Pupil aggressiveness and perceptual orientation towards weakness in a teacher who is new to the class

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HIGHLIGHTS

► Research topic is associations between aggressiveness and perceptual orientation.
► Perceptual orientation towards signs of weakness in teachers was investigated.
► Self-reports were collected from a sample of 10th grade pupils.
► Reactively aggressive pupils show some interest in signs of weakness.
► Proactively aggressive pupils show considerable interest in signs of weakness.

ARTICLE INFO

ABSTRACT

In this study we investigated the relations between reactive and proactive aggressiveness in pupils and a perceptual orientation described as interest in signs of weakness in a teacher who is new to the class. Self-reported data were collected from a sample of 10th grade pupils. There was a substantial and significant relation between proactive aggressiveness and a perceptual orientation towards weakness in teachers new to the class. Reactive aggressiveness was significantly but weakly related to perceptual orientation towards weakness. Results are discussed as adding to knowledge about the two types of aggressiveness, and as information that can guide teachers' practice.

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1. Introduction

Pupils' aggression in school is a worldwide and huge problem, and targets of this aggression are both teachers and peers. Bullying which targets peers is a common form of physical or psychological aggression involving millions of pupils as victims and/or bullies in Europe (Olweus, 1994; Roland, Bru, Midthassel, & Vaaland, 2010; Smith, 2005; Spiel & Strohmeier, 2011), North America (Hilton, Angela-Cole, & Wakita, 2010; Pepler & Craig, 2011), Australia (Burns, Maycock, Cross, & Brown, 2008; Rigby, 2012), Japan (Akiba, Shimizu, & Zhuang, 2010; Hilton et al., 2010; Morita, Soeda, Soeda, & Taki, 1999) and other countries (Strohmeier & Noan, 2012).

Our study investigates whether proactive and reactive aggressiveness in pupils is associated with a perceptual orientation towards signs of weakness in a teacher that is new to the pupil.

Answers to this question are interesting both for broadening the psychological understanding of the two forms of aggressiveness and for teachers' practice when meeting school classes that are new to them.

Internationally, pupils' disruptive behaviour and verbal or physical aggression towards teachers is a widely recognized problem (Beaman, Wheldall, & Kemp, 2007; Osher, Bear, Sprague, & Doyle, 2010; Santiago, Otero-Lópes, Castro, & Villardefrancos, 2008; Vaaland, Idsoe, & Roland, 2011). Such pupil behaviour is certainly negative for the learning climate (Cameron, 1998; Evertson & Weinstein, 2006; Gu, Lai, & Ye, 2011; Infantino & Little, 2005) and for the teacher (Clunies-Ross, Little, & Kienhuis, 2008; Hastings & Bham, 2003; Infantino & Little, 2005; Landers, Servilio, Alter, & Haydon, 2011; Santiago et al., 2008). Approaches to understanding, preventing and dealing with aggressive and disruptive pupil behaviour in schools and classrooms are developed and discussed across nations and continents, and individual as well as classroom and school level explanations and interventions are common (Clunies-Ross et al., 2008; Ding, Li, Li, & Kulm, 2008;

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Infantino & Little, 2005; Marzano, 2003; Olweus, 1994; Rigby, 2012; Rigby & Barrington, 2003; Rutter & Maughan, 2002). Across most of the empirical works and irrespective of what approaches are recommended, the class teacher stands out as a key factor when it comes to preventing and handling aggression in classrooms (Akiba et al., 2010; Clunies-Ross et al., 2008; Ding, Li, Li, & Kulm, 2010; Ertesvåg, 2009; Infantino & Little, 2005; Johnson, Oswald, & Adey, 1993; Little, 2005; Osher et al., 2010; Roland, 2011; Vaaland et al., 2011). A particularly interesting and important event is the first meeting between a teacher and a class of pupils, since this meeting has a huge potential for setting the trend for teacher–class interactions in the short and long term future (Kelley, 1950; Roland, 2007; Vaaland, 2011).

1.1. Aggressiveness and perceptual orientation

Reactive aggression is described as a hostile and angry reaction to a perceived frustration (Dodge, 1991). The intention of the aggressive reaction is to cause harm to the source of the frustration or to defend oneself, and it is pushed by an aversive event. As Dodge and Coie (1987) describe it, a perceived threatening stimulus triggers retaliatory aggression as a defensive reaction. The tendency to respond to frustrating events with anger and aggression is described as reactive aggressiveness (Roland & Idsoe, 2001). Emotional arousal and impulsivity are typical for this type of aggression (Vitaro & Brendgen, 2005).

Proactive aggression is instrumental behaviour used as a means of achieving external rewards (Dodge, 1991). The instigating factor is the expected success and the belief that aggression leads to positive results (Dodge, 1991). External rewards that motivate proactive aggression can be material or social. Many researchers have focused on social power or dominance over others as a major reward and reinforcement in proactive aggression (Dodge, 1991; Roland & Idsoe, 2001; Vitaro & Brendgen, 2005). Roland and Idsoe (2001) describes proactive aggressiveness as a personal tendency to use aggression in a proactive manner.

Social behaviour, e.g. aggression, occurs as an output of an interaction between an individual and a social context (Dodge & Rabiner, 2004). The process from social perception to behavioural response includes several steps and mental operations. The social information processing model described by Crick and Dodge (1994, 1996) describes six stages in the process starting with encoding of cues, interpretation, clarification of goals, response access or construction, response decision and, finally, behavioural enactment (Crick & Dodge, 1994). The two forms of aggression differ with regard to the elements involved in processing social information (Crick & Dodge, 1996; Dodge, 1991; Dodge & Coie, 1987).

Dodge and Coie (1987) describe hostile attribution bias as a tendency related to reactive aggression. Pupils who have high levels of reactive aggression will, to a greater extent than others, interpret ambiguous situations as hostile, provocative and threatening (Dodge & Coie, 1987). They attribute hostile intentions to others and therefore interpret situations in ways that make it reasonable to defend themselves. Defensive aggression is explained by Dodge (1980) as a synonym for reactive aggression. Errors in intention-cue interpretation are one reason for the hostile attribution bias (Crick & Dodge, 1994; Dodge & Coie, 1987).

Proactive aggression is not associated with attribution biases (Crick & Dodge, 1996; Dodge, 1991). However, proactively aggressive pupils have a different profile from reactively aggressive and non-aggressive pupils for two other elements of social information processing.

Crick and Dodge's (1996) investigation of the stage in the process called clarifying goals, shows that children who are proactively aggressive are more likely than others to choose goals which can be characterized as instrumental and self-enhancing. The researchers claim that when proactively aggressive children choose goals, they reveal cognitive patterns that will increase the likelihood of using aggressive behaviour.

Proactive aggression is also related to the planning of purposeful actions i.e. the stage at which the child makes a decision about their response. Proactively aggressive children show a tendency to evaluate aggressive outcomes positively (Dodge, 1991). Compared to non-aggressive or reactively aggressive pupils, proactively aggressive children express higher expectations of success in reaching goals by use of aggressive means (Crick & Dodge, 1996). In other words, their physical or verbal aggression is motivated by the expectation of external rewards. It follows from this that each time they succeed – whenever aggression pays off – the tendency to use aggression as a means of reaching satisfaction will be reinforced (Crick & Dodge, 1996).

According to the steps of the social information processing model, the path from the detection of cues to the enactment of behaviour is an interaction between the individual and the situation (Crick & Dodge, 1996). This implies that equivalent situations will be defined and handled differently by different individuals on the basis of their personal traits and tendencies, including their aggressiveness. Though the mental steps are common to all, each individual brings to the process their "data base" of memories, acquired rules, social schemas, social knowledge etc. (Crick & Dodge, 1996). Goal orientations or tendencies in the person's latent mental structure will also influence the interaction when an individual meets a situation (Crick & Dodge, 1996; Gifford-Smith & Rabiner, 2004). Examples of this may be defence motives in reactive aggressiveness, or gaining social power in proactive aggressiveness.

We now return to the first stage in the model of social information processing which we consider to be a relevant framework for investigating perceptual orientation. According to Dodge and Rabiner (2004), the social information process model includes selective attention to social clues. In an early version of the social information process model Crick and Dodge (1994) specified "attention and focus" as one element in the encoding process. "During Steps 1 and 2, encoding and interpretation of social cues, it is hypothesized that children selectively attend to particular situational and internal cues, encode those cues, and then interpret them." (Crick & Dodge, 1994, p. 76). Dodge, Lochman, Harnish, Bates, and Pettit (1997) found that reactively aggressive children tend to pay selective attention to hostile cues. Generally, however, the questions of interpretation and attribution have been more thoroughly investigated (Crick & Dodge, 1996) than questions about the initial selection of cues. According to the model, selection can be applied to both external and internal cues. Other elements that might influence the selection are motives, memories, past experiences, social schemas etc. (Crick & Dodge, 1994; Dodge & Rabiner, 2004).

It is within this conceptual framework that we investigate perceptual orientation towards signs of weakness in teachers that are new to their class. By perceptual orientation we here mean a person's assumption of what cues of information he or she would pay attention to in a given situation.

1.2. Position of the teacher and weakness in teachers

The teacher is the formal leader of the classroom. To fulfil the role and become a successful teacher, she or he has to possess authority (Hansen, 2006; Waller, 1932). This comes by earning and sustaining trust (Hansen, 2006), and it implies a considerable formal influence over the pupils. Authoritative leadership, combining caring and control, is by many scholars prescribed as the most effective strategy for classroom management (Bear, 1998;

Ertesvåg, 2011; Roland, 2007). We must assume that pupils know that the teacher is legally in charge in the classroom but also that teachers differ a lot in personal authority. How pupils perceive authority in teachers is therefore essential.

The literature describes a teacher's authority as significant for a positive learning climate, positive academic outcomes and pro-social pupil behaviour (Eresvåg & Vaaland, 2007; Pace & Hemmings, 2006; Roland & Galloway, 2002). Factors that may threaten teachers' authority are also potential risk factors for the pupils' learning and general development in school (1994/1994; Waller, 1932). Examples of situations that might undermine the teacher's position could be when a teacher is humiliated, mocked, made to look ridiculous, made to appear powerless, victimized, etc. If the pupils catch signs that such situations can easily be achieved, they may interpret it as an opportunity to attain an alternative power base as a result of the teacher's decreased potential to lead.

Weakness in teachers, then, must be conceptualized within this context, and in general this means signs in the teacher that pupils interpret as opposite to signs of authority. The main question is whether reactive or proactive aggressiveness is correlated with orientation towards such signs in a new teacher. By new teacher we here mean a teacher that is new to the class, not a newly qualified teacher. All teachers periodically start teaching new classes, which means that these kinds of first meetings between pupils and teachers regularly occur during a teacher's career.

1.3. First impression and the start-up period in class

The first meeting between a new teacher and a class is an especially potent opportunity (Kelley, 1950; Vaaland, 2011). Generally the research on first impressions claims that opinions and attitudes developed as first impressions tend to influence the person's future perception and behaviour even when they subsequently get new information that should correct the first understanding (Kelley, 1950; Nisbett & Ross, 1980; Tetlock, 1983; Widmeyer & Loy, 1988). The individual goes through processes of information gathering and organizes this information into meaningful structures, which influence perception in the sense that one neglects information that challenges the pattern of interpretation and puts more weight on those things that support the initial opinion/understanding (Hamilton, Katz, & Leirer, 1980). First impressions matter and the pupils' initial impressions of the teacher and social events in the classroom influence how they interpret and respond to later information (Kelley, 1950; Nisbett & Ross, 1980; Widmeyer & Loy, 1988). Therefore, it is important that conditions which influence pupils' first impressions of a new teacher are considered when such meetings are planned and carried out. Perceptual orientation in pupils might be one such condition. Another important aspect to consider is the intensive social dynamics in the start-up period with new classes; development of relationships, social expectations, establishment of social norms, culture, etc. (Roland, 2003, 2007; Vaaland, 2011). The process through which school classes develop as social systems is sensitive to the expectations the pupils get of their formal leader and his/her potential to gain and maintain legitimacy.

1.4. Teachers new to the class in the eyes of proactively aggressive pupils

Discipline problems, in terms of pupil disobedience to teacher authority, are related to aggressiveness in pupils, both reactive and proactive aggressiveness (Vaaland et al., 2011). In proactive aggressiveness, discipline problems can be regarded as pupils' using the teacher as a tool when striving for social power or status. By devaluing the teacher's authority, the pupil may experience

increased social status. In a struggle for social power, information about the weaknesses of others might be important. Detection of weakness in others obviously demands a certain level of cognitive capacity. Sutton, Smith, and Swettenham (1999) describe bullies as more skilled in finding vulnerabilities in others, which makes it possible to gain power or dominance over them. Sutton and colleagues base their conclusions on categorizing according to roles in bullying, and they do not investigate aggressiveness directly. But because bullying is strongly related to proactive aggressiveness (Roland & Idsoe, 2001; Sutton et al., 1999), it may be reasonable to suppose that a group of bullies will also be characterized by high levels of proactive aggressiveness. However, skills are not the same as a selective interest in finding weakness in others. For the purpose of gaining social power, information about weakness in teachers should be valuable strategic information in the pupil's evaluation of their opportunity to reach goals by aggressive means.

Power gained by dominance or by humiliating others is a profit obtained by instrumental aggression and is typical for proactive aggressiveness (Roland & Idsoe, 2001). In what McClelland (1970) called personalized power, the opportunity for success is influenced by the other person's strengths and weaknesses. It is reasonable to suggest, therefore, that selective attention to signs of weakness in new teachers may be related to proactive aggressiveness in pupils.

1.5. Teachers new to the class in the eyes of reactively aggressive pupils

Reactive aggressiveness is also related to problem behaviour in school (Vaaland et al., 2011). Even if the enactment of behaviour turns out similarly, the mechanisms from detection of social cues to decisions about behaviour and evaluation of behavioural outcomes are different in proactive and reactive aggressiveness.

On the basis of the literature, it is not obvious whether reactive aggressiveness would pre-dispose a pupil to be interested in signs of weakness in a teacher whom they meet for the first time. One could suggest that a defensive motive would make the pupil sensitive to information about possible threats to his or her dignity etc. But such threats can come from other pupils as well as from the teacher. So information about the teacher's ability to protect pupils may be just as relevant as signs of weakness. Literature gives no clear basis for the formulation of a hypothesis and we will explore the question of a relation between reactive aggressiveness and perceptual orientation towards weakness in teachers.

1.6. Gender

It is a usual finding that the level of aggression is higher in boys than girls (Côté & Archer, 2005; Hawley, 2007; Vaillancourt, 2005). A review of research on troublesome classroom behaviour supports this. Even if types and prevalence of such behaviour differ to some degree between nations, boys are consistently described as the most disruptive (Beaman et al., 2007). Some studies also reveal that gender moderates the structural relations between aggressiveness and categories of behavioural problems (Anderson & Bushman, 2002; Owens & MacMullin, 1995; Vaaland et al., 2011). On this basis, it seems relevant to explore gender as a possible moderator in this investigation.

2. Research questions

The aim of this study was to investigate the relations between aggressiveness in pupils and perceptual orientation towards signs of weakness in teachers who are new to the class. On the basis of the theoretical discussion, we approached the relation between

reactive aggressiveness and perceptual orientation as an open exploration, whereas we had a hypothesis that proactive aggressiveness would be positively related to perceptual orientation towards weakness in teachers. We also explored whether gender moderated the relationship between aggressiveness and the perceptual orientation studied.

3. Method

3.1. Sample and procedure

Self-reported data were collected from 755 pupils in grade 10 (approximately 15–16 years old) in 8 Norwegian secondary schools. The sample comprised 401 boys and 354 girls, and the response rate for the pupils in the classes taking part was 90.5%. The sample of schools was taken from "XXX [details removed for peer review] study" conducted regularly by the [details removed for peer review] from 1995 until 2008. This is a representative sample of Norwegian schools according to the Norwegian Central Bureau of Statistics' standards (Statistics Norway, 1994). It became necessary to supplement the sample in the 2008-survey because some of the original schools did not manage or want to participate. New schools were invited by direct contact. These schools were from all over the country but were not chosen with reference to community classification index. The schools could chose to carry out the survey in the spring, or in the autumn about two months after the new school year started. The sample for our study is 8 secondary schools that conducted the survey in October 2008.

Consent was obtained from the local school authorities and the school board. Parents received written information about the project and could respond if they did not want their child to participate. The investigation was performed in accordance with common ethical standards as it was approved by the Norwegian Social Science Data Service in accordance with The National Committee for Research Ethics in the Social Sciences and Humanities.

The respondents completed the questionnaire during a school lesson administered by a teacher. The students filled in the forms electronically. Information to the pupils made it clear that participation was voluntary and that all information given in the survey was confidential. To avoid pupils' influencing each others' responses, to the extent possible all students at each school completed the questionnaire at the same time. This procedure was chosen in an attempt to ensure reliability (Borg & Gall, 1989; Brown, 1970).

3.2. Instruments

One instrument measured the dependent variable: pupil's perceptual orientation towards weakness in a teacher that is new to him or her (PO-weak). Two instruments measured the independent variables: Proactive and Reactive aggressiveness. Other scales described are utilized only for validation of the core instruments. These are: Perceptual orientation towards positive teacher qualities (PO-quality), original scales of Reactive and Proactive aggressiveness, Bullying others and Being bullied.

3.2.1. Perceptual orientation towards weakness in a teacher new to the pupil

Whereas perceptual orientation is a tendency in the pupil, the object of perception that the pupils are requested to have in mind when answering is teachers new to the class, which implies that the pupil has not yet met the teacher. Perceptual orientation towards weakness in a teacher new to the class was estimated using a scale developed by the authors for this study. The scale is based on the theoretical framework of the social information processing model described by Crick and Dodge (1994, 1996) as outlined in Section 1.1. The questionnaire included ten items about what pupils look for when they get a teacher that is new to them. Pupils were asked to respond to ten statements introduced by the following question: What would be your focus of interest if/when you get a new teacher? The statements were: "Whether the teacher is friendly," "Whether the teacher knows the subject well," "Whether the teacher is good at teaching," "Whether the teacher is nice," "Whether the teacher is polite," "Whether it is possible to make fun of the teacher," "Whether it is possible to make the teacher nervous," "Whether it is possible to make the teacher uncomfortable," "Whether it is possible to joke around with the teacher," "Whether it is possible to bully the teacher". The subjects responded to the statements into four ordinal categories. Alternatives were "YES," "yes," "no" and "NO," implying "*Agree completely*," "*Agree*," "*Disagree*" and "*Totally disagree*". All items were scored 3, 2, 1 and 0 respectively.

The items were expected to form two factors, negatively correlated to each other. One factor was supposed to measure PO-weak. The other factor, related to signs of positive teacher qualities, was included in the analysis as a way of testing the factor structure by discrimination between the two. Confirmatory factor analysis was applied to investigate construct validity. Results are presented in Section 4.1.1.

3.2.2. Aggressiveness

Reactive and proactive aggressiveness were measured using modified versions of scales developed by Roland and Idsoe (2001). The procedure used to ensure essential consistency between original and modified scales included five steps. First, inspection of the items in the original and modified scales should show that they are affirmative and consistent to the theoretical concepts measured. Second, a confirmatory factor analysis was run to test factor structure. Internal consistency of the modified scales was then tested by Cronbach's alpha, and inter-scale correlation was inspected. Finally, we investigated and compared the relationships between aggressiveness and external references to which they are expected to relate. Being bullied and bullying others (Roland & Idsoe, 2001) were used as dependent variables. Arguments for the choice of reference variables were, on the one hand, that relationships between aggressiveness and bullying are well documented in the research literature and, on the other hand, that the concepts regarding bullying are not part of the research question of this study. The rationale for the modifications was to standardize the structure of the items so each of the three components in reactive aggressiveness was captured and worded in the same order. Each of the seven statements in the modified scale assessing reactive aggressiveness contains (A) a *situation* that one is exposed to (passive), (B) an *emotion,* anger, triggered by the exposure, and (C) an *aggressive reaction*. The respondent answers how likely they are to have the combination of emotion and reaction when the event referred to occurs. The original scale (Roland & Idsoe, 2001) did not systematically include the A–B–C components in each item, but mostly had the A and B components explicitly formulated.

The five items measuring proactive aggressiveness in the modified scale are formulated with (A) an *action* (i.e. a situation where the respondent is the active part) and (B) an *emotion; power*, achieved by the action. The answers give probability of the respondent experiencing that emotion as a result of the action in question. The A–B components were not that systematically implemented in the original items (Roland & Idsoe, 2001).

Response alternatives were identical to the original scales: "NO", "no", "yes" and "YES", implying "*Totally disagree*", "*Disagree*", "*Agree*" and "*Agree completely*". All items were scored 0, 1, 2, and 3, respectively.

3.3. Data analyses

Analyses started with models aimed to evaluate each variable statistically; measurement models. We continued with structural models used to investigate relationships between variables. A short presentation is given of the fit measures used.

Cronbach's alphas (Cronbach, 1951) for the measured scales were estimated using SPSS (Norusis, 2007). Conventional statistics as reported in Table 1 were also estimated in SPSS. Structural equation models with latent variables were chosen to examine relationships between observed indicators as reflections of relationships among latent variables. By this, the validity of latent variables was evaluated in measurement models. Subsequently, structures of relationships between latent variables were analyzed in structural models.

The robust maximum likelihood procedure, as implemented in Mplus, was used to fit structural equation models to the data (Muthén & Muthén, 1998–2010). The MLM-procedure is recommended when data is ordinal level (Muthén & Muthén, 1998–2010).

First the measurement models were estimated and evaluated separately from the structural models as suggested by Jöreskog (1993). This procedure made it possible to deal with challenges due to factorial problems before analyzing structural relations.

We used multi-group procedure to investigate measurement invariance across gender, and to see whether gender moderates structural parameters (Jöreskog & Sörbom, 2006).

Assessment of model fit shows the extent to which the hypothesized model is consistent with the data. To evaluate goodness of fit we followed Browne and Cudeck's (1993) recommendations. The Root mean Square Error of Approximation (RMSEA) measures discrepancy per degree of freedom (and is relatively insensitive to sample size). A value of about .05 or less is interpreted as close fit, and a value about .08 or less is interpreted as fair fit. The RMSEA is supported by a 90% confidence interval (90% CI). Comparative-Fit-Index (CFI) and Tucker–Lewis Index (TLI) are goodness of fit measures with values between 0 and 1. Values close to 1 are indications of good fit.

Chi-square statistics test that the model fits exactly in the population, but when sample sizes increase even models that hold approximately will be rejected (Jöreskog, 1993). To avoid inadequate assessment of model fit, we will use the indices mentioned by Browne and Cudeck (1993). Chi-square statistics are reported but not discussed. However, when comparing alternative nested models we use chi-square tests to provide information. The Satorra–Bentler scaled chi-square statistics are not compatible with conventional chi-square testing and therefore demand an adjusted test following calculations suggested by Satorra and Bentler (1999). A description of the calculations used is available on http://www.statmodel.com/chidiff.html (Muthén, 2007).

4. Results

The aim of the study was to investigate whether pupils' PO-weak is differently related to two aspects of pupil aggressiveness. First we will present measurement models and analyses used to test the validity of the measures, followed by descriptive statistics on the variables before finally consider the analysis of the structural model on the main research question.

4.1. Measurement models and validity of scales

4.1.1. Perceptual orientation

In an attempt to define a scale which measures pupils' PO-weak, ten items about signs to look for in teachers new to the class, were investigated. Items for teacher characteristics other than weakness were used to test discrimination between factors. Multiple-group confirmatory factor analysis was applied with boys and girls as the two groups. $\chi^2(84) = 387.400$ ($p = .000$); CFI = .91; TLI = .91; RMSEA = .100 90% CI (.090, .110). According to modification index model fit could be approved by allowing residuals of two items to correlate, namely "Whether the teacher is good at teaching" and "Whether the teacher knows the subject well". On inspection of all the items, it seems reasonable that the two statements about teacher competence have something in common that is not shared by the other indicators of the construct. Correlation between the two residuals was freed up, $r = .75$ ($p < .001$). The modified model showed fair fit, $\chi^2(82) = 210.070$ ($p = .000$); CFI = .96; TLI = .96; RMSEA = .065 90% CI (.055, .076). Factor loadings are presented in Table 1.

Standardized factor loadings were all above .64, and all estimated parameters were significant at 1% level. Model fit supports a two-factor solution with 5 items reflecting perception of positive teacher qualities and weakness respectively. Internal consistency proved good. Chronbach's alpha for the scales measuring PO-quality are .89 and .85 for boys and girls respectively, and for PO-weak .95 and .94 for boys and girls respectively. The two factors

Table 1
Factor analysis with latent variables perceptual orientation towards positive teacher qualities and weakness in a teacher new to the class. Factor loadings in unstandardized and completely standardized metric.

	Perceptual orientation towards positive qualities in a teacher new to the class			Perceptual orientation towards weakness in a teacher new to the class		
	Unsd.	Std. boys	Std. girls	Unstd.	Std. boys	Std. girls
Whether the teacher is friendly	1.00	.74	.68			
Whether the teacher knows the subject well	.96**	.67	.64			
Whether the teacher is good at teaching	.93**	.69	.71			
Whether the teacher is nice	1.18**	.94	.89			
Whether the teacher is polite	1.12**	.72	.66			
Whether it is possible to make fun of the teacher				1.000	.83	.80
Whether it is possible to make the teacher nervous				1.07**	.96	.94
Whether it is possible to make the teacher uncomfortable				1.07**	.95	.92
Whether it is possible to joke around with the teacher				.98**	.90	.88
Whether it is possible to bully the teacher				.85**	.85	.84

$\chi^2(82) = 210.070$ ($p = .000$); CFI = .96; TLI = .96; RMSEA = .065 90% CI (.055, .076); SRMR = .074.
Note. The first path from each factor is fixed to 1. Mplus does not provide us with completely standardized coefficients for multiple-group solutions. We therefore report the coefficients in standardized metric separately for boys and girls. These will vary a bit though the model is constrained equal across gender. The reason for variation is that Mplus use group specific variance when coefficients are standardized.
**$p < .01$.

correlated as expected, $r = -.26$ ($p = .000$) for boys and $-.31$ for girls ($p = .000$).

An alternative one-factor solution was tested, but the model did not converge and no indicators of model fit emerged, indicating that this alternative model is not appropriate to the data. Rejection of a one-factor variable gives additional support to the validity of the chosen model with two factors.

4.1.2. Aggressiveness

Inspection of the items in the original and modified scales showed that they are affirmative and consistent to the theoretical concepts measured. No problems were revealed in either the reactive or the proactive aggressiveness scales. Confirmatory factor analysis was applied to test the validity of the scores of the modified instruments measuring reactive and proactive aggressiveness. Analyses revealed no differences in factor structure compared with the original scales. All the factor loadings were between .76 and .95 and significant at 1% level. Factor correlation based on modified scales was .56 and .50 ($p < .001$) for boys and girls respectively. In studies based on the original scales, correlations range between .48 and .74 (Fandrem, Strohmeier, & Roland, 2009; Roland & Idsoe, 2001; Størksen, Idsoe & Roland, 2011). Comparison of factor correlations between original and modified versions of the scales supports expectations of consistency between original and modified concepts. Internal consistency proved satisfactory. Cronbach's alpha was .92 (boys) and .90 (girls) for the scale measuring reactive aggressiveness, and .95 (boys and girls) for the scale measuring proactive aggressiveness.

We used measures of bullying others and being bullied to investigate structural relations between aggressiveness and previously documented external reference variables. A confirmatory factor analysis with the two variables, bullying others and being bullied, was first applied to ensure validity of the established scales in our sample. The model provided fair fit to the data: $\chi^2(50) = 151.801$ ($p = .000$); CFI = .91; TLI = .90; RMSEA = .07 90% CI (.061, .088). Also the structural model provided fair fit to the data, $\chi^2(360) = 808.917$ ($p = .000$); CFI = .93; TLI = .92; RMSEA = .06 90% CI(.054, .065), and the modified scales relate to external concepts as expected. In addition to comparing the structure of the relationship, the strength of the relationships was compared to previous studies. We looked at the results in relation to corresponding analyses with original scales in the studies by "Roland and Idsoe (2001)" and "Fandrem et al. (2009)". Some variation was detected, but we argue that relations between aggressiveness and bullying showed sufficient consistency across the studies, which supports the validity of the modified scales of reactive and proactive aggressiveness. However, we recommend keeping the instruments under further observation and evaluation in future studies. A table presenting structural parameters of relations between the two types of aggressiveness and bullying others/being bullied from the three studies are presented in Appendix.

4.2. Descriptive statistics

Descriptive statistics for the dependent and independent variables are presented in Table 2 for boys and girls separately.

Skewness and kurtosis are within the interval recommended by Curran, West, and Finch (1996). Boys report significantly higher mean values than girls on both reactive and proactive aggressiveness, as well as on PO-weak. The gender difference in levels of aggressiveness is in accordance with expectations presented in Section 1.6.

4.3. Structural model

We applied the multiple-group framework for the structural models (Jöreskog, 1993). By modelling girls and boys as distinct groups when structural relationships between aggressiveness and PO-weak were estimated, we were able to compare model fit in a constrained versus an unconstrained model. Factor loadings were constrained equal across groups in the structural analysis. Fit indices for a model, where structural parameters were also constrained to be equal across gender, yielded fair fit to the data, $\chi^2(262) = 597.698$ ($p = .000$); CFI = .95; TLI = .95; RMSEA = .060 90% CI (.054, .066). An alternative model with no restrictions for variance in structural parameters across groups also had fair fit to the data: $\chi^2(260) = 597.219$, $p = .000$; CFI = .95; TLI. 95; RMSEA = .060 90% CI (.054, .067). The model with free parameters did not improve goodness of fit ($\Delta\chi^2(2) = .35$), so we concluded that gender did not moderate the effects. Table 3 presents the standardized parameters for boys and girls respectively.

According to the results, reactive aggressiveness is weakly but significantly related to a tendency among boys and girls to look for signs of weakness in teachers when they meet for the first time. Though significant, beta values are small, .14 and .18 for boys and girls respectively. The substantial and significant relationship between proactive aggressiveness and perceptual orientation of weakness in teachers reveals a tendency for boys (.39) and girls (.40) who score highly on proactive aggressiveness to be prone to signs of vulnerabilities when they get a teacher that is new to them.

5. Discussion

The aim of this article was to investigate possible relationships between reactive and proactive aggressiveness in pupils and the extent to which pupils will seek information about weakness in a teacher who is new to them. Results show connections between aggressiveness and perceptual orientation towards weakness in teachers. The main message from the study is obviously the strong and significant relation between proactive aggressiveness and PO-weak.

In addition to increasing knowledge about the two types of aggressiveness related to the psychological correlate called perceptual orientation, an additional purpose was to reflect on practical implications of this knowledge.

After discussing some methodological aspects, we will return to the two more substantial issues.

Table 2
Descriptive statistics on perceptual orientation towards weakness (PO-weak), Reactive aggressiveness (Reagg) and proactive aggressiveness (Proagg) for boys and girls, mean, standard deviation, number of observations, result of *t*-test with corresponding *p*-value.

	Boys					Girls					*t*
	M	SD	N	SK	KT	M	SD	N	SK	KT	
PO-weak	.87	.97	398	.94	−.23	.49	.70	350	1.62	2.47	−6.06**
Reagg	1.45	.76	399	.18	−.33	1.09	.70	352	.26	−.32	6.57**
Proagg	.77	.88	398	1.00	.15	.37	.63	354	1.96	3.86	7.02**

Note. M = mean, SD = standard deviation, N = number of observations, SK = skewness, KT = kurtosis, *t* = *t*-value.
**$p < .01$.

Table 3
Structural model for reactive aggressiveness (Reagg), proactive aggressiveness (Proagg) and perceptual orientation towards weakness in a teacher new to the class (PO-weak).

	PO-weak	
	Boys	Girls
REAGG	.14**	.18**
PROAGG	.39**	.40**

$\chi^2(262) = 597.698$, $p = .000$; CFI = .95; TLI = .95; RMSEA = .060 90% CI (.054, .066); SRMR = .048.

Note. Remember that Mplus does not provide us with completely standardized coefficients, ref. comments to Table 1, Section 4.1.1.

** $p < .00$.

5.1. Methodological considerations

The sample is randomized, although we cannot be assured that it is representative at a national level. The topics of interest are, however, relationships between latent variables, and non exact prevalences of aggressiveness and perceptual orientation. We consider the randomized sample satisfying for reliable assessments of the connections between the variables studied. However, the results of the study should be interpreted carefully until replications with even more sophisticated samples are available.

Data are based on self-reports and can have been exposed to reporting bias. Self-reports are well established in the study of aggressiveness (Roland & Idsoe, 2001), as it is reasonable to use the pupils themselves as informants when motives or intentions are part of the question.

Regarding perceptual orientation, we asked pupils to evaluate statements about interest in signs of weakness in teachers who are new to them. In other words we asked for their assumptions about what they will look for in a generally familiar, but still hypothetical future situation. We consider their answers to be their thoughts about their own future thoughts, assessed by self-report. It is not an issue for this study to investigate how well the scale, PO-weak, actually measures the pupil's real perception of a teacher they actually meet for the first time.

Various indicators of reliability and validity concerning the modified aggressiveness scales support the modification. Regarding factor correlation between reactive and proactive aggressiveness, it should be mentioned that the correlation was lower than most often found. According to Vitaro and Brendgen (2005) continuous reactive and proactive aggression scores correlate on average .70 (+/−.15) in variable-centred studies. Our measured correlation is slightly outside that interval. However, Card and Little (2007) argue that correlation between reactive and proactive aggression decreases as the measurements of the concepts have been theoretically cultivated and thereby have become more distinct. The modification of the scales in our study has been developed on a theoretical basis in an attempt to clean up the measures and we suggest that the relatively low correlation may be considered an improvement of the measurements as proposed by Card and Little (2007).

The scales used to measure anticipated perception of a teacher new to the pupil and aggressiveness satisfies the demands according to validity and reliability that have been investigated. Nevertheless, further studies of construct validity would be welcomed. We suggest that our study is viewed as preliminary and exploratory according to the concepts and measures included. However, we consider the preliminary results to be important and unambiguous enough to recommend further studies. These should take into consideration a broadening of contextual information such as classroom climate, socioeconomic background, current teachers at the relevant schools (age, gender, subjects, experience, etc.) and the pupils' previous experiences with teachers.

The cross-sectional design in our study has limitations that make it insufficient for investigations of causality. Theoretically, there is not any obvious direction for cause and effect between aggressiveness and perceptual orientation. Researchers in the field point to investigations of social and psychological correlates to reactive and proactive aggression as means to reveal further knowledge on the two forms of aggression and possible distinctions between them (Card & Little, 2007; Dodge, 1991). In exploration of such correlates, the cross-sectional design should be appropriate.

Nevertheless, it should be noted that our research question reflects a narrow insight into an area that includes a complexity of phenomena and processes, and in-depth understanding would demand complex research approaches. As expected, our explorative approach revealed the need for further knowledge about pupils' aggressiveness and perceptual orientation towards teachers.

5.2. Aggressiveness and perceptual orientation

Gifford-Smith and Rabiner (2004) summarize research on the social information processing model in relation to reactive and proactive aggression. They suggest that processing biases in reactively aggressive children will mainly occur in the early stages of information processing (selective attention to hostile cues, hostile attribution biases) and the proactively aggressive will be more likely to demonstrate biases in the latter stages (goal setting, response evaluation). Difference in motives gives the rationale for the distinction; reactive aggression is motivated by perceived threat while proactive aggression is motivated by the desire to obtain specific outcomes. As far as we are concerned, reactive and proactive aggressiveness related to perceptual orientation has not been empirically investigated or theoretically described. Connections between motives and perception have been established (DeWall, Maner, & Rouby, 2009; Maner, Gailliot, Rouby, & Miller, 2007). The same is true for possible relationships between aggressiveness and motives (Card & Little, 2007; Little, Jones, Henrich, & Hawley, 2003). In reactive aggressiveness a motive could be defence (Dodge, 1980; Dodge & Coie, 1987), and in proactive aggressiveness power is thoroughly described as motivation for the instrumental aggression (Dodge, 1991; Roland & Idsoe, 2001).

The social information processing model (Crick & Dodge, 1994, 1996; Gifford-Smith & Rabiner, 2004) is useful in describing aggressive behaviour as an outcome of an interaction between the context, the classroom, and the individual. The result of our study suggests an extended understanding of aggressive behaviour by modelling perceptual orientation as a step in front of the elements in the social information process described by Crick and Dodge (1994, 1996). Perceptual orientation as a tendency to prefer some types of social cues to others is then linked to motivational traits that are part of the individual's latent mental structures, e.g. aggressiveness. This implies that the interaction between a pupil and the context, resulting in a behavioural outcome, is influenced by the pupil's aggressiveness which leads to a certain kind of perceptual orientation. This theoretical chain should be considered preliminary. Some links in the chain are still weak and there may be some missing links. However, the results presented in this article support the possible existence of such a chain.

Reactive aggression involves emotional arousal; anger (Vitaro & Brendgen, 2005), and emotional arousal can affect perception by leading to selection of perceptual stimuli (Lang, 1995). This perceptual bias, caused by emotions, is impulsive rather than

planned. When we ask for pupils' responses to questions such as what they will look for when they get a new teacher, the question is directed at an intended selection of cues. We do not expect that arousal-based bias will completely guide their answers when they are not aroused. It seems reasonable to suppose that the answers expose planned or intended selection of perception based on what information they generally prefer paying attention to.

According to an understanding of reactive aggression as defensive actions, one might expect that those pupils who easily feel frustrated, or often feel threatened in the school context, would be aware of signs which tell them whether the teacher is likely to be good at protecting them. A teacher with high competence in teaching and classroom management would be a resource for those who need defence (Roland, 2007). The informants in our study are in their last year of compulsory school and obviously have some experience of the differences between teachers. On the basis of the rationale outlined above, reactive aggressiveness could lead to sensitivity to possible threats, such as a teacher who is weak and not able to be protective. If the teacher (in the pupil's perception) is weak, the pupil needs to look elsewhere for help to avoid threats and gain defence.

As already mentioned, we suggest that the results regarding reactive aggressiveness and the weak but significant relation to PO-weak should be interpreted as exploratory and preliminary.

Proactive aggression motivated by social power can be used as an instrument for gaining advantages in horizontal and/or vertical relationships. Pupil-to-pupil relationships are horizontal and are not investigated in our study. Teacher-to-pupil relationships are vertical and should be understood in the light of formal roles including different levels of authority. The formal position of the teacher as the authority makes power a potential reward for proactive aggressiveness. Taking power in a relationship with a person who has formal authority might be an extra challenge and therefore give extra satisfaction.

Theoretical expectations associate proactive aggressiveness with interest in signs of weakness in others. Our results support this assumption. We consider the strength and significance of the relationship between proactive aggressiveness and PO-weak to be an important finding, and its potential threat to teacher authority makes it alarming. Yet, this is, as far as we know, the only study on the topic, and the results should be interpreted with care until replications exist.

Despite the methodological limitations that we have pointed to, we conclude that the results from our study contribute to theoretical development in the field of aggression, perception and social dynamics of first meetings. Building on theory that explains the relationships between aggression and a person's interpretation of social stimuli (Crick & Dodge, 1994; Dodge & Coie, 1987), our study provides a deeper understanding by revealing that aggressiveness is also linked to selective interest in perceptual stimuli regarding weakness in the relation studied. Theory describes several situational and personal characteristics that influence selective perception (Crick & Dodge, 1994; Dodge & Rabiner, 2004; Leander & Chartrand, 2011; Rees & Frith, 1998; Ross, Greene, & House, 1977; Snyder, Tanke, & Berscheid, 1977), and our study adds to this knowledge by describing how two profiles of aggressiveness connect to pupils' orientation to show selective interest in signs of weakness in teachers. As far as we are concerned, these links have not previously been described.

Both in and outside of school, there is a general agreement that first meetings between people are important (Evertson, Emmer, & Worsham, 2003; Kelley, 1950; Marzano, 2003; Roland, 2007; Vaaland, 2011; Widmeyer & Loy, 1988). The results from our study, contribute to explanation of why the first meetings between teachers and pupils are so important, especially when teachers are meeting pupils with high levels of proactive aggressiveness.

5.3. Gender

The mean values of reactive and proactive aggressiveness were significantly higher for boys than girls, which was consistent with our expectations. Our sample was a convenience sample, not a totally randomized one and our study did not question prevalence. Any consistency with other findings from research on aggressiveness is worth noting when working with modified measurements of aggressiveness. Gender did not moderate structural relations between aggressiveness and PO-weak. According to the theory, there was no reason to hypothesize gender as a moderator, and our results support the conclusion that interest in weakness is generally connected to aggressiveness, mainly proactive aggressiveness, regardless of gender.

5.4. Practical implications

Aggressive behaviour in classrooms is a major challenge to teachers, and one of the most frequent reasons for teachers leaving their profession (Evertson & Weinstein, 2006). Such pupil behaviour interferes with teacher authority (Toby, 1993/1994; Vaaland, 2011) and is also a threat to the process of pupils' learning in the class (Evertson & Weinstein, 2006; Infantino & Little, 2005). Consequently, reducing the risk for pupils' aggression towards teachers is important.

The start-up period is especially important for establishing leadership and authority (Evertson et al., 2003; Marzano, 2003). When teachers prepare to meet new classes, they should be aware of both reactive and proactive aggressiveness in the pupils. However, they should be most on guard against proactively aggressive pupils who systematically seem to search for opportunities to disempower the teacher. In contrast to the reactively aggressive pupils, the proactively aggressive ones tend to be popular among peers (Dodge, 1991; Vitaro & Brendgen, 2005), and we can therefore assume that they have social influence in the class. This implies that their attitudes towards teachers can develop into collective social norms (Galloway & Roland, 2004). Thus, the result showing that these proactively aggressive pupils are prone to signs of weakness when meeting a teacher new to them, should be important knowledge to every teacher preparing to teach a new class. The relationship between proactive aggressiveness and PO-weak appeared to be equal for boys and girls. However, the mean level of proactive aggressiveness was substantially higher for boys than for girls. Since proactive aggressiveness is strongly connected to disruptive behaviour towards the teacher (Vaaland et al., 2011), teachers meeting new classes should be particularly conscious about boys in this respect.

In meeting a new class, one obvious necessity is to be well-prepared academically and practically (Evertson, 1995; Evertson et al., 2003; Marzano, 2003), which would probably aid in providing an appearance of security. However, in addition, student teachers and even established teachers could profit from detailed training in how to behave and communicate in first meetings with classes, so as not to expose weakness.

We can otherwise assume that a bad reputation would cause additional problems to a teacher, while a good reputation would afford some protection when first meeting a new group of pupils. This assumption builds on research about how previous information influences perception and interpretation that constitute the first impression of the teacher, which again predicts pupils' further interpretation of and interaction with the teacher (Kelley, 1950).

The results from our study imply that preconditions for teacher authority should also be considered as they may influence teacher vulnerability by encouraging or discouraging respect for teachers.

It is certainly difficult for teachers to appear secure and confident if the curriculum and methods of teaching undergo changes very often, which seems to be a considerable problem in many countries, communities and schools (Galloway & Roland, 2004; Hargreaves, 2001). Reasonable stability, as well as how change is implemented, may thus be an interesting topic related to perceptual orientation towards signs of weakness in teachers.

School-culture, collegial climate for cooperation and support, and school leadership also contribute to how teachers cope with meeting new pupils (Galloway & Roland, 2004; Roland, 1999; Waller, 1932).

Reference authority coming from the reputation of the school is also important (Dalin & Rolft, 1993; Hardy & Clegg, 1996; Lortie, 1975; Martin, 1994), as is the status of teachers and education in the community and the nation (Giddens, 1984; Lortie, 1975).

Any systematic challenge to teachers' ability to fulfil their professional task as classroom leaders merits attention. Results from our study imply that some pupils seem to have an extended appetite for capturing social power at the cost of the teacher and that signs of weakness in a teacher can be used as a tool in a pupil's struggle for power and social position in the group. This section highlights several implications, but it should be pointed out that much work remains to fully elucidate how this knowledge should be spread to and utilized by teachers and school managements.

A question of substantial ethical interest, however, is whether some pupils' orientation towards weakness in a teacher should be countered by recommending that teachers "lift their guard" when meeting a new class. Instead, one could for example consider giving social-cognitive training to proactively aggressive pupils in order to decrease their interest in teachers' weakness. This approach, however, raises a considerable problem because such treatment may have limited influence on behaviour related to proactive aggressiveness (Beelmann, Pfingsten, & Lösel, 1994; Coie, Underwood, & Lochman, 1991). Ethical dilemmas may also increase if awareness related to pupils' PO-weak adversely modifies the teachers' perceptual orientation towards pupils.

5.5. Further research

As already mentioned, PO-weak that has been explored in our study seems to warrant further investigations. As we conclude that aggressiveness counts for substantial variance in PO-weak, other questions arise. To what extent does pupils' perceptual orientation towards teachers develop from first grade until 10th grade, and does it vary according to experiences with good versus not-so-good teachers. Longitudinal designs could be appropriate for investigating such questions, and could also highlight developmental patterns to gain more information on how the connection between aggressiveness and perceptual tendencies develops.

Other designs could provide us with knowledge about pupils' perceptual orientation compared to real perception and interpretation of a teacher. Within an experimental design, information about teachers' gender, age, level of experience, reputation, etc. might be introduced to the pupils previous to or as part of a real-perception-situation. Contextual preconditions for teacher authority are also relevant. Experimental situations could be carried out in an arranged classroom setting or by use of scripted videos.

As teaching is global, the possible influence of local and national cultures on our topic would be an interesting question for further research.

Appendix

Structural models for reactive aggressiveness (Reagg), proactive aggressiveness (Proagg), being bullied and bullying others.

	Bullying others		Being bullied	
	Boys	Girls	Boys	Girls
Reagg (modified scales)	.28**	.00	.14	−.03
Reagg (Roland & Idsoe, 2001)	.08	.03	.06	.14*
Reagg (Fandrem et al., 2009)	.07	.15*		
Proagg (modified scales)	.35**	.45**	.12	.26
ProAgg (Roland & Idsoe, 2001)	.34*	.18	−.03	.03
ProAgg (Fandrem et al., 2009)	.47*	.35*		

$\chi^2(50) = 151.801$ ($p = .000$); CFI = .91; TLI = .90; RMSEA = .07 90% CI (.061, .088).
Note. Reference studies are Roland and Idsoe (2001), and Fandrem et al. (2009). The reference studies included both proactive *affiliation*-related and proactive *power*-related aggressiveness. The results presented here as references are based on the scale measuring proactive *power*-related aggressiveness that is the basis for the modified scale used in our study.
*$p < .01$ **$p < .00$.

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