

Abstract

Reciprocal peer dislike was examined as a predictor of school adjustment and social relationship quality. One hundred and fifty one (69 male and 74 female, $M_{\text{age}} = 9.53$, $SD_{\text{age}} = 1.87$ years) children completed measures of school liking, loneliness, and friendship quality twice over three months. From ratings of the amount of time participants liked to spend with individual classmates, social network analyses were used to determine reciprocal peer dislike. Curvilinear regression analyses revealed that reciprocal peer dislike at Time 1 predicted changes in the children's loneliness and friendship quality assessed as help, security, and closeness over three months. The findings support the conclusion that reciprocal peer dislike predicts aspects of school adjustment and social relationship qualities.

Key words: dislike, peer relationships, school adjustment, social network analysis

Reciprocal peer dislike and psychosocial adjustment in childhood

Children's experiences with their peers are crucial for their psychosocial and school adjustment (Hay, Payne, & Chadwick, 2004; Parker & Asher, 1987). Further, both researchers and practitioners have reported that children who experience positive peer relationships typically engage in lower levels of externalising and internalising behaviours and are more successful in the school environment than those children who experience less positive peer relationships (Klima & Repetti, 2008). Whilst previous research examining children's peer relationships has tended to primarily focus on peer liking, with peer liking used as an indicator of peer acceptance (Hymel, Vaillancourt, McDougall, & Renshaw, 2002), companionship (Buhrmester & Furman, 1987), the peer groups' collective perception of an individual child (Ladd, Birch, & Buhs, 1999; Parker & Asher, 1993), and reciprocal friendships (Parker & Asher, 1993); there is an emerging line of research examining children's experiences of reciprocal peer dislike.

Peer dislike represents negative attitudes towards a target child and has been conceptualised by some as representing a distinct phenomenon from peer liking (Gorman, Schwartz, Nakamoto, & Mayeux, 2011; London, Downey, Bonica, & Paltin, 2007). Peer relationships characterised by reciprocal dislike have been identified as mutual antipathies (Abecassis et al., 2002; Abecassis, 2003). Abecassis (2003) proposed that whilst mutual antipathies are typified by mutual dislike, the nature of the relationships may vary according to the extent to which the dislike is perceived as reciprocal, the intensity of the emotions for those involved in the relationship, and the origins and the developmental trajectory of the relationship. Further, dislike in the context of a specific relationship may vary from aversion to hatred. Therefore, mutual dislike and mutual avoidance may serve as a protective factor for some children in certain circumstances whereas when mutual dislike is sustained and across many peer relationships it may lead to adjustment difficulties (Abecassis et al., 2002).

Consequently, experiencing very high levels of reciprocal peer dislike may negatively affect children's psychosocial adjustment.

There is emerging evidence that: (a) From a young age children can discriminate between those peers that they like and those peers that they dislike and (b) peer dislike may be reciprocal. For example, Erath, Pettit, Dodge, and Bates (2009) reported that between 31 and 47 percent of Kindergarten to third grade children were part of at least one reciprocal peer dislike dyad. Erath et al. identified dyads characterised by reciprocal peer dislike as those dyads where both interaction partners awarded each other the lowest anchor point on a sociometric nomination. However, whilst stability of between 60 and 65 percent has been reported in children's social networks over a year (Kindermann, 2007; Witvlieta, van Lier, Cuijpers & Koot, 2010), the extent to which reciprocal peer dislike remains stable over a shorter time is unclear.

Focusing on the reciprocal aspects of children's peer dislike is appropriate because, compared to unilateral reports of peer dislike, reciprocal peer dislike takes in to consideration that peer relationships are a dyadic process and, as such, reflect the broader social environment that children's relationships occur in (Mikami, Lerner, & Lun, 2010). Whilst reciprocal peer dislike reflects children's experiences at a dyad level, peer rejection reflects children's experiences with the entire peer group (Parker & Gamm, 2003). However, reciprocal peer dislike and peer rejection are mathematically related as both necessitate a child receiving a dislike nomination (Rodkin, Pearl, Farmer, & Van Acker, 2003). Rodkin et al. also argued that mutual peer dislike represent experiences of dyadic peer relationships within the context of the broader peer group and, as such, found evidence that middle-school age children with low levels of peer rejection experienced reciprocal peer dislike. More recently, Card (2010) has clarified the distinction between reciprocal peer dislike and peer rejection further by suggesting that focusing on the dyad level of children's peer relationships,

as in the case of reciprocal dislike, recognises the potentially interdependent nature of the relationship. Conversely, focusing on the group level such as peer rejection ignores the interdependence of dislike but rather examines either a characteristic of the individual child or a perception of the peer group (Card, 2010). Together these studies distinguish between dislike at the dyad level, as in the case of reciprocal peer dislike, and dislike at the group level, as in the case of peer rejection. The present research will examine the distinctiveness of reciprocal peer dislike through examining the association between 9- to 11-year-olds' reciprocal peer dislike and reciprocal peer liking networks.

The consequences of experiencing reciprocal peer dislike during childhood for psychosocial adjustment remain somewhat unclear, especially when compared to the wealth of research examining the consequences of positive peer experiences (e.g., Cillessen & Mayeux, 2007; Klima & Repetti, 2008; Wentzel, 1999). Consequently, the present study examined reciprocal peer dislike in 9- to 11-year-olds as an antecedent of school adjustment (assessed as school liking and loneliness in school) and social relationship quality (assessed as friendship quality) over three months. The age of the sample was selected because as children enter late childhood their peer relationships become increasingly important (Gifford-Smith & Brownell, 2003).

School adjustment has been conceptualised as representing the extent to which children are successful, interested, engaged, and comfortable within the school environment (Ladd, 1996; Perry & Weinstein, 1998), and are able to meet the demands of school (Pianta, Steinberg, & Rollins, 1995; Wentzel, 1999). Therefore, children's loneliness in school and school liking can serve as indicators of their school adjustment (Betts & Rotenberg, 2007; Ladd, 1996). Whilst positive peer status and peer liking have been identified as antecedents of successful school adjustment (e.g., Asher & Paquette, 2003; Ladd & Coleman, 1997; Li, Lerner, & Lerner, 2010; Mouratidis & Sideridis, 2009; Parker & Asher, 1993), the extent to

which reciprocal peer disliking predicts school adjustment remains unclear. Experiencing greater levels of reciprocal peer dislike may influence school adjustment because reciprocal peer dislike could be a source of conflict and a stressor and, as such, may influence other aspects of school (Pope, 2003).

Social relationship quality is another indicator of children's psychosocial adjustment within the social environment (Rudasill, Rimm-Kaufman, Justice, & Pence, 2006). In support of the proposed link between reciprocal peer dislike and social relationship quality, Abecassis et al. (2002) found evidence that children's and adolescents' experiences of mutual peer dislike were associated with a number of social adjustment measures including aggression, social ineffectiveness, social withdrawal and isolation, depression, and lower levels of cooperation. Similarly, in seventh- to ninth-grade children, higher frequencies of mutual peer dislike were associated with higher levels of victimization and lower levels of peer acceptance (Parker & Gamm, 2003). Reciprocal peer dislike during kindergarten was also predictive of higher levels of externalising and internalising behaviours in second grade (Cleary, 2005). More recently, Gorman et al. (2011) reported that 12- to 13-year-olds' peer dislike concurrently predicted lower academic performance and prosociality, and higher overt aggression, relational aggression, and relational victimization. Together, these studies suggest that the experience of peer dislike influences both children's school adjustment and aspects of social relationship quality.

Reports of peer dislike may be influenced by the children's perceptual bias: Some children may over-report negative peer experiences because of a negativity bias. Negativity biases occur when, for an individual, there is a predisposition for negative events or information to take precedence over positive events or information (Shook, Fazio, & Vasey, 2007) which, in turn, facilitates the development of a general negative cognitive style or schema (DuBois & Silverthorn, 2004). Together, the negativity bias and negative cognitive

style result in distorted interpretations of social situations such that negative events are regarded as more impactful which ultimately enhances vulnerability to emotional difficulties (Shook et al., 2007; DuBois & Silverthorn, 2004). However, Baltazar, Shutts, and Kinzler (2012) argued that a negativity bias could be facilitative for young children because it facilitates memory for socially relevant individuals who should be avoided in future interactions because of potential threat or harm. Alternatively, a negativity bias may occur for reports of children's peer dislike because of a form of modesty concerning social status within the social group (Smith, Van Gessel, David-Ferdon, & Kistner, 2013). Smith et al. argued that some children may over-report negative experiences with peers so that they avoid appearing boastful. Therefore, because of a negativity bias, the nature of the relationship between peer dislike, school adjustment, and social relationship quality may not be linear. Specifically, those children with a stronger negativity bias would likely nominate a greater number of peers as disliked which, in turn, would increase the likelihood with which peer dislike would be reciprocated.

One pertinent issue for the present study is how to assess peer dislike. The effects of reciprocal peer dislike for sixth grade children varied according to whether the peer dislike was reciprocated between interaction partners: Children with at least one reciprocal dislike nomination experienced lower levels of psychosocial maladjustment than the other children (Witkow, Bellmore, Nishina, Juvonen, & Graham, 2005). Consequently, Witkow et al. argued that reciprocal peer dislike should be examined in the context of the broader social network of dislike. Further, Mikami et al. (2010) suggested that when investigating peer relationships, it is important to do so at the dyad level and examine the reciprocal influences nested within the broader social network because a child's behaviour does not operate in isolation from their peers. Therefore, the present study used social network analysis to

determine an indicator of children's reciprocal peer dislike as a proportion of the classroom group.

Social network analysis permits exploration in to the potentially complex relationships between individuals within social groups (Wey, Blumstein, Shen, & Jordan, 2008). In the present study, social network analysis was used to examine children's reciprocal peer dislike, derived from class groups. Class-wide peer groups were examined because although children from the age of three tend to form same-gender peer relationships (Maccoby 1988, 1990), these relationships operate in the broader social context of the classroom (Maassen, van Boxtel, & Goossens, 2005). Adopting a social network approach also provides a more comprehensive representation of the classroom dynamic compared to approaches where children have to nominate a limited number of peers (e.g., Murray-Close & Crick, 2006). Consequently, children may experience reciprocal peer dislike with any fellow class member.

The present research examined: (a) the distinctiveness of peer dislike, (b) reciprocal peer dislike as a predictor of school adjustment and social relationship quality, (c) the stability of 9- to 11-year-olds' reciprocal peer dislike, and (d) gender differences in reciprocal peer dislike. It was expected that the nature of the relationship between reciprocal peer dislike, school adjustment, and social relationship quality would be curvilinear such that very low and very high levels of reciprocal peer dislike would predict those measures differently than based on a linear relationship. Whilst some studies report that boys and girls tend to report experiencing mutual dislike to a similar magnitude (e.g., Abecassis et al., 2002; Parker & Gamm, 2003), others have reported that girls experience higher levels of peer dislike (e.g., Carlson, Tamm, & Gaub, 1997); consequently, the present study examined gender differences in peer dislike, although no direct predictions concerning the nature of these differences were made.

Method

Participants

One hundred and 98 (89 male, 98 female, and 11 gender not reported), 9- to 11-year-old children ($M = 9.95$ years, $SD = .63$) were recruited from 8 classrooms across 5 primary schools in the UK. Four schools had a catchment area below the UK national average for professional employment and above the UK national average for unemployment (Office of National Statistics, 2001) and one school had a catchment area above the UK national average for professional employment and below the UK average for unemployment. The overall response rate at Time 1 was 91.20% (range 69.56% to 92.59%) and the sample was predominately white (85%).

The final data set comprised 151 (69 male and 74 female) children and was reduced because of missing data as some children were absent at Time 2 whereas others did not complete all of the questionnaires. There was no significant difference between those children who remained in the sample and those that withdraw from the study for any of the outcome measures at Time 1 ($p > .05$).

Measures

Peer dislike The children's peer dislike was assessed using a rating scale approach. Following the procedure outlined by Kingery and Erdley (2007), the participants were asked to report "how much time you like to spend with each person" in their class (children without parental consent were excluded from the list). The amount of time served as a proxy for liking. Participants responded using a 5-point scale ranging from 1 (*I don't like to*) to 5 (*I like to a lot*). Similar to Erath et al. (2009), the ratings of 1 that the children awarded to, and received from, their classmates were used to denote the children's peer dislike. The ratings of 5 that the children awarded to, and received from, their classmates were used in initial analysis to establish the distinctiveness of peer dislike.

School liking The 11-item Liking for School Questionnaire (Ireson & Hallam, 2005) assessed children's attitudes toward school (e.g., "This is a good school"), happiness in school (e.g., "I am very happy when I am in school"), the value of school (e.g., "School work is worth doing"), and the relationship to school (e.g., "The school and I are like..."). The children responded to the questions using a 5-point scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*) for items 1-9, a 4-point scale for question 10 ranging from 1 (*Very important*) to 4 (*Not important at all*), and a 5-point scale for question 11 ranging from 1 (*Good friends*) to 5 (*Enemies*). Items were reverse coded and then summed following Ireson and Hallam's guidelines such that high scores indicated higher levels of reported school liking. The scale had moderate internal consistency at Time 1 ($\alpha = .74$) and Time 2 ($\alpha = .79$) and acceptable stability between Time 1 and Time 2, $r(158) = .69, p < .001$.

Loneliness The children completed a four item 'pure' measure of loneliness that directly assessed experiences of loneliness at school derived from the Loneliness and Social Dissatisfaction Questionnaire (Asher, Rymel, & Henshaw, 1984; Asher & Wheeler, 1985) as a measure of their experiences of loneliness in school using a 5-point scale ranging from 1 (*Not true at all*) to 5 (*Always true*). Similar measures have been used previously with children to assess their feelings of loneliness (e.g., Ladd & Coleman, 1997) as there are limited ways to report loneliness (Galanaki & Kalantzi-Azizi, 1999). The items were summed such that high scores indicated greater reported loneliness in school (e.g., "I feel alone at school"). The summed items had good internal consistency at Time 1 ($\alpha = .86$) and Time 2 ($\alpha = .85$) with modest stability between Time 1 and Time 2, $r(166) = .60, p < .001$.

Friendship quality The multidimensional friendship qualities scale (Bukowski, Hoza, & Boivin, 1994) was used to assess friendship quality. The original scale comprised 5 subscales assessing: Companionship (4 items e.g., "My friend and I spend all our free time together", Time 1 $\alpha = .68$ and Time 2, $\alpha = .66, r(154) = .47, p < .001$), help/aid (5 items e.g.,

“My friend helps me when I’m having trouble with something”, Time 1 $\alpha = .76$ and Time 2 $\alpha = .77$, $r(154) = .40$, $p < .001$), security (5 items e.g., “If I have a problem at school or at home, I can talk to my friend about it”, Time 1 $\alpha = .80$ and Time 2 $\alpha = .75$, $r(154) = .42$, $p < .001$), closeness (5 items e.g., “I feel happy when I am with my friend”, Time 1 $\alpha = .73$ and Time 2 $\alpha = .79$, $r(154) = .51$, $p < .001$), and conflict (4 items e.g., “I can get into fights with my friend”, Time 1 $\alpha = .71$ and Time 2 $\alpha = .75$, $r(154) = .41$, $p < .001$). Children responded to the items using a 5-point scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*) and were asked to think about one of their closest friends whilst completing the questionnaire, although they did not report who that individual was. Higher scores were indicative of higher friendship quality.

Procedure

Children completed the questionnaires twice over a three month period as part of a class session. Time 1 was during April of the school year and Time 2 was July. During the administration of the measures, children were asked to work independently, to keep their answers confidential, and informed that it was not a test. Consent for participation was initially gained from the head teachers and parents were informed of the study and given the option of withdrawing their son/daughter from the sample. The children also gave their verbal assent before completing the measures. Children without parental consent and those who did not want to participate completed other tasks.

Analysis strategy

The ratings of 1 that the children awarded to their peers from the peer dislike measure were entered in to Ucinet version 6 (Borgatti, Everett, & Freeman, 2002). Each classroom served as a separate social network at Time 1 and Time 2. Following the initial social network analyses, the children’s symmetric reciprocal peer dislike scores yielded from Ucinet were subsequently analysed using SPSS. The symmetrical reciprocal peer dislike scores

served as an indicator of the children's matched expressions of dislike as a proportion of the network. To examine the distinctiveness of peer dislike, the ratings of 5 that the children awarded to their peers from the peer dislike measure were entered separately into Ucinet for each classroom and Time.

Results

Distinctiveness of peer dislike

To determine whether the network of peer dislike was distinct from the network of peer liking for each classroom and time, quadratic assignment procedure (QAP) correlations were used to examine the relationship between the peer dislike network and the corresponding peer liking network for each classroom at each time. As the data was binary, Jaccard coefficients were used (Hanneman & Riddle, 2005). At Time 1, the Jaccard coefficients between the peer dislike and the corresponding peer liking network for each classroom ranged from 0 to .04, $p > .05$ and at Time 2, the Jaccard coefficients between the peer dislike and the corresponding peer liking network for each classroom ranged from 0 to .05, $p > .05$. Together, these results indicate that the peer dislike network is distinct from the peer liking network for all classrooms at both times.

Network level reciprocal peer dislike

The proportion of reciprocal dislike within each classroom at Time 1 and Time 2 was examined using hybrid and arc reciprocity calculated using Ucinet, separately for each classroom. Hybrid reciprocity serves as an indicator of the proportion of individuals who are linked in a network that have a reciprocated relationship (Hanneman & Riddle, 2005). Consequently, hybrid reciprocity indicated the extent to which when a child was nominated as disliked that this relationship was reciprocated within each classroom. At Time 1, hybrid reciprocity ranged from 0 to .48 indicating that 0 – 48% of the children were part of a reciprocal dislike dyad. At Time 2, the hybrid reciprocity ranged from .06 to .40 indicating

that 6 – 40% of the children were part of a reciprocal dislike dyad. Arc reciprocity serves as an indicator of the proportion of all ties within a network that are reciprocated relative to the actual ties an individual has (Hanneman & Riddle, 2005). Therefore, arc reciprocity indicated the proportion of reciprocated dislike relative to all of the dislike nominations within the classroom. At Time 1, arc reciprocity ranged from 0 to .65 indicating that 0 – 65% of the dislike relationships within the classrooms were reciprocated. At Time 2, arc reciprocity ranged from .14 to .57 indicating that 14 – 57% of the dislike relationships within the classrooms were reciprocated.

Concurrent associations among measures

As the sample spanned two year groups, the age (at Time 1) of the children needed to be controlled so a series of partial correlations were used to assess the associations between the children's reciprocal peer dislike and the indicators of psychosocial adjustment at Time 1 (Table 1) and Time 2 (Table 2). At Time 1, there was a small positive association between reciprocal peer dislike and loneliness: Children with higher reciprocal peer dislike scores had higher levels of loneliness. Reciprocal peer dislike was not associated with any of the other measures at Time 1 or Time 2. The magnitude of association between reciprocal peer dislike and adjustment at Time 2 was lower than at Time 1 which suggests changes in the concurrent associations between reciprocal peer dislike and adjustment. At both Time 1 and Time 2, there was evidence of the convergent validity of the measures of school adjustment and social relationship quality and the magnitude of these associations varied from small to large.

Insert Table 1 and Table 2 here

Longitudinal associations between measures

A series of regression analyses that tested for both quadratic relationships and linear relationships were used to examine the longitudinal relationships between measures. Quadratic reciprocal peer dislike was computed by multiplying reciprocal peer dislike by itself. To test the hypothesis that reciprocal peer dislike predicted changes in adjustment, following the recommendations of Cohen, Cohen, West, and Aiken (2003), the corresponding adjustment measure at Time 1, Age at Time 1, quadratic reciprocal peer dislike at Time 2, and reciprocal peer dislike at Time 2 were entered in the first block. In the second block, reciprocal peer dislike at Time 1 was entered and in the third block the quadratic reciprocal peer dislike at Time 1 was entered. Age at Time 1 was entered to control for potential differences in the sample and quadratic reciprocal peer dislike at Time 2 and reciprocal peer dislike at Time 2 were entered to control for these variables.

Significant quadratic relationships emerged between reciprocal peer dislike at Time 1 and changes in adjustment. Specifically, quadratic reciprocal peer dislike at Time 1 predicted changes in loneliness, $\beta = .38$, $t(6,150) = 2.19$, $p = .03$, $\Delta R^2 = .019$: Higher or lower reciprocal peer dislike predicted higher levels of loneliness than would be expected on the basis of a linear relations as denoted in Figure 1. Similarly, quadratic reciprocal peer dislike at Time 1 predicted changes in help, $\beta = -.65$, $t(6,150) = -3.14$, $p = .002$, $\Delta R^2 = .053$ (Figure 2a), security, $\beta = -.61$, $t(6,150) = -3.02$, $p = .003$, $\Delta R^2 = .047$ (Figure 2b), and closeness, $\beta = -.55$, $t(6,150) = -2.87$, $p = .005$, $\Delta R^2 = .038$ (Figure 2c): High or low reciprocal peer dislike predicted lower scores on these measures than would be expected on the basis of a linear relationship.

Insert Figure 1 and Figure 2 here

Linear relationships also emerged between reciprocal peer dislike at Time 1 and changes in help, $\beta = -.61$, $t(6,150) = -2.80$, $p = .006$, and security, $\beta = -.46$, $t(6,150) = -2.12$, $p = .036$: Higher levels of reciprocal peer dislike at Time 1 predicted lower help and security at Time 2. Reciprocal peer dislike at Time 1 did not predict any of the other adjustment measures.

To further examine the longitudinal relationship between reciprocal peer dislike and adjustment, the analyses were repeated reversing the direction of inferred causality. Following the previous analysis plan, separate regression analyses were conducted with reciprocal peer dislike at Time 2 as the outcome variable for each of the adjustment measures. School liking, loneliness, help, security, closeness, competence, and conflict at Time 1 failed to predict changes in reciprocal peer dislike ($p > .05$).

Gender and Time differences

A 2 x 2 (Time [Time 1, Time 2] x Gender [boy, girl]) mixed ANOVA, with Time as the repeated variable, was used to explore the potential differences in reciprocal peer dislike according to Time and gender. There was a significant main effect of Time, $F(1, 141) = 5.36$, $p = .022$, $\eta^2 = .037$, such that reciprocal peer dislike was higher at Time 1 ($M = .25$, $SD = .23$) than at Time 2 ($M = .21$, $SD = .22$). There was no significant main effect of gender, $F(1, 141) = < 1$, and no interaction between Time and gender, $F(1, 141) = < 1$. This suggests that gender was not a contributing factor in reciprocal peer dislike amongst the children.

To examine the stability of reciprocal dislike at a child level the relationship between the symmetrical reciprocal dislike scores at Time 1 and Time 2 was examined using a partial correlation, controlling for age at Time 1. There was evidence of modest stability of reciprocal dislike between Time 1 and Time 2, $pr(148) = .57$, $p < .001$. Higher levels of reciprocal peer dislike at Time 1 were associated with higher levels of reciprocal peer dislike at Time 2, and the effect was modest. The stability of reciprocal peer dislike between Time 1

and Time 2 was also examined at the network level for each classroom using QAP correlations with Jaccard coefficients as the data was binary (Hanneman & Riddle, 2005). The Jaccard coefficients ranged .24 to .59, $p \leq .001$, and provided evidence of the stability of reciprocal peer dislike at a classroom level between Time 1 and Time 2, with the exception of one classroom .08, $p > .05$.

Discussion

In summary, the present study found evidence that 9- to 11-year-olds' reciprocal peer dislike was distinct from reciprocal peer liking and predicted changes in school adjustment (assessed as loneliness) and social relationship qualities (assessed as help, security, and closeness) over three months. Further, those relationships were curvilinear in nature such that children who had either very high or very low reciprocal peer dislike experienced higher levels of loneliness and lower help, security, and closeness than would be expected based on a linear relationship. These findings support the argument that for some children there is a tendency to over-report negative experiences (Baltazar et al., 2012; Smith et al., 2013). The identified relationships may have occurred because those children who tend to over-report negative experiences may also have difficulty identifying the positive qualities of their best friends. Also, the relationships may reflect children's modesty concerning their social status which has previously been associated with a negativity bias (Smith et al., 2013).

When the direction of inferred causality was reversed there were no significant predictors of reciprocal peer dislike. Therefore, the curvilinear relationship between reciprocal peer dislike, loneliness, help, security, and closeness may have emerged because children who experience higher levels of reciprocal peer dislike may lack the opportunities to interact with their peers (Asher & Paquette, 2003; Qualter & Munn, 2002). The children with very high reciprocal peer dislike who experience higher levels of loneliness may correspond to the distinct lonely/rejected group of 4- to 8-year-olds identified by Qualter and Munn who

are those children that are disliked by their peers and also feel lonely. Qualter and Munn reported that lonely/rejected children displayed less positive adjustment than children in the lonely, rejected, or control group. Conversely, those children with very low levels of reciprocal peer dislike may experience higher levels of loneliness than would be expected in a linear relationship because although the data suggest that they have social contacts, these social contacts may not be at the desired level and, as such, the children may experience loneliness (DiTommaso & Spinner, 1997; Qualter & Munn 2002).

Children with very high levels of reciprocal peer dislike may experience lower levels of help, security, and closeness in relationships than would be expected based on a linear relationship owing to the potential lack of opportunities to interact with their peers, they may have developed inappropriate interaction styles (Hay et al., 2004) or they may not be able to interact with others who share similar social characteristics (Zettergen, 2005). Conversely, those children with very low levels of reciprocal peer dislike may experience lower levels of help, security, and closeness because they may have developed a potentially naïve orientation towards their peers with their expectations of others not being met (Rotenberg, Boulton, & Fox, 2005).

Reciprocal peer dislike did not predict school adjustment assessed as school liking and social relationship qualities assessed as companionship and conflict over three months suggesting that experiencing reciprocal peer dislike does not influence all aspects of children's psychosocial adjustment examined in the present study. A potential explanation for the lack of relationship between reciprocal peer dislike and school liking may be the type of learning activities that the children engage at school. Specifically, because of the children's age it may be that they work with a small number of partners rather than the class as a whole and, as such, can still benefit from the collaborative peer learning activities (Cohen, Kulik, & Kulik, 1982).

There was no evidence of gender differences in children's reciprocal peer dislike with both boys and girls experiencing reciprocal peer dislike to a similar extent. This finding is consistent with the previous research that has reported no gender differences in experiences of reciprocal peer dislike (Abecassis et al., 2002; Parker & Gamm, 2003). The lack of gender differences in reciprocal peer dislike may have emerged in the present study because the peer groups examined in the present study comprised the class wide peers and, as such, represent a broader social network (Maassen et al., 2005).

Reciprocal peer dislike was modestly stable over three months at the child level and the classroom level and the reports of reciprocal peer dislike decreased between Time 1 and Time 2. This finding of modest stability is consistent with Erath et al.'s (2009) finding with younger children. However, the modest stability of the reciprocal peer dislike seems to be lower than for the stability of children's social networks more generally which has been reported to be between 60 and 65 percent (Kindermann, 2007; Witvlieta et al., 2010). A potential explanation for the modest stability in the present study could be accounted for, and facilitated, by peripheral group members changing their perceptions of members of the network (Jones & Estell, 2010).

The findings of the present study also provide evidence for the claims that reciprocal peer dislike and peer rejection, although mathematically related (Rodkin et al., 2003), are distinct constructs which may account for why unique associations were found in the current study. For example, reciprocal peer dislike was not associated with school liking, companionship, and conflict in the current study but previously peer rejection was associated with lower school liking (e.g., Buhs & Ladd, 2001; Coyl, Jones, & Dick, 2004). Conversely, Parker and Asher (1993) reported that although children with low levels of peer acceptance reported lower quality friendships characterised with lower levels of validation and caring, help and guidance, and intimate disclosure, and greater levels of conflict and betrayal than

children with high levels of peer acceptance, the difference was not significant for companionship and recreation. However, in the current study, those children with higher levels of reciprocal peer dislike had friendships characterised by lower levels of help, security, and closeness, although the children did not identify the particular friendship at Time 1 or Time 2. A potential explanation for this finding is that reciprocal peer dislike reflects an individual's experience at a dyadic level whereas peer rejection reflects an individual's experience at a group level (Parker & Gamm, 2003).

Although children's reciprocal peer dislike predicted only some aspects of children's school adjustment and social relationship qualities in the present study, the results add to the growing literature that children's experiences of the potentially 'negative' aspects of peer relationships shape their experiences of school (Abecassis et al., 2002; Cleary, 2005; Gorman et al., 2011; Parker & Gamm, 2003). Therefore, teachers should consider how children's peer relationships impact on their learning. For example, children's peer experiences may influence their propensity to engage in collaborative classroom learning activities with their peers. Contributing to, and engaging in, collaborative learning with peers in a positive manner will allow children to gain the most from that learning experience (Cohen et al., 1982).

One of the limitations of the study is that we did not distinguish between types of peer dislike but rather followed the approach adopted by Erath et al. (2009) and used the lowest possible ratings from a sociometric measure of liking to assess peer dislike and then examined reciprocal patterns of peer dislike using social network analysis. Although the social network analysis, allowed the variations in class sizes to be controlled for and permitted examination of the entire network of dislike, the reasons why children did not like each other and their other social relationships with classmates were not captured in this analysis. Further, the relationship between reciprocal peer dislike and adjustment could be

accounted for by an aspect of the child that was not assessed in the current study that independently leads them to experience peer dislike and adjustment difficulties. Therefore, future research should examine the characteristics of the participants and also consider potential moderators in the relationships such as the number of mutual friendships a child has. Abecassis (2003) argues that there a number of theoretical reasons why children may dislike each other including being: Former friends, part of a bully-victim dyad, rivals, or aversive towards each other. This also raises the issue of who initiates a peer dislike relationship, as children who initiate the negative relationships might be those with greater loneliness and less security. When distinguishing the type of peer dislike the individual initiating the dyad would be of critical importance as they could be generating fear responses in the other child (if a bullying relationship) or perhaps behaving in a way that causes the feeling of aversion in the other party. Future research could examine in more detail the severity of the dislike, and although identifying who initiates a negative relationship could be difficult to ascertain within a classroom environment, observational methods examining children's interactions could identify key behaviours, such as taunting or aversion behaviours that could perhaps identify problematic relationships and allow for intervention.

In summary, using social network analysis, the present study found evidence of modest stability of 9- to 11-year-olds' reports of reciprocal peer dislike over three months. There was also some evidence that children's reciprocal peer dislike predicted changes in aspects of school adjustment and social relationship qualities.

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Table 1

Summary of intercorrelations, means, and standard deviations for the measures of reciprocal peer dislike and adjustment at Time 1 controlling for Age at Time 1

	<i>M</i>	<i>SD</i>	2	3	4	5	6	7	8
1. Reciprocal peer dislike	.25	.23	-.13	.24**	.08	.06	.03	.12	.02
2. School liking	40.76	5.39		-.24**	-.20*	.13	.20*	.20*	-.16
3. Loneliness	7.52	3.52			-.21*	-.20***	-.25**	-.11	.14
4. Competence	14.49	3.72				.64***	.54***	.63***	-.10
5. Help	19.68	4.26					.71***	.74***	-.27***
6. Security	19.78	4.50						.68***	-.40***
7. Closeness	20.78	3.69							-.22**
8. Conflict	10.03	3.98							

Note. *df* = 140

*** $p \leq .001$, ** $p < .01$ * $p < .05$

Table 2

Summary of intercorrelations, means, and standard deviations for the measures of reciprocal peer dislike and adjustment at Time 2 controlling for Age at Time 1

	<i>M</i>	<i>SD</i>	2	3	4	5	6	7	8
1. Reciprocal peer dislike	.21	.22	-.05	.16	-.03	-.01	-.16	-.06	.01
2. School liking	40.50	5.58		-.28***	.36***	.23**	.26***	.32***	-.13
3. Loneliness	7.34	3.32			-.28***	-.32***	-.32***	-.24**	.16
4. Competence	15.29	3.03				.59***	.52***	.68***	.01
5. Help	20.45	3.88					.70***	.72***	-.03
6. Security	20.17	4.01						.73***	-.22**
7. Closeness	20.82	3.76							-.08
8. Conflict	10.15	4.02							

Note. *df* = 140

*** $p \leq .001$, ** $p < .01$ * $p < .05$

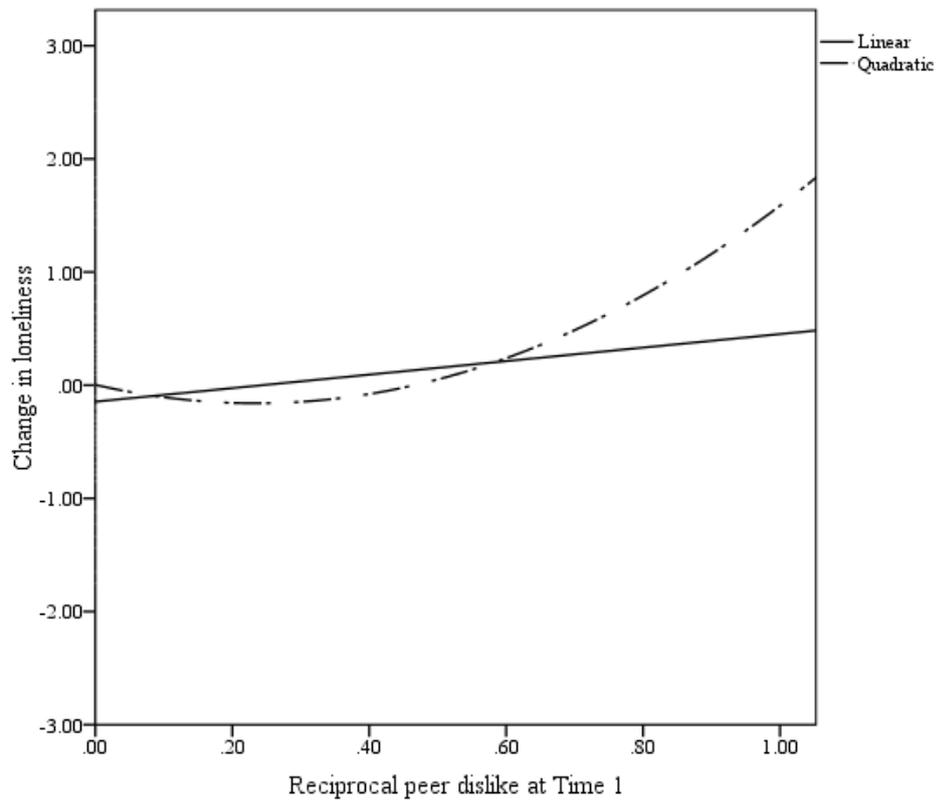
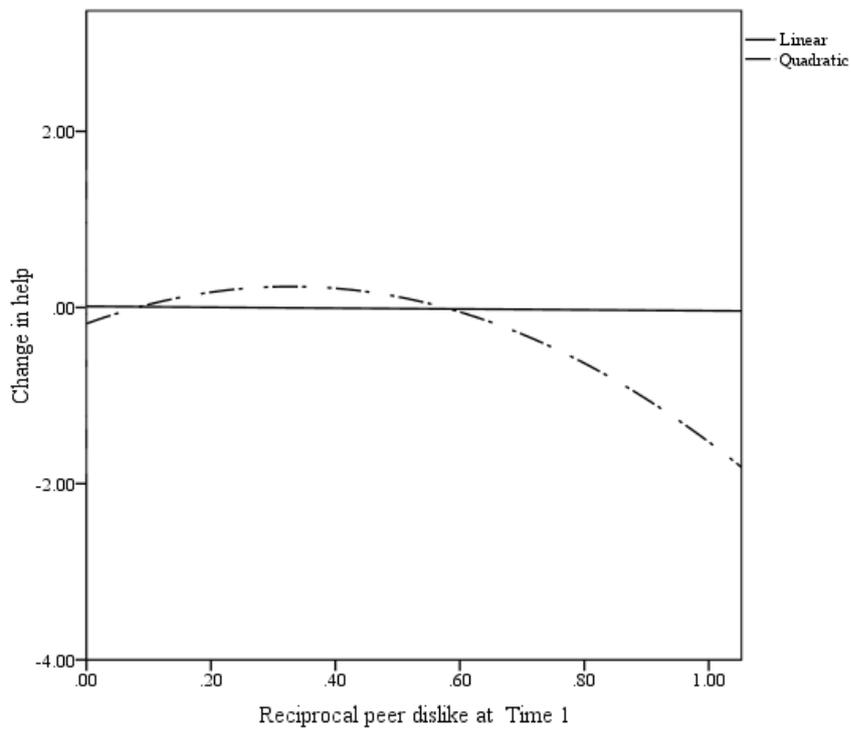
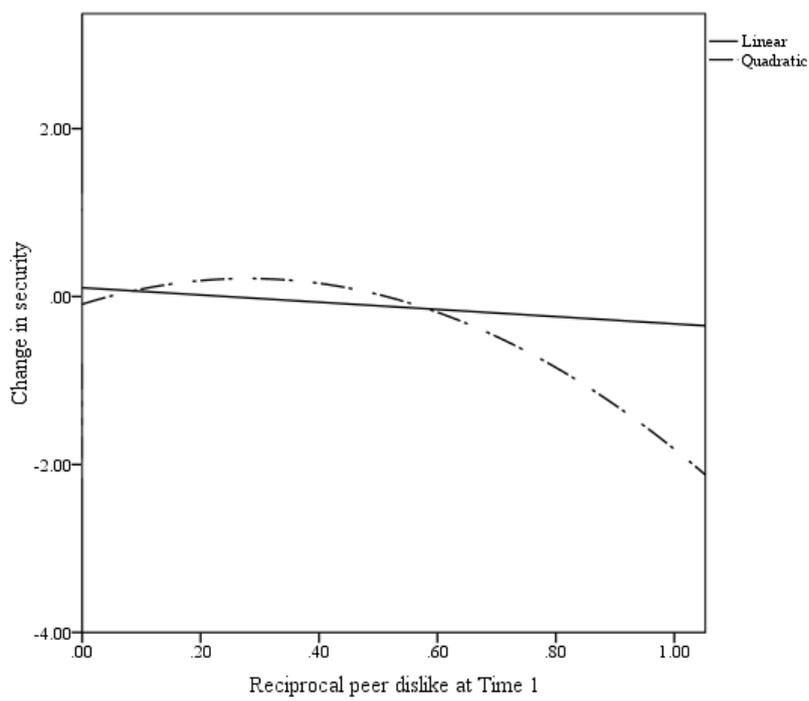


Figure 1. The relationship between reciprocal peer dislike at Time 1 and changes in loneliness

(a)



(b)



(c)

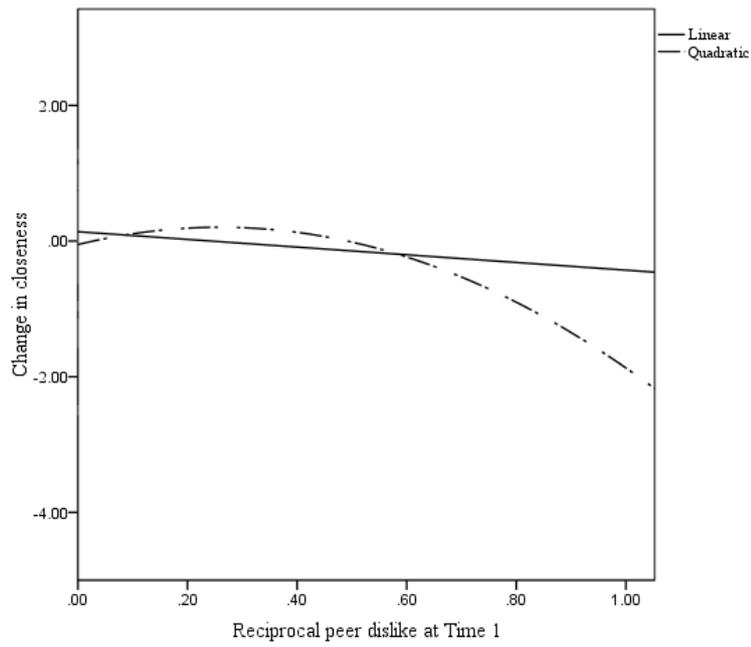


Figure 2. The relationship between reciprocal peer dislike at Time 1 and changes in help (a), security (b), and closeness (c).