (0.39)	-0.05 (0.39)	
ReAgg*PRTD				-0.29 (0.22)**	-0.08	-0.27 (0.22)**	-0.08	-0.18 (0.23)	-0.18 (0.23)	
<i>Class main effects</i>										
PRTL norm						0.08 (0.03)**	0.35	0.08 (0.04)*	0.08 (0.03)**	
PRTD norm						0.50 (0.14)**	0.56	0.48 (0.14)**	0.47 (0.14)**	
<i>Cross-level interactions</i>										
OvAgg*PRTLnorm									-0.97 (0.25)**	
OvAgg*PRTDnorm									-1.50 (1.16)	
ReAgg*PRTLnorm									0.87 (0.25)**	
ReAgg*PRTDnorm									0.71 (0.94)	
<i>Random part</i>										
Student variance	0.0164 (0.0010)	0.0076 (0.0005)		0.0074 (0.0005)		0.0073 (0.0005)		0.0063 (0.0005)	0.0063 (0.0005)	
Class variance	0.0002 (0.0002)	0.0006 (0.0002)		0.0005 (0.0002)		0.0003 (0.0001)		0.0004 (0.0001)	0.0004 (0.0001)	
OvAgg slope								0.0450 (0.0118)	0.0345 (0.0104)	
ReAgg slope								0.0195 (0.0080)	0.0140 (0.0065)	
<i>Deviance</i>										
-2Log likelihood	-1891.04	-2979.16		-3042.32		-3061.33		-3179.27	-3192.97	
Δ -2Log likelihood		1088.12*		63.16*		19.01**		117.94**	13.70**	

Note. PRTL = peer reputation teacher liking; PRTD = peer reputation teacher disliking; Pros = prosocial behavior; OvAgg = overt aggression; ReAgg = relational aggression.  
\* p < 0.05.  
\*\* p < 0.01.

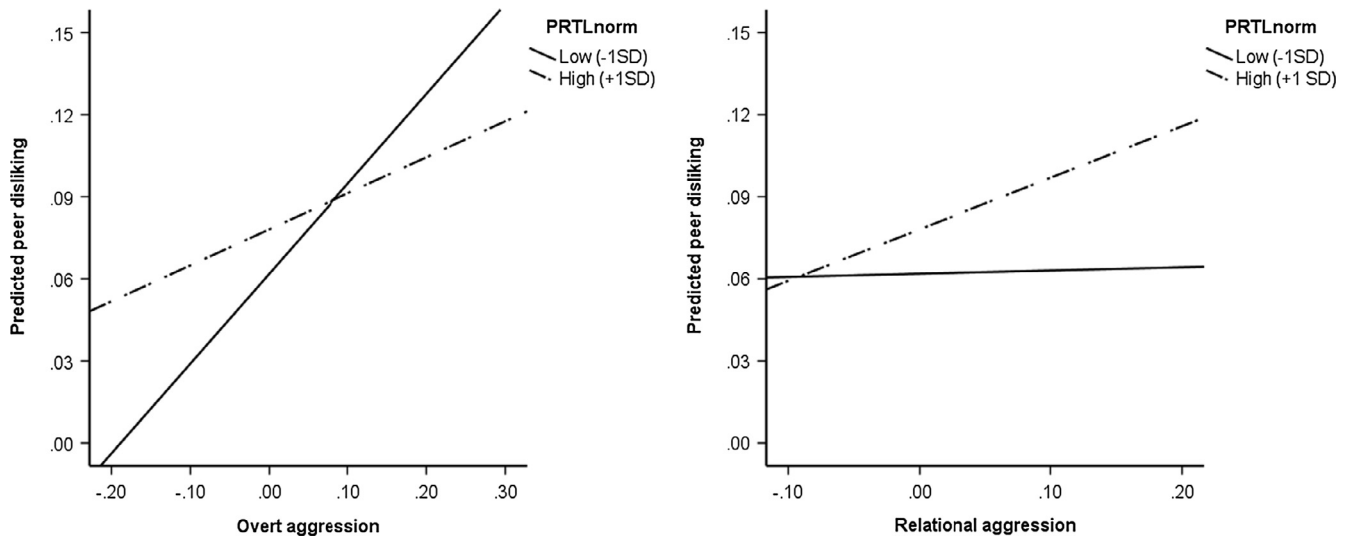


**Fig. 3.** Predicted values for peer disliking as a function of prosocial behavior (left graph) and overt aggression (right graph) for low and high Peer Reputation of Teacher Disliking (PRTL).

positive overt aggression–disliking association was less strong in classrooms where norms of teacher liking were higher. Students who received many overt aggression nominations had a disliking score that was 0.03 lower in a classroom with a high PRTL norm than in a class with a low PRTL norm, which corresponds to being

disliked by almost one peer less. The positive relational aggression–disliking association was stronger when classroom norms of teacher liking were higher (see Fig. 4, right graph). Students who were perceived by their peers to show much relational aggression had a disliking score that was 0.05 higher in a classroom with a





**Fig. 4.** Predicted values for peer disliking as a function of overt aggression (left graph) and relational aggression (right graph) in classes with low and high Teacher Liking (PRTL) norms.

high PRTL norm than in one with a low PRTL norm, corresponding to over one peer more who disliked the student.

#### 4. Discussion

In this study, we aimed to investigate how peer reputations of teacher liking and disliking are an affective filter for the affective peer evaluation of students' prosocial and aggressive behavior. The study advances the understanding of the role of the teacher in peer relationships and builds on an integrative framework including both student and teacher predictors that contribute to peer status on an individual and on a classroom level. In addition, studying peer liking and disliking separately instead of the composite measure of social preference allowed us to disentangle effects and pinpoint exactly in which area the teacher can be of significance. Results revealed that at the individual level, primarily peer reputation of teacher disliking, and to a lesser extent also reputation of teacher liking, moderated some of the behavior–status associations. The teacher made a difference in particular for those students who were at-risk of low peer status, that is, those students who were perceived by many of their peers to show aggressive behavior and by few to show prosocial behavior. The teacher thus could avoid stigmatization of certain students. At the class level, we found that differences across classes in aggression–disliking associations depended on classroom norms of teacher liking. The teacher's positive attitude towards students was associated with a classroom climate in which overt aggression was less harshly rejected, while relational aggression was more strongly disliked.

##### 4.1. Individual peer reputation of teacher liking and disliking

The results regarding the moderating role of peer reputations of teacher liking and disliking on the individual level support the concept of the teacher as an affective filter (Hughes, 2012) for peers' affective responses to prosocial behavior and overt aggression. Peer perceptions of these student behaviors were differentially associated with peer status, depending on teacher liking (prosocial behavior) and disliking (prosocial behavior and overt aggression). These findings are in concordance with studies by Chang et al. (2007) and Moore et al. (2012). Moore et al. interpreted their

results as the teacher having a protective role for at-risk students' peer status. Our study supports this proposition, as peer reputation of teacher liking or disliking was mostly of significance for the peer status of those students who showed little prosocial behavior or much overt aggression. For these students, being liked or disliked by the teacher made the difference between being liked or disliked by on average one or “one and a half” peer more or less. For friendships, it is known that having one friend instead of no friends has a strong effect on students' well-being (Hodges, Boivin, Vitaro, & Bukowski, 1999). The same may hold for peer liking; students who are liked by at least one classmate may have the feeling of a secure base to count on for social support. Being disliked by one peer less may increase the chances for a student to engage in enjoyable and fruitful social interactions.

Viewing the role of the teacher as a moderator was a significant improvement to the models that only included main effects of peer reputation of teacher liking and disliking. This corresponds to Chang et al.'s (2007) finding that older students are less likely to directly incorporate the teacher's views as their own, but rather will adapt to and use the information provided by the teacher to create their own image of their classmates.

As we expected, peer reputation of teacher disliking was more strongly related to peer status than reputation of teacher liking. This may be explained by a negativity bias, referring to negative information having a stronger impact than positive information (see Vaish et al., 2008). An alternative explanation of the stronger effect of teacher disliking than liking could be that generally negative teacher affect is more rare than positive affect (Baker, 2006). Thus, students who are perceived to be disliked by the classroom teacher may stand in sharp contrast with others. In accordance with prior research (e.g., De Laet et al., 2014; Hughes et al., 2001), the average peer reputation of teacher liking was indeed more than twice as high as the average peer reputation of teacher disliking, supporting a standing out effect of negative teacher affect. Finally, it could be possible that teacher liking is ambivalent regarding its association with peer status and is therefore a less clear predictor of peer status than teacher disliking. On the one hand, teacher liking can result in a positive affective filter, which would lead to peer liking, whereas on the other hand students who are liked by the teacher can be seen as the “teacher's pet” (Babad, 1995, 2009) and are therefore disliked by peers. When both these processes occur, the combined association of teacher liking

with peer status might turn out to equal zero. For future research it would be interesting to examine which student, peer and teacher factors contribute to a student being liked by both teacher and peers versus the student becoming a non-popular “teacher’s pet” (see Babad, 2009).

#### 4.2. Classroom norms of teacher liking and disliking

In line with prior research (e.g., Chang, 2004; Stormshak et al., 1999) we found behavior–status associations to differ across classrooms as well as across individuals. As expected, the teacher also played a role at the class level (see Chang, 2003; Gest & Rodkin, 2011). In classes with a higher norm of teacher liking, peer-perceived overt aggression was less strongly associated with peer disliking than in classrooms with lower norms of teacher liking. This may reflect that peers have more understanding for students who show deviant behavior, and do not respond too harshly to students who occasionally act out. Contrary to this finding and to our expectations, peer-perceived relational aggression was more strongly related to peer disliking in classrooms with higher norms of teacher liking. Possibly in classes with a high teacher liking norm positive peer relationships are more strongly encouraged and valued, and correspondingly peers more easily dislike those students whom they view to attempt to disturb these liking ties. Relational aggression is different form overt aggression in the sense that it is mainly aimed at harming interpersonal relationships. In other words, showing relational aggression may violate the norm of fostering positive relationships and therefore is more strongly rejected.

In agreement with Hughes et al.’s (2006) findings, we found that in classes where teacher liking was more normative, students in general liked more of their peers themselves as well, whereas, in classes where teacher disliking was more normative, students also disliked more of their peers. These findings support the view that teachers, when fostering a climate in which positive relationships are more and negative relationships are less normative, may promote positive versus negative relationships among peers as well. Surprisingly, classroom norms of teacher liking were also positively associated with peer disliking. It could be the case that this reflects a random tendency within classes to nominate a smaller or larger proportion of classmates on any questionnaire item. Alternatively, higher norms of teacher liking could create a climate in which students feel safer to indicate their disliking for others.

For future research, it would be interesting to examine the classroom structure of teacher liking and disliking, next to the classroom descriptive norms. The classroom structure entails the extent to which teacher (dis)liking is distributed equally across classmates. For instance, when all students are liked equally well, individual teacher liking may have a different impact on students’ peer status than when the teacher is perceived to have a few favorite students (see Hughes & Zhang, 2007).

#### 4.3. Practical implications

Efforts to improve students’ peer status have often focused on behavioral training for the target student (for a review, see Bierman & Powers, 2009). However, it often turns out to be difficult to alter behavior, and even if students become less aggressive, this does not necessarily affect their peer status (Denham & Holt, 1993). As an addition to this social skill deficits approach, Hymel et al. (1990) made a case for including the social context of the classroom in intervention efforts. Our study findings show how the teacher, as part of the social context, can have a powerful role in the social relationships among peers. By showing positive affect for at-risk students in particular, teachers may break a vicious cycle of students showing deviant behavior, being rejected by

peers and teacher, experiencing difficulties in their social as well as school lives, therefore showing deviant behavior, and so on.

For teachers to live up to this role it is first important that they have an awareness of their impact on students’ attitudes. Without such awareness, teachers may act intuitively, but can hardly be expected to meaningfully and purposefully engage in shaping classroom peer relations or to reflect on their teaching practices. Moreover, an awareness of the degree of association between social and academic development might be important for some teachers to appreciate the value of trying to improve peer relations. If teachers view it as their sole purpose to provide students with opportunities to gain academic skills and do not see social-emotional learning as their responsibility, they will probably not try to promote peer relations (Kochenderfer-Ladd & Ladd, 2016). However, when teachers come to understand the importance of a pleasant peer ecology for academic achievement, they may invest in peer relations as a pathway to academic success. Thus, it seems important that teacher training programs focus on the powerful impact teachers may have on multiple aspects of students’ lives.

Another important part of teacher training would be for teachers to develop strategies for improving the classroom climate. Regarding individual students’ peer status, the study findings suggest that when teachers communicate less disliking for students who show little prosocial behavior or much overt aggression, these students are likely to be disliked less by their peers. Based on our findings it is probably less relevant for teachers to invest a large amount of effort in increasing positive interaction with certain students. Both increasing positive interaction and decreasing negative interaction are strategies that require effort from the teacher. Allocating effort to the option that is most effective is important to diminish the associated stress level of the teacher. However, this advice not to reprimand students who show undesirable behavior might be problematic for two reasons. First, not responding to disruptive or aggressive behavior as it occurs is often troublesome as the behavior needs to be stopped. A solution might be not to reprimand students publicly for their behavior, but more privately, when peers may not be able to notice the negative teacher behavior. Thus, teachers seem to need to be mainly aware of their negative behavior with students at-risk for low peer status when this behavior is witnessed by the student’s classmates. Secondly, publicly reprimanding students for their aggressive behavior may have the function of communicating to classmates whether certain behavior in general is desirable or not. The advice to teachers to refrain from public reprimands could thus also be problematic in this sense. An alternative approach that avoids stigmatization yet also educates students regarding what types of behavior are considered desirable is needed. One such approach could be to negotiate classroom rules in general (e.g., “we do not hit each other”), and place responsibility for living up to these rules with students themselves, as a collective. An example of such an approach is the Good Behavior Game (Barrish, Saunders, & Wolf, 1969), in which teams of students are rewarded for showing desirable behavior and students are encouraged to support each other in behaving appropriately (see Leflot, Van Lier, Onghena, & Colpin, 2013). This approach has shown to diminish undesirable behaviors in general (for a review, see Flower, McKenna, Bunuan, Muething, & Vega, 2014), and aggression in particular (Flower et al., 2014; Leflot et al., 2013).

At the classroom level, it seems important for teachers to have a positive approach to student behavior, and thereby to create a climate in which respect and liking are normative, more so than disliking. Our results suggest that a climate of positive affect induced understanding and respect for students who sometimes hit or kick others or call them names. Although this may sound like a desirable situation, there is also a downside. The norm salience (i.e., the association between student behavior and peer status) can be

viewed in terms of rewards or sanctions that are within a classroom generally associated with different types of student behavior (Henry et al., 2000). When overt aggression is less strongly related to peer disliking, the behavior is less strongly sanctioned, which can lead to increased exhibition of aggressive behavior (Henry et al., 2000). When teachers notice that aggression is on the rise as a result of the alleviated association between aggression and disliking, they may need other practices or intervention programs to neutralize this unwanted side effect. In the light of norm salience in terms of rewards and sanctions, the findings for relational aggression are promising; in classes with higher norms of teacher liking, this positive climate was associated with stronger sanctions, in terms of peer disliking, following gossiping about or excluding others.

#### 4.4. Limitations and directions for future research

The study results need to be interpreted in the light of several limitations. First, although we explained our findings in terms of peer reputations of teacher liking affecting peer status and behavior–status associations, associations between teacher and peer variables are probably far more complex than depicted here. Possibly, teacher behavior is also interpreted by peers to reflect teacher liking and disliking differently for students whom peers perceive to show prosocial behavior or aggression. Future research would benefit from a longitudinal design in which the temporal order of effects (and, to a certain degree, causality) can be better investigated. Also, intervention studies in which teacher behavior is manipulated and subsequent changes in peer nominations are examined could support causality of these associations.

A second limitation may be that all study variables were based on peer reports and thus shared method variance could be an issue; it could be the case that students' evaluations of their peers reflected a general positive versus negative evaluation of the peer. Since we were mainly interested in associations between peers' own views, using observations or teacher ratings of student behavior or teacher–student relationships would lower the validity of our measures, which seemed to be a larger disadvantage than using peer nominations for all study variables. Based on our investigation of multicollinearity, we think it is relatively safe to conclude that common method variance did not distort the results too much. At least not all students only reported a general positive or negative evaluation of their classmates. To extend the current study and include all relevant parties, future research could include teachers' perceptions about these classroom relationships. Moreover, the connections of peer and teacher reports with observations of actual teacher behavior could be investigated, to add to our understanding of the ways in which teacher–student interactions and students' peer status are related.

Third, peer reputations of teacher (dis)liking may not only moderate associations between peer perceptions of student behavior and peer (dis)liking, but also associations between actual and peer-perceived student behavior. Students interpret ambiguous behavior differently when exhibited by a peer they like or a peer they dislike (Peets et al., 2008). In the same vein, the affective filter provided by teacher liking or disliking may affect whether or not ambiguous student behaviors, for instance, a punch, are interpreted as playful or as aggressive. So, the association between actual and peer-perceived student behavior might also be moderated by the teacher, which would make the teacher's impact on students' perceptions of each other even stronger.

Finally, the affective filter mechanism might better be examined as situated within each individual perceiver rather than in terms of peer reputation. That is, a single peer perceiver has an idea of how the teacher likes a certain target student. The peer may use this information when evaluating the student himself. For future

research, a focus on the processes from the point of view of the individual perceiver may add to the interpretation of an affective filtering mechanism. To this end, analysis techniques that are aimed at determining the probability of an individual peer indicating to like or dislike a certain student, based on characteristics of the student, the peer, and the dyad, could be useful (e.g., Snijders, 2001; Zijlstra, Van Duijn, & Snijders, 2006).

## 5. Conclusion

In conclusion, this study's findings add to the existing literature aimed at revealing the “invisible hand” of the teacher. Peer reputation of teacher disliking seems powerful especially for avoiding or increasing stigmatization of those students who are at risk for low peer status. That is, being perceived by peers to be disliked by the teacher harmed the already low peer status of students who showed little prosocial behavior or much overt aggression in particular. Furthermore, the normative levels of teacher liking and disliking in the classroom were associated with peer relationships. When teachers understand the consequences of the interactions they have with individual students for the students' peer status, they may interact more strategically and create a climate in which positive peer relationships flourish.

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