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Abstract

Co-rumination has been shown advantageous for friendship quality, but disadvantageous for mental health. Recently, two components have been distinguished, with co-brooding predicting increases in depressive symptoms and co-reflection decreases. The current study aimed to replicate these findings and investigated whether both components also show differential relations with friendship quality. Gender was investigated as a moderator. Path analyses were used on data of 313 adolescents aged 9–17 (50.5% girls). Co-brooding was related to more concurrent and prospective depressive symptoms in girls. Co-reflection predicted less concurrent and prospective depressive symptoms in girls and higher concurrent positive friendship quality for boys and girls. This study underscores the value of studying co-rumination components and suggests that boys and girls in this context differ in their pathways towards depression.

Keywords: Co-brooding; Co-reflection; Co-rumination; Depressive symptoms; Friendship quality; Adolescence

Introduction

The transition from childhood to adolescence goes together with influential changes in different domains. One domain that becomes increasingly salient during adolescence is that of peer relationships. Whereas adolescents tend to become increasingly independent from their parents, relationships with peers in general and close dyadic relationships with friends in particular gain importance (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006; Rubin, Bukowski, & Parker, 1998). Friendships provide an important source of social support and can protect youth against emotional problems (Rose & Rudolph, 2006; Taylor, 2006). However, research revealed that specific characteristics of friendships may have downsides too. For example, when the conversations that adolescents have with each other are excessively and purely ruminative, risk for internalizing problems increases. Rose (2002) called this phenomenon co-rumination, which she defined as “excessively discussing personal problems within a dyadic relationship” (p. 1830). Co-rumination lies at the intersection of self-disclosure and rumination and is characterized by extensively talking about problems, rehashing problems, speculating about problems, mutual encouragement of problem talk, and dwelling on negative affect (Rose, 2002, p. 1830).

A considerable body of research has demonstrated co-rumination to be associated with both adaptive and maladaptive outcomes in adolescence. On the one hand, it has been shown to increase the risk for emotional maladjustment. Specifically, co-rumination has been found to be associated with higher concurrent levels of depressive symptoms (for a review, see Spendelow, Simonds, & Avery, 2017) and a lifetime history of clinical depression (Stone, Uhrlas, & Gibb, 2010). It has further been shown to predict future clinical depression, including first onsets (Stone, Hankin, Gibb, & Abela, 2011), as well as prospective changes in subclinical depressive symptoms (Hankin, Stone, & Wright, 2010; Rose, Carlson, & Waller, 2007). On the other hand, co-rumination has been found to be related to higher friendship quality and closeness, both cross-sectionally (Calmes & Roberts, 2008; Rose, 2002; Starr & Davila, 2009) and longitudinally (Rose et al., 2007).

More recently, researchers have distinguished between two components within the co-rumination construct. This line of research was inspired by the (depressive) rumination literature. Rumination is the tendency to dwell on one’s sad and depressed feelings and on the possible causes and

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implications of these feelings (Nolen-Hoeksema, 1987). It is a response style that has consistently been shown to be related to concurrent and future depressive symptoms (e.g., Nolen-Hoeksema, Stice, Wade, & Bohon, 2007; Sarin, Abela, & Auerbach, 2005), as well as to increases in the duration of depressive episodes and the likelihood to become depressed (e.g., Nolen-Hoeksema, 2000; Nolen-Hoeksema, Morrow, & Fredrickson, 1993). Research of Treynor, Gonzalez, and Nolen-Hoeksema (2003) showed rumination to be understood as a two-dimensional construct, with brooding and reflection being two components of rumination. Brooding has consistently been found to be maladaptive, being associated with higher depressive symptoms (e.g., Burwell & Shirk, 2007; Schoofs, Hermans, & Raes, 2010), whereas reflection has been found to be rather benign or even adaptive in the context of depressive symptoms (e.g., Treynor et al., 2003; Verstraeten, Vasey, Raes, & Bijttebier, 2010). Driven by the value of studying the interpersonal form of rumination (i.e., co-rumination) and inspired by this distinction between these two different rumination components, Bastin et al. (2014) differentiated co-brooding and co-reflection as two different aspects within co-rumination. Co-brooding was described as a rather passive component of co-rumination, characterized by a tendency to catastrophize and linger on negative feelings within a dyadic relationship when faced with a problem. Co-reflection, on the other hand, was described as a rather active dyadic response style, characterized by a greater willingness to gain insight into a problem and making causal analyses. In their study in a sample of adolescents, only co-brooding but not co-reflection was found to be maladaptive for emotional wellbeing (Bastin et al., 2014). Specifically, co-brooding predicted relative increases in depressive symptoms over a three-month interval, whereas co-reflection predicted relative decreases in symptoms of depression, above and beyond baseline levels of depressive symptoms and rumination. The authors did not establish concurrent relations between co-rumination components and depressive symptoms.

Although this pioneering work has provided interesting insights into different facets of excessive talking about problems, important gaps remain. First, this research is in need of replication to examine the robustness of these findings. Second, in the study of Bastin and colleagues (2014), only depressive symptoms were investigated as correlates of co-brooding and co-reflection. This way, knowledge is still lacking regarding the relevance of co-brooding and co-reflection to adaptive outcomes of co-rumination, such as friendship quality. If co-brooding would be maladaptive in nature,

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as has been suggested, it can be expected that this component would be dysfunctional in the context of friendship quality as well. Co-reflection, on the other hand, which has been identified to be more adaptive, can be expected to be related to higher friendship quality. Gaining insight into relations of co-brooding and co-reflection with both friendship quality and depressive symptoms is key to understanding the nature of both co-rumination facets (i.e., co-brooding as a maladaptive aspect within co-rumination versus co-reflection as an adaptive aspect). Examining co-brooding and co-reflection separately might provide further insight into the utility of distinguishing between both components of co-rumination.

Third, research on the relationship between co-rumination and friendship quality often used friendship quality as a generic measure. However, previous research has shown that friendships typically afford various provisions and can differ on various friendship quality dimensions (Bukowski, Hoza, & Boivin, 1994; Parker & Asher, 1993). Bukowski and colleagues (1994) distinguished between five different aspects of friendship quality, that is, companionship (i.e., the amount of voluntary time spent together), help (i.e., mutual help and assistance), security (i.e., the belief of being able to trust and rely upon a friend; having a secure friendship), closeness (i.e., the strength of the bond to a friend; the sense of specialness experienced), and low levels of conflict (i.e., low annoyance, arguments, and fights with a friend) (Bukowski et al., 1994). An examination of these different aspects could contribute to a more nuanced or fine-grained understanding of the link between friendships and co-rumination (components).

One final limitation of existing research is that gender differences were not examined in the strength of the associations with co-brooding and co-reflection. Nevertheless, research has consistently shown adolescent girls to report higher levels of depressive symptoms, as compared to adolescent boys (Cole et al., 2002). These differences in prevalence of depression might be explained by certain relationship processes having different adjustment outcomes for girls versus boys (Rose & Rudolph, 2006). It is possible, for example, that excessive talking about problems is differentially related to depressive symptoms for boys and girls and that this might partly explain the higher rates of depression in girls. Accordingly, the positive association between the maladaptive component co-brooding and depressive symptoms in particular can be expected to be stronger in girls, contributing to higher

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depressive symptom levels in girls. This would also be in line with previous studies on intrapersonal brooding that have shown this component to be more strongly related to depressive symptoms in girls (e.g., Paredes & Zumalde, 2015). Some previous studies have already focused on the moderating role of gender in the association between co-rumination on the one hand and depressive symptoms on the other hand. Rose and colleagues (2007) demonstrated the positive relation between co-rumination and future depressive symptoms to be present only in girls, but not boys. However, evidence so far is mixed, as some studies failed to establish differential associations in girls as compared to boys (Dam, Roelofs, & Muris, 2013; Hankin et al., 2010; Stone et al., 2011; White & Shih, 2012). In the context of friendships, on the other hand, girls have been found to care more than boys about having a dyadic friendship and to worry more about the loss of it (Henrich, Blatt, Kuperminc, Zohar, & Leadbeater, 2001). Girls were further found to report more connection-oriented goals and fewer agentic- and status-oriented goals than boys (Rose & Rudolph, 2006). Because of this, we hypothesized the expected associations of both co-rumination components with friendship quality to be stronger in girls. Only few studies have investigated the moderating role of gender in the relation between co-rumination and friendship quality. Cross-sectionally, one unexpected association was established by Rose (2002), who found correlations between co-rumination and friendship quality to be stronger for boys. Prospectively, co-rumination was not found to be a stronger predictor of future friendship quality for boys nor girls (Rose et al., 2007).

Current Study

The present study was designed to address the aforementioned gaps in this literature. The first aim of the current study was to investigate whether co-brooding and co-reflection differentially predict friendship quality, in addition to depressive symptoms, both cross-sectionally and prospectively. To increase our knowledge on co-brooding and co-reflection as predictors of future depressive symptoms and to increase comparability to the study of Bastin et al. (2014) who included a relatively short follow-up interval (i.e., three months), prospective changes were investigated over a 2-month interval. We not only examined friendship quality as a generic measure, but also investigated the five different friendship quality dimensions as reported by Bukowski and colleagues (1994). Given the adaptive characteristics of co-reflection, we hypothesized this component to be positively related to friendship quality in general

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and to all positive friendship quality aspects in particular (i.e., help, security, companionship, and closeness). The questionnaire that was used in previous studies to investigate a relation between friendship quality and co-rumination included a predominant sample of items assessing closeness (e.g., Rose, 2002; Rose et al., 2007). Because of this, relations for co-reflection were expected to be especially strong for this friendship quality aspect. We further expected co-reflection to predict less concurrent depressive symptoms and a relative decrease in symptoms over time. However, given the maladaptive nature of co-brooding, we hypothesized this component to be negatively associated with friendship quality, but positively associated with friendship conflict. A positive association was further expected with depressive symptoms, with higher levels of co-brooding being associated with (relatively) higher symptoms of depression, both cross-sectionally and prospectively. The second aim of our study was to investigate the moderating role of gender in the relation between co-rumination components on the one hand and friendship quality and depressive symptoms on the other hand. As described above, we hypothesized relationships with friendship quality to be especially strong in girls. Further, co-brooding was expected to be more strongly (and positively) related to depressive symptoms in girls.

Methods

Participants and Procedure

A community sample of 504 pupils from fifth to tenth grades of 11 schools in Flanders – the northern Dutch-speaking region of Belgium– was invited to take part in the study. Prior to the first assessment, prospective participants had been given a letter in school that had to be handed to their parents. In these letters, the purpose of the study was explained and parents could revoke consent for the participation of their child by returning the letter to school. Pupils for whom parents did not decline participation received an active informed consent in which they could indicate whether or not they wanted to participate in the study. Questionnaires were filled out collectively in the classrooms during school hours, both at baseline and again after two months. At each time point, a trained master's student in clinical psychology was available in case there were questions regarding the items. Ethical approval was obtained from the local research Ethics Committee.

Parents of 26 children did not permit their child to participate in the study and returned the forms to the schools. Another 13 children were absent on the first assessment due to illness. None of the

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students declined participation. Consequently, the Time 1 (T1) sample consisted of 465 pupils (50.3% girls) with a mean age of 13 years ($SD = 2.10$; range 9-18). Two-month follow-up was available for 455 pupils (i.e., 97.8% of the T1 sample). Only participants naming the same person as their best friend at both assessments were included in the analyses, given that we made sure to only make inferences on co-rumination and friendship quality scores, and changes, that were based on the same friendship in both waves. Students who indicated they had no best friend ($n = 2$) and students who did not provide the name of their best friend at T1 and/or T2 ($n = 13$) were excluded from analyses. A total of 127 participants did report a different best friend at T1 and T2. The final sample consisted of 313 adolescents (i.e., 67.3% of the T1 sample). The mean age of the sample was 13 years ($SD = 2.07$; range 9-17) and 50.5% were girls. A total of 73 students were in fifth grade (23.3%), 49 in sixth grade (15.7%), 26 in seventh grade (8.3%), 29 in eighth grade (9.3%), 53 in ninth grade (16.9%) and 83 in 10th grade (26.5%). Between the original T1 sample and the selected group with a same best friend at the two time points, no significant baseline differences were observed for gender, $\chi^2(1) = 0.282, p = .60$, grade, $t(438) = -1.48, p = .14$, brooding, $t(437) = 0.64, p = .52$, reflection, $t(437) = 0.72, p = .47$, co-brooding, $t(437) = 0.76, p = .45$, co-reflection, $t(438) = 0.24, p = .81$, general friendship quality, $t(366) = -0.86, p = .39$, and its five different aspects (i.e., companionship, $t(368) = -1.70, p = .09$, conflict, $t(367) = 1.39, p = .17$, help, $t(366) = 0.07, p = .94$, security, $t(366) = -0.57, p = .57$, and closeness, $t(366) = -0.02, p = .99$). However, significant baseline differences between the two groups were found for depressive symptoms, $t(437) = 2.04, p = .04$. Participants with the same best friend at both assessments reported lower mean scores.

Measures

Co-rumination. Co-rumination was assessed with the Co-Rumination Questionnaire (CRQ; Rose, 2002). It is a 27-item self-report measure that assesses the extent to which participants co-ruminate with their closest, same-sex friend. Items are rated on a 5-point rating scale (1 = *not at all true* to 5 = *really true*). For the present study, 12 items of the CRQ were used, with six items assessing co-brooding (e.g., “When we talk about a problem that one of us has, we try to figure out every one of the bad things that might happen because of the problem”) and six items assessing co-reflection (e.g., “When we talk about a problem that one of us has, we talk about all of the reasons why the problem might have

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happened”) (Bastin et al., 2014). Using confirmatory factor analysis, model fit of this two-factor model (i.e., one co-brooding factor and one co-reflection factor) was evaluated and compared to the fit of a one-factor model (i.e., all selected items representing one general factor). Both models showed good fit to the data: $\chi^2(54) = 119.36$, CFI = .95, TLI = .94, RMSEA = .06, SRMR = .03, AIC = 20081.38, BIC = 20216.24 for the one-factor model, and $\chi^2(53) = 103.26$, CFI = .97, TLI = .96, RMSEA = .06, SRMR = .03, AIC = 20067.27, BIC = 20205.89 for the two-factor model. However, the two-factor model fit the data significantly better than the one-factor model, $\chi^2_{diff}(1) = 16.11$, $p < .001$. Internal consistency was excellent, with Cronbach’s alpha being .89 and .90 for co-brooding and co-reflection, respectively.

Rumination. A ruminative response style to negative affect was measured using the extended ‘Rumination’ subscale of the Children’s Response Styles Questionnaire (CRSQ-ext: Verstraeten et al., 2010; CRSQ: Abela, Brozina, & Haigh, 2002). The scale includes 10 items tapping brooding (e.g., “Thinking “What have I done to deserve this?””) and reflective (e.g., “Analyzing your personality to try to understand why you are depressed”) responses to sadness using a 4-point rating scale (1 = *almost never* to 4 = *almost always*). Internal consistency was .70 and .69 for the brooding and reflection subscales, respectively.

Depressive symptoms. Depressive symptoms were assessed using the Children’s Depression Inventory (CDI; Kovacs, 2003). This is a 27-item self-report questionnaire that measures affective, cognitive, and behavioral symptoms of depression during the past two weeks. Three-choice statements are rated on a 3-point rating scale, ranging from 0 to 2. Total scores on the CDI ranged from 0 to 54, with higher scores representing more severe depressive symptoms. The questionnaire has been shown to be reliable and valid and discriminates children with major depressive disorders from non-depressed children (Kovacs, 2003). Internal consistency of the CDI was high, with Cronbach’s alpha being .86.

Friendship quality. Friendship quality was measured with the Friendship Qualities Scale (FQS; Bukowski et al., 1994). This is a 23-item self-report questionnaire that consists of five subscales that can be summed to yield a composite measure of friendship quality: companionship (e.g., “My friend and I spend all our free time together”), help (e.g., “If other kids were bothering me, my friend would help me”), security (e.g., “If my friend or I do something that bothers the other one of us, we can make up easily”), closeness (e.g., “I feel happy when I am with my friend”), and conflict (e.g., “I can get into

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fight with my friend”). Each item is rated on a 5-point rating scale (1 = *does not apply to me at all* to 5 = *applies to me very well*). Both the generic measure and the separate subscales were used in the current study. Participants reported on friendship quality while thinking about the same friend that they focused on for the completion of the CRQ. With a Cronbach’s alpha of .90, internal consistency of the total scale was excellent. Internal consistency was good for the subscales help, security, and closeness, with Cronbach’s alphas being .79, .72 and .75, respectively. Alphas were rather poor for companionship and conflict, with Cronbach’s alphas being .64 and .59, respectively.

Friendship nomination. We further asked for the name of respondents’ same-sex best friend. This was an open question, with no requirement that the friend would be in the same school.

Data Analyses

To examine the effects of co-brooding and co-reflection on depressive symptoms and friendship quality, structural equation modeling was performed in MPlus 7.4. This procedure allows for accurate estimates of cross-time effects between the independent variables (i.e., co-brooding and co-reflection) and dependent variables (i.e., depressive symptoms and friendship quality). Our model accounted for all stability coefficients of the outcome variables (i.e., the variable as predicted by its level at the previous time point) and within-time associations (i.e., the correlations between the different variables at each time point). Moderating effects of gender were investigated with multi-group analyses using the WALD test (Wald, 1943) of parameter constraints. A significant Wald test suggests that the groups that are compared (i.e., girls versus boys) vary on the pathway of interest, whereas a nonsignificant test suggests that the most parsimonious model may be maintained.

Mplus provides fit indices to evaluate model fit (Kline, 2005). The Chi-square index (χ^2) should be as small as possible; The Comparative Fit Index (CFI; Bentler, 1990; Hu & Bentler, 1999) should exceed .90 for reasonable fit and exceed .95 for good fit; the Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993) should be less than .08 for reasonable fit and less than .05 for approximate fit; and the Standardized Root Mean square Residual (SRMR; Bentler, 1990) should be less than .10.

Normality was tested. Data on depressive symptoms were not normally distributed at T1 and at Time 2 (T2), with skewness and kurtosis being 1.024 and 1.437 at T1 and 1.390 and 2.09 at T2,

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respectively. Because of this, we performed a log transformation on these two variables. To rule out the possibility that any effects would be due to overlap with intrapersonal rumination, brooding and reflection were added as covariates in all analyses. In all path models, age was controlled for by estimating paths from age to each variable at baseline.

Results

Descriptive Statistics

Means, standard deviations, and intercorrelations are presented in Table 1. All rumination and co-rumination scales showed moderate positive intercorrelations. A strong positive correlation was observed between co-brooding and co-reflection; however, collinearity statistics did not exceed the critical values (i.e., VIF < 5 and tolerance > .20). Almost all co-rumination components were significantly associated with concurrent and prospective outcome measures. Only co-reflection was not significantly related to depressive symptoms at T2 and neither co-brooding nor co-reflection were associated with conflict at T1. High correlations were observed between the positive subscales of friendship quality. For conflict, a high correlation was observed with security, and moderate correlations with help, companionship, and closeness. Stability coefficients were high for both depressive symptoms and friendship quality. For all variables except depressive symptoms and conflict at T2, significant gender differences were observed. Boys reported higher conflict levels compared to girls. For all other variables, girls reported higher levels than boys.

Path Analyses

Co-Rumination components predicting depressive symptoms and friendship quality. In a first set of path analyses, we investigated how co-brooding and co-reflection predicted depressive symptoms and friendship quality, both cross-sectionally and after two months. First, a cross-sectional path model was performed with depressive symptoms and the total score of friendship quality as outcome variables. The model including all within-time correlations and all paths among the variables was fully saturated (i.e., zero degrees of freedom), making it impossible to interpret the fit indices. To be able to interpret the fit of the model, nonsignificant paths of control variables were trimmed, indicating an excellent fit to the data, $\chi^2(5) = 5.69, p = .34$; RMSEA = .02; CFI = 1.00; SRMR = .02. The original, non-trimmed model is displayed in Figure 1. Four cross-sectional paths were found to be

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significant. Analyses showed both co-brooding and co-reflection to significantly predict depressive symptoms, with co-brooding being related to more depressive symptoms and co-reflection being related to less symptoms. Furthermore, co-reflection showed a positive relation with friendship quality. To get some insight into the unique contribution of co-brooding and co-reflection in the prediction of depressive symptoms and friendship quality, another model was run in which brooding and reflection were left out of the model, $R^2 = .09$, $p < .01$ for depressive symptoms and $R^2 = .13$, $p < .001$ for friendship quality (as compared to $R^2 = .32$, $p < .001$ and $R^2 = .13$, $p < .001$ in the model including all variables).

Second, the same cross-sectional path model was performed, in which the total friendship quality scale was replaced by the five separate friendship quality aspects. Co-reflection was related to all positive friendship quality subscales, that is, help, security, closeness, and companionship, with β being .31 ($p < .01$), .42 ($p < .001$), .33 ($p < .01$), and .24 ($p = .04$), respectively. This model was fully saturated. To interpret fit indices, nonsignificant paths were trimmed for control variables, resulting in an excellent fit, $\chi^2(15) = 20.26$, $p = .16$; RMSEA = .03; CFI = .99; SRMR = .02. In all concurrent analyses, intrapersonal brooding was predictive of concurrent depressive symptoms.

Next, prospective path analyses were performed (see Figure 2), including all within-time correlations, stability coefficients for all dependent variables, and all paths among the variables. This model showed adequate fit to the data, $\chi^2(4) = 15.79$, $p < .01$, RMSEA = .10; CFI = .99; SRMR = .02. However, co-brooding nor co-reflection predicted relative changes in depressive symptoms or friendship quality over the two month interval. Only brooding was a positive predictor, with higher levels of brooding predicting relative increases in symptoms of depression. Interestingly, however, when focusing on the separate subscales of the Friendship Qualities Scale, $\chi^2(36) = 84.03$, $p < .001$; RMSEA = .07; CFI = .98; SRMR = .07, co-brooding marginally predicted relative increases in levels of conflict after two months, $\beta = .19$, $p = .06$. In addition, brooding was a significant predictor of prospective conflict and depressive symptom levels, with higher levels of brooding predicting relative increases for both variables, $\beta = .13$, $p = .03$ and $\beta = .10$, $p = .04$, respectively. To gain insight into the unique contribution of co-brooding and co-reflection in the prediction of depressive symptoms and friendship quality, one model was run including only baseline depressive symptoms and friendship quality as predictors, $R^2 = .60$, $p < .001$ for depressive symptoms, and $R^2 = .39$, $p < .001$ for friendship quality. We

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then ran a model in which co-brooding and co-reflection were added as predictors. R^2 did not change for depressive symptoms and did only increase with .004 for friendship quality.

Moderation by gender. Multi-group analyses were performed to investigate whether paths were moderated by gender. Both cross-sectionally and prospectively, Wald's tests of significance suggested that the relations identified between co-rumination components and the total scale of friendship quality applied equally well to boys and girls (cross-sectionally: $\chi^2(1) = .35, p = .55$ for co-brooding path and $\chi^2(1) = .31, p = .58$ for co-reflection path; prospectively: $\chi^2(1) = .58, p = .45$ for co-brooding path and $\chi^2(1) = .11, p = .75$ for co-reflection path). However, different relations were found for boys and girls with regard to associations with depressive symptoms. Cross-sectionally, co-brooding and co-reflection were significant predictors of depressive symptoms in girls, $\beta = .41, p < .001$ and $\beta = -.38, p < .001$, but not boys, $\beta = .01, p = .95$ and $\beta = -.001, p = 1.00$; Wald statistic = $\chi^2(1) = 4.25, p = .04$ and $\chi^2(1) = 4.34, p = .04$. Also prospectively, Wald's test of significance showed the path of co-reflection and co-brooding on depressive symptoms to be significantly different for boys and girls, with $\chi^2(1) = 4.87, p = .03$ and $\chi^2(1) = 4.47, p = .03$, respectively. Co-reflection was a significant predictor of future depressive symptoms in girls, $\beta = -.17, p = .04$, but not in boys, $\beta = .17, p = .20$. Co-brooding was a nonsignificant predictor of depressive symptoms in boys, $\beta = -.18, p = .18$ but reached marginal significance in girls, $\beta = .16, p = .06$. The prospective model for girls is shown in Figure 3. Interestingly, in this model investigating moderation by gender, the effect of brooding did not reach significance anymore in girls, $\beta = .09, p = .13$, neither in boys, $\beta = .09, p = .26$. In the cross-sectional model, however, this factor remained significant, with $\beta = .41, p < .001$ for girls and $\beta = .54, p < .001$ for boys.

An overview of the Wald's test of significance applied on the different paths in the model with five aspects of friendship quality as outcome variables can be found in Table 2. In this model as well, Wald's test of significance suggested no significant differences between boys and girls in the association with friendship quality features. The only difference in findings compared to the model with a total sum score of friendship quality is that the relation between co-brooding and depressive symptoms now did reach significance in girls in the longitudinal model, whereas this relation was only marginally significant when the general measure of friendship quality was included.

Sensitivity Analyses

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To further examine the robustness of our findings, we reran all analyses without the use of log transformed scores on depressive symptoms. Some differences were noticeable compared to the original analyses. First, and most important, in the moderation analyses, Wald's test of significance for moderation by gender suggested no significant differences between boys and girls in the association between co-brooding/co-reflection and prospective depressive symptoms, both in path models including the general measure of friendship quality as in the model including the five separate subscales. In the model including the five friendship quality scales, Wald's test of significance showed the differences between boys and girls in the strength of the relations between co-reflection and depressive symptoms to be marginally significant, $\chi^2(1) = 2.73$, $p \leq .10$. However, coefficients for boys nor girls reached significance, with $\beta = -.07$, $p > .05$ for girls and $\beta = .18$, $p > .05$ for boys. Thus, in analyses without transforming depressive symptoms to be normally distributed, neither for boys, nor for girls, depressive symptoms could be predicted by earlier levels of co-brooding/co-reflection. Second, related to the first research question, the p-value of the relationship between co-brooding and prospective levels of conflict switched from .06 to .05, $\beta = .20$. Third, using the non-transformed depressive symptom variables, brooding did not remain a significant predictor of future depressive symptoms, $\beta = .02$, $p = .71$. All other associations were comparable in the models with and without a log transformation of the depressive symptoms scales.

Additionally, to gain more insight into whether prospective relations between co-brooding/co-reflection and depressive symptoms might be suppressed by the short time interval between both assessment waves, additional prospective analyses were performed in which we excluded the stability paths for friendship quality and depressive symptoms. First, model fit of the model in which the total sum score of friendship quality was used, was acceptable, though the RMSEA was high, $\chi^2(2) = 19.62$, $p < .001$; RMSEA = .17; CFI = .98; SRMR = .03. As opposed to the analyses including stability paths, both co-brooding and co-reflection were significant predictors of future depressive symptoms when performing analyses on the total sample, with $\beta = .27$, $p < .01$ and $\beta = -.27$, $p < .01$, respectively. Also opposed to the model including stability pathways, but in line with cross-sectional results, co-reflection significantly predicted generic friendship quality two months later, $\beta = .21$, $p \leq .05$. Second, model fit of the model in which five friendship quality aspects were included, was acceptable, though the RMSEA

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was high again, $\chi^2(6) = 58.11$, $p < .001$; RMSEA = .17; CFI = .98; SRMR = .04. In this model, co-brooding significantly predicted future levels of conflict, $\beta = .22$, $p \leq .05$ and co-reflection predicted levels of closeness two months later, $\beta = .24$, $p = .02$. Both in the model including a generic measure of friendship quality and in a model including all five subscales, Wald's test of significance showed pathways between co-brooding/co-reflection and depressive symptoms to be true only for girls. No gender differences were established in the strength of the other associations that were found in these models.

Discussion

During the last two decades, more attention has been devoted to the potential trade-offs of excessive problem-talk with a best friend. Co-rumination, or excessively discussing personal problems within a dyadic relationship, has been found to be adaptive for friendship quality, however, maladaptive for emotional well-being (e.g., Rose, 2002; Spindel et al., 2017). In a study of Bastin and colleagues (2014), a parallel was built with the intrapersonal variant rumination, which has been studied as a two-dimensional construct including brooding and reflection as two different components with differential associations with depression outcomes. Within the construct of co-rumination, Bastin et al. distinguished between co-brooding and co-reflection as two different communication styles between same-sex best friends and investigated whether both styles are also differentially related to depressive symptoms. Interestingly, co-brooding was found to be related to higher depressive symptoms after three months, whereas co-reflection predicted lower future depressive symptoms. As this was the only study looking at co-brooding and co-reflection so far, it was subject to multiple limitations. Most importantly, as only depressive symptoms were investigated as an outcome variable, it remained unclear whether the adaptive and maladaptive nature of co-reflection and co-brooding, respectively, would extend to relations with friendship quality as well. Furthermore, no gender differences in the strength of relations had been studied, thereby ignoring the possibility that co-brooding and co-reflection might have differential outcomes in boys and girls.

To address these limitations, the current study included co-brooding and co-reflection as predictors of not only depressive symptoms, but also friendship quality. Relations were investigated both concurrently and prospectively over a 2-month interval. The first research question centered on main effects of co-brooding and co-reflection on depressive symptoms and friendship quality. A second

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aim was to examine whether the strength of the relations between co-rumination components on the one hand and friendship quality and depressive symptoms on the other hand, differed for boys and girls. Not only the generic measure of friendship quality was included as an outcome variable, but also the separate subscales of the Friendship Qualities Scale, including companionship, help, security, closeness, and conflict to increase insight into whether relations might be specific to some but not all friendship quality aspects.

In keeping with the first aim of the study, co-brooding and co-reflection were found to be associated with both depressive symptoms and friendship quality for the total group of participants. Cross-sectionally, co-brooding was predictive of more depressive symptoms. However, its maladaptive nature was noticeable in relation with other variables as well, albeit not reaching full significance. There was a trend for co-brooding to predict relative increases in conflict, the only negative friendship quality aspect included in the study. Higher levels of co-reflection, on the other hand, were concurrently related to lower levels of depressive symptoms and higher levels of friendship quality. When zooming in on the different aspects of friendship quality, positive associations were found for the four positive friendship quality aspects. Prospectively, however, no associations were found between both co-rumination components and symptoms of depression for the whole group.

It is remarkable that co-reflection was predictive of all four positive subscales of the Friendship Qualities Scale, whereas co-brooding was related to the only subscale with a negative connotation. The adaptive versus maladaptive features of co-reflection and co-brooding that had previously been found in the context of depression thus seem to extend to the context of friendship quality. It is surprising, however, that only a concurrent relation was found for co-reflection, whereas (marginally significant) associations between conflict and co-brooding were visible through relative changes over a 2-month interval. We do not have a clear-cut explanation as for why prospective associations with friendship quality were not established for co-reflection. Apart from the possibility that co-reflection is just not predictive of future friendship quality, we believe it might be that the lack of findings is specific to our design. As relations with prospective levels of closeness and the generic measure of friendship quality were found in models that did not take into account the high stability of friendship quality, we believe the short time interval might leave too little variance in friendship quality to be predicted by other

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variables. Future studies including longer time intervals might shed light on this hypothesis. It is further interesting that concurrent relations were found with all four positive friendship quality scales. As previous research on friendship quality included a large body of items related to closeness, we had expected relations with co-reflection to be strongest for this subscale. However, as contrasted to this hypothesis, regression coefficients in concurrent models were not largest for this specific subscale.

The second aim of the study was to investigate whether co-rumination components are related to depressive symptoms and friendship quality in a similar way for boys and girls. Interestingly, whereas the relation between the co-rumination components and friendship quality applied equally well to boys and girls, associations between co-brooding/co-reflection and depressive symptoms varied as a function of gender. Specifically, the link between both components and concurrent depressive symptoms that was found for the whole group, now only seemed to hold in girls. Moreover, whereas no relations were identified between co-rumination components and future depressive symptoms for the whole sample, associations were now observable for girls. That is, for girls, co-reflection was related to a relative decrease in depressive symptoms after two months and co-brooding to a relative increase. The relation between co-brooding and prospective depressive symptoms was most apparent in the model in which all five subscales of friendship quality were included. Below, these differential relations for boys and girls are given more thought. However, caution is needed when drawing conclusions based on these findings, as the longitudinal pathways toward depressive symptoms disappeared for girls in models that did not include the transformed measure of depressive symptoms. Moreover, the effect sizes for relations with co-brooding and co-reflection were rather small.

The link between co-brooding/co-reflection and depressive symptoms seemed to be opposite for both genders, although these relationships did not reach significance for boys. Boys high in co-brooding appeared more likely to report *less* depressive symptoms, with opposite findings for co-reflection. These differences between boys and girls might explain why we did not find co-brooding and co-reflection to predict prospective depressive symptoms for the total group. It is interesting that previous studies also found that the same form of excessively talking about problems (i.e., co-rumination) might have contradictory outcomes for boys and girls (e.g., Bastin, Mezulis, Ahles, Raes, & Bijttebier, 2015; Haggard, Robert, & Rose, 2011). However, these studies investigated co-rumination

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as a unidimensional construct and investigated relations of co-rumination with depressive symptoms within the context of stress. Also Rose, Glick, Smith, Schwartz-Mette, and Borowski (2017) found depressive symptoms to be related to greater peer stress for boys who did not co-ruminate but not for boys who did co-ruminate. However, given that regression coefficients of depressive symptoms did not reach significance for boys in the current study, caution is needed when interpreting our findings.

One might wonder why co-brooding and co-reflection would only be predictive of depressive symptoms in girls, but not boys; a finding that was also reported in Rose et al.'s (2007) prospective study using a total co-rumination score. These authors had a time interval of six months in a sample of youth from third to ninth grade. We believe a possible explanation could be the heightened salience of interpersonal relationships in girls (Rose & Rudolph, 2006). If friendships are more central to girls' self-concept, outcomes of relational processes might be intensified in this group. Another explanation for a stronger relationship between both co-rumination aspects and depressive symptoms in girls might be that girls tend to internalize the way in which they co-ruminate with their friend. That is, they may have the tendency to continue to think about their problems the same way (i.e., intrapersonally) as they used to talk with their friend (i.e., interpersonally). This way, they may set their problem-talk as an example for their individual responses to negative affect. It is possible that girls' dyadic conversations are longer of duration, a finding that has previously been established in children (e.g., Benenson, Apostoleris, & Parnass, 1997) and that this strengthens the internalization of specific conversational responses in girls. Co-brooding in girls may be related to higher brooding levels, thereby extending the focus on negative feelings and problems. As brooding on its own has consistently been associated with depressive symptoms (e.g., Burwell & Shirk, 2007; Treynor et al., 2003; Schoofs et al., 2010), this might be a mechanism by which co-brooding leads to more depressive symptoms in girls. The same might be true for co-reflection. By using the conversation with a best friend as an example, girls might think about their problems in a more adaptive way when they are alone, leading to less depressive symptoms. Future research could examine this hypothesis, using a moderated meditation model.

Given girls' heightened salience of having interpersonal relationships in particular (e.g., Benenson & Benarroch, 1998) and their greater endorsement in connection-oriented goals in general (Rose & Rudolph, 2006), we had expected relationships between co-rumination components and

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friendship quality (aspects) to be especially strong for girls. Put differently, the act of discussing problems with a best friend and the self-disclosure involved was hypothesized to have a stronger impact on the quality of the friendship reported. However, our results suggest that boys may co-brood and co-reflect less than girls do, but *if* they do so, the outcomes are the same with regard to friendship quality. It might be possible that the strength of the relations are not varying by gender, but by other individual difference characteristics, like levels of introversion or one's number of friends. At least, the unexpected finding in the current study seems to suggest that outcomes of co-rumination components that are related to well-being (i.e., depressive symptoms) might be gender-dependent, whereas more relational outcomes (i.e., friendship quality) might be not.

Additional attention must be drawn to some other findings in the present study. First, whereas being predictive of prospective depressive symptoms for the whole sample, brooding did not remain a predictor of symptom levels for girls nor boys when investigating these two groups in multi-group analyses. We believe this might be explained by the reduced number of individuals in each group, thereby decreasing the power of the test. Keeping this in mind, it is remarkable that both co-rumination components did predict symptoms of depression in this model. The finding that only interpersonal rumination, and not intrapersonal rumination, predicted future depressive symptom levels (in girls) was also previously found by Stone et al. (2011) and Bastin et al. (2014) and may be relevant for clinical settings (see below). Second, higher depressive symptom levels were observed for individuals who were excluded from analyses (i.e., individuals not reporting the same best friend at the two different time points, and individuals absent at one of both measurement waves) compared to individuals included in analyses. This could imply that having a stable friendship on its own could act as a protective factor towards depressive symptoms.

Clinical Implications

First, talking about your feelings with someone else is often understood as a process relieving stress and negative feelings (e.g., Taylor, 2006; Turner, 1994). However, research on co-rumination (e.g., Rose, 2002, Hankin et al. 2010, Stone et al., 2011) and more specifically on co-brooding and co-reflection clearly shows that catastrophizing within a friendship and focusing on undesirable, negative feelings and consequences might actually be maladaptive in adolescence (i.e., by increasing the risk of

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depressive feelings (Bastin et al., 2014), as well as increasing conflict in friendships). Therefore, therapists might want to inform female clients about different ways in which one can talk about negative feelings with their best friend and discuss implications for mental health.

The differences between both genders suggest that boys and girls may differ in their pathways towards depression in adolescence. For example, boys may not benefit from therapy focusing on co-rumination components, whereas it could be important for girls to diminish levels of co-brooding, while increasing levels of co-reflection. However, as this is the first study looking into gender differences while studying co-brooding and co-reflection, these findings need to be replicated, especially given that research on the moderating role of gender in the relation between co-rumination and depressive symptoms was found to be mixed.

Finally, our results underscore the value of studying interpersonal brooding and reflection in adolescence. Namely, in girls, co-brooding and co-reflection were predictive of future depressive symptoms, above and beyond levels of intrapersonal brooding and reflection. It is interesting that current prevention and intervention strategies often focus on intrapersonal brooding only and pay less attention to the interpersonal form, which may be as maladaptive. If future studies consistently show interpersonal rumination to predict depression, above and beyond levels of rumination, prevention and intervention strategies might need to pick up on that. In general, these programs might focus on the diminishment of *excessive* discussion of problems and might want to emphasize friends to alternate their talking with other activities (Schwartz-Mette & Rose, 2012). Information on adaptive (i.e., co-reflection) as opposed to maladaptive (i.e., co-brooding) ways of talking about problems can further be provided to adolescent girls and they might be encouraged to talk in more adaptive ways. We further believe mindfulness-based cognitive therapy and mindfulness group training in adolescents (Raes, Griffith, Van der Gucht, & Williams, 2014; Segal, Williams & Teasdale, 2002) might help individuals to become aware of the way in which they talk about problems, to be able to change it to a more adaptive form of problem-talk.

Strengths and Limitations

The current study benefits from several strengths including the inclusion of both friendship quality and depressive symptoms as outcomes, in contrast to many studies including only one of both (Rose, Schwartz-Mette, Glick, & Smith, 2013). Moreover, both outcomes are investigated in the context

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of the same stable friendship. However, some limitations of this study should be noted as well. First, because we wanted to investigate relative changes in levels of friendship quality based on levels of co-brooding and co-reflection, only individuals reporting the same best friend at the two different time points (i.e., also being the person on which they based their answers) were included in the analyses. Because of this, individuals reporting no friends, unstable friendships, and individuals that dropped out were excluded from our study. Future studies should also use a sample of reciprocated friends only, for example by making use of snowball designs to maintain a high number of reciprocal dyadic best friendships. Given the design of our study (i.e., an open best friend nomination, with no requirement that the friend be in the same school), this could not be performed in the current study. Another consequence of the design, in which we chose to only include same-sex best friendships, is that no conclusions can be drawn upon relations between study variables for opposite-sex best friendships. It would be interesting to find out whether depression outcomes might differ for boys and girls in a same friendship dyad as well.

Second, the self-report measures of co-brooding and co-reflection used in this study might lead to shared method variance and might not reflect actual behaviour. Observational data in future research may prove useful in providing a more objective way of measuring co-brooding and co-reflection (e.g., Rose, 2002). It might also provide greater insight into the specific processes of co-brooding and co-reflection.

Third, although the inclusion of friendship quality subscales might increase insight into specific relations with our variables of interest, alphas were rather poor for companionship and conflict. Caution is thus needed when drawing conclusions based on relations with both constructs. Future research might benefit from including other measures of friendship quality with better internal consistency.

Fourth, to strengthen knowledge on outcomes of co-brooding and co-reflection in the short run, the current study had a follow-up period of two months. Given that this study provides additional evidence for co-brooding and co-reflection predicting relative changes in depressive symptoms for girls, we believe it might be interesting for future studies to investigate co-brooding and co-reflection outcomes while including longer time intervals, for instance intervals of one year and longer. Also, given the high stability of the variables in the study, it would be valuable to work with a longer follow-

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up period, as this would leave more room for co-brooding and co-reflection to predict additional variance of depressive symptoms and friendship quality and this could increase knowledge on the robustness of previous findings. It is interesting that relations between co-brooding/co-reflection and prospective depressive symptoms and friendship quality (conflict/closeness, respectively) were found in a model in which stability paths were left out of the model. These results suggest co-brooding and co-reflection to be associated to those aspects of depressive symptoms and friendship quality that are rather stable over time and that prospective relations might be expected in other samples using larger time intervals.

Fifth, the current study included a rather large age group from 9 to 17 years old. It would be interesting for future studies to include more individuals in each age group to be able to investigate moderation by age as well, or to focus on smaller age ranges to be able to draw conclusions referring to specific ages. Unfortunately, the current design did not give us enough power to perform such moderation analyses. By including age as a covariate in the analyses, we only took into account that part of the variance in depressive symptoms and friendship quality that can be explained by age. However, it is possible that co-brooding and co-reflection would be more strongly associated with our outcome variables in older versus younger adolescents, as peers gain in importance as conversation partners when individuals get older.

Sixth, a strong positive correlation was established between co-brooding and co-reflection, indicating a strong overlap between both. This overlap might reflect a strong tendency of someone to engage in perseverative thinking, thereby preventing individuals to properly engage with and interact with what is going on (Bastin et al., 2014). Future research might try to enlarge this distinction between co-brooding and co-reflection by creating new items or by rephrasing some of the original CRQ items.

Finally, given that we used a community sample, results may not generalize to clinical depression. Future research could benefit from examining co-brooding and co-reflection in clinical samples.

Conclusion

The present study extends research on co-rumination, and particularly on co-brooding and co-reflection, by showing that both components are differentially related to both depressive symptoms and friendship quality. Co-brooding showed maladaptive features by predicting more depressive symptoms

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for girls, both cross-sectionally and prospectively. Co-reflection on the other hand was adaptive, with higher co-reflection predicting less depressive symptoms in girls, both cross-sectionally and prospectively, and higher concurrent friendship quality (i.e., companionship, help, security, and closeness) for boys and girls. Our results underscore the value of studying interpersonal brooding and reflection and suggest that boys and girls may differ in this context in their pathways towards depression.

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Table 1

Means, standard deviations, and intercorrelations for all variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. Co-brooding T1	-																		
2. Co-reflection T1	.86***	-																	
3. Brooding T1	.35***	.29***	-																
4. Reflection T1	.32***	.34***	.53***	-															
5. Depr Symptoms T1	.24***	.14*	.59***	.37***	-														
6. FQ Total T1	.26***	.32***	.08	.16*	-.03	-													
7. Help T1	.29***	.33***	.11	.17**	.00	.87*	-												
8. Security T1	.22***	.31**	.07	.17**	-.06	.88***	.74***	-											
9. Closeness T1	.31***	.36***	.11	.21***	.04	.84***	.67***	.72***	-										
10. Companionship T1	.24***	.26***	.06	.10	.04	.73***	.60***	.51***	.60***	-									
11. Conflict T1	.07	.05	.05	.04	.14*	-.51***	-.27***	-.37***	-.24***	.15*	-								
12. Depr symptoms T2	.17**	.11	.47***	.31***	.77***	-.16**	-.08	-.19**	-.09	-.11	.17**	-							
13. FQ Total T2	.15**	.19***	-.01	.11	-.06	.63***	.57***	.60***	.50***	.42***	-.33***	-.18**	-						
14. Help T2	.17**	.20***	.01	.11	-.01	.58***	.60***	.56***	.44***	.34***	-.23***	-.11	.90***	-					
15 Security T2	.17**	.21***	.02	.12*	-.01	.53***	.49***	.54***	.40***	.32***	-.24***	-.13*	.90***	.78***	-				
16. Closeness T2	.19***	.23***	.07	.16**	-.02	.55***	.47***	.53***	.55***	.32***	-.22***	-.10	.87***	.74***	.75***	-			
17. Companionship T2	.22***	.24***	.02	.11*	-.02	.56***	.49***	.45***	.44***	.59***	-.18**	-.10	.78***	.68***	.63***	.68***	-		
18. Conflict T2	.22***	.17**	.19***	.11*	.22***	-.22***	-.12*	-.19**	-.07	-.05	.43***	.28***	-.41***	-.21***	-.28***	-.16**	-.06	-	
19. Age	.08	.03	.02	-.01	.06	.17**	.28***	.08	-.06	.20**	-.14*	.08	.19***	.24***	.19***	.03	.25***	-.03	
<i>M</i>	2.74	2.85	10.02	8.68	9.22	92.79	20.96	20.62	20.86	14.83	8.50	7.93	87.67	19.66	19.50	19.18	13.93	8.59	

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<i>SD</i>	.83	.83	3.18	2.71	6.38	12.34	3.54	3.47	3.16	2.83	2.83	7.03	14.50	4.32	3.89	3.93	3.09	3.13
<i>M</i> girls	2.94	3.10	10.58	9.41	9.92	97.06	22.07	21.87	21.89	15.34	8.18	8.39	93.97	21.41	21.20	20.98	14.82	8.41
<i>M</i> boys	2.53	2.59	9.45	7.95	8.51	87.80	19.67	19.16	19.65	14.23	8.87	7.46	81.21	17.89	17.77	17.35	13.02	8.78
<i>t</i> -test (df)	4.42***	5.58***	3.16**	4.93***	1.97*	6.45***	5.67***	6.62***	5.91***	3.19**	1.95*	1.18	8.59***	7.82***	8.64***	9.14***	5.33***	1.03
	(311)	(311)	(311)	(311)	(298.24) ^a	(254)	(234.60) ^a	(214.16) ^a	(212.31) ^a	(256)	(255)	(309)	(289.36) ^a	(287.99) ^a	(297.45) ^a	(288.65) ^a	(309)	(309)

Note. T1 = Baseline; T2 = Follow-up; FQ = Friendship Quality; Depr = Depressive. Co-brooding and Co-reflection = 12 items of the Co-Rumination Questionnaire (CRQ); Brooding and Reflection = the Children's Response Styles Questionnaire – extended version (CRSQ-ext); Depr symptoms = the Children's Depression Inventory (CDI); FQ Total, Help, Security, Closeness, Companionship, and Conflict = the Friendship Qualities Scale (FQS).

^a *t*-test adjusted for unequal variances across gender

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

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Table 2

Wald's test of significance for each path of the model where five subscales of the Friendship Qualities Scale and depressive symptoms are included as outcome variables. Standardized regression coefficients for boys and girls are presented for significant Wald's tests

	Cross-sectionally			Longitudinally		
		girls	boys		girls	boys
	$\chi^2(1)$	β	<i>B</i>	$\chi^2(1)$	β	β
Paths with co-brooding						
Closeness	.51			.53		
Companionship	.02			.44		
Help	.62			.28		
Security	.43			.75		
Conflict	.00			.09		
Depressive symptoms	4.58*	.41***	-.01	4.26*	.16*	-.16
Paths with co-reflection						
Closeness	.34			.06		
Companionship	.24			.14		
Help	.10			.11		
Security	.34			.24		
Conflict	.07			.23		
Depressive symptoms	4.65*	-.38***	.01	4.51*	-.17*	.16

Note. Closeness, Companionship, Help, Security, and Conflict = the Friendship Qualities Scale (FQS); Depressive symptoms = the Children's Depression Inventory (CDI); Co-brooding and Co-reflection = 12 items of the Co-Rumination Questionnaire (CRQ).

* $p \leq .05$; *** $p < .001$.

CO-BROODING AND CO-REFLECTION AS DIFFERENTIAL PREDICTORS

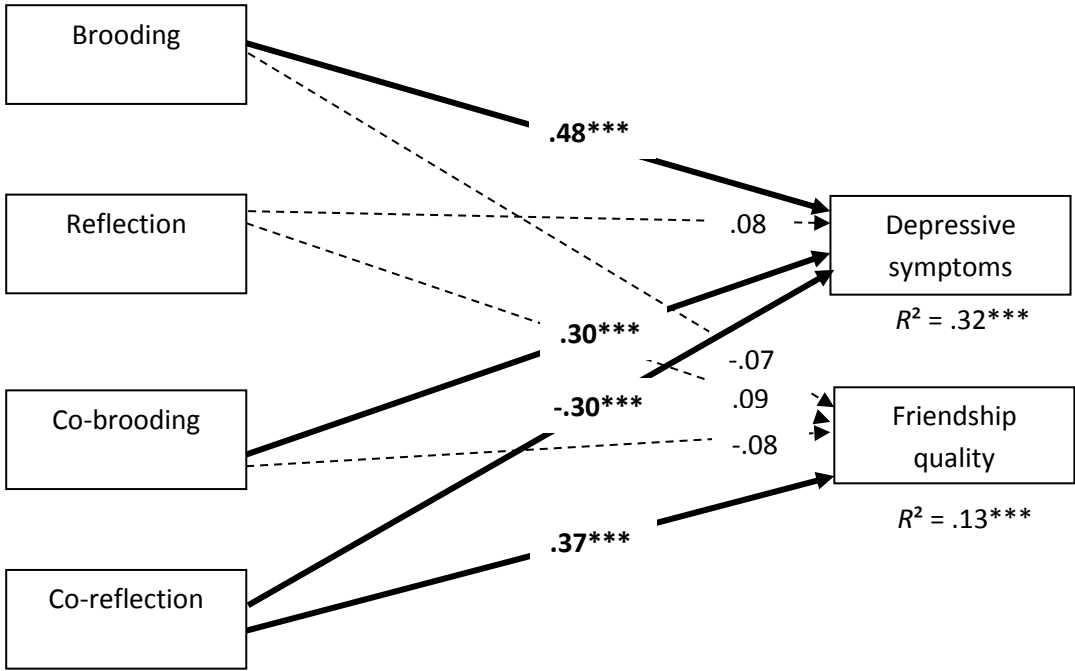


Fig. 1 Cross-sectional path model with significant standardized path coefficients. Age was added as a control variable. Dashed lines represent nonsignificant paths. Within-time correlations were included in the model, but are not presented for reasons of clarity

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

CO-BROODING AND CO-REFLECTION AS DIFFERENTIAL PREDICTORS

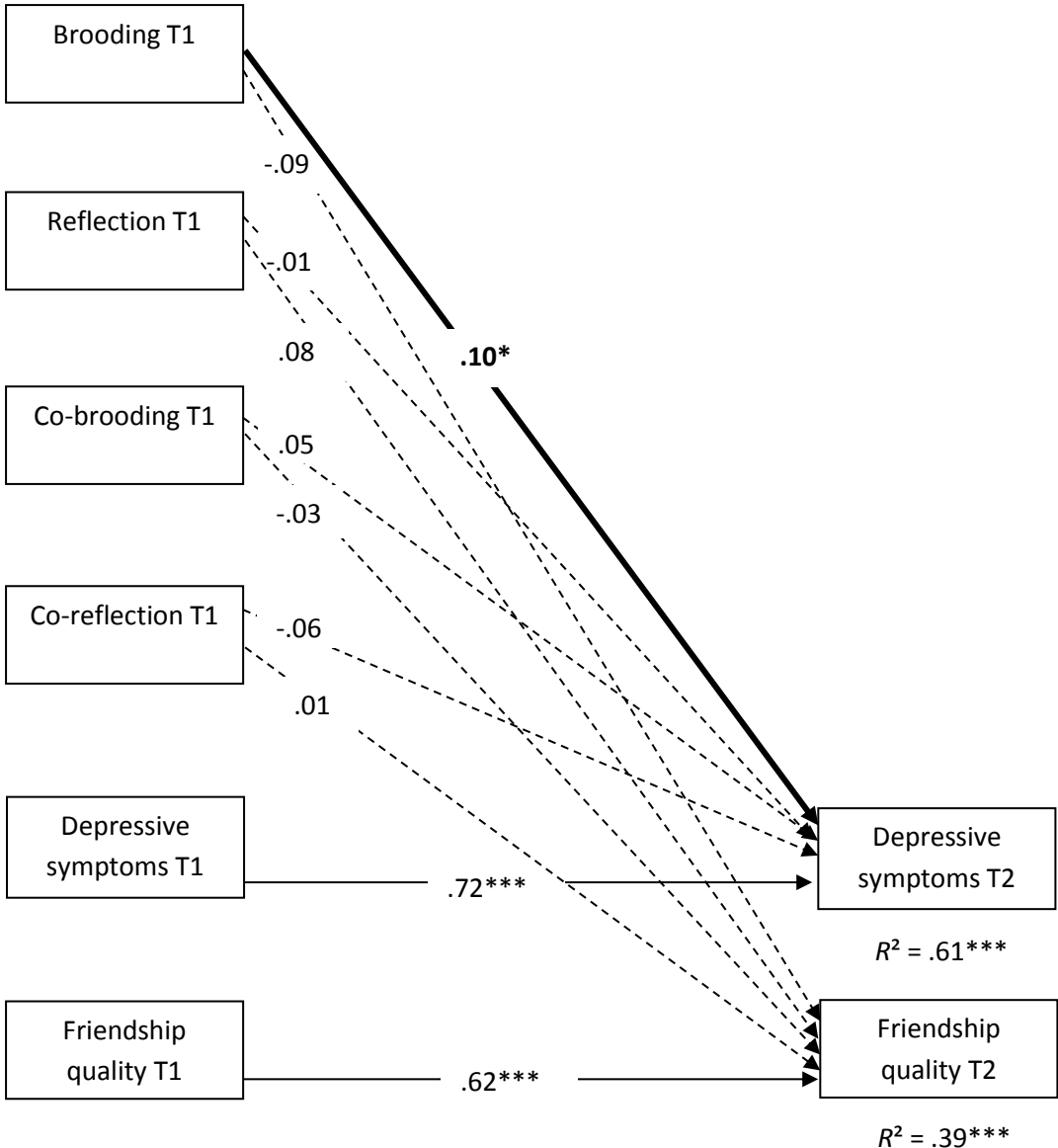


Fig. 2 Path model with significant standardized path coefficients across two measurement waves. Age was added as a control variable. Dashed lines represent nonsignificant paths. Within-time correlations at T1 and T2 are not presented for reasons of clarity. T1 = Time 1

* $p < .05$, *** $p < .001$

CO-BROODING AND CO-REFLECTION AS DIFFERENTIAL PREDICTORS

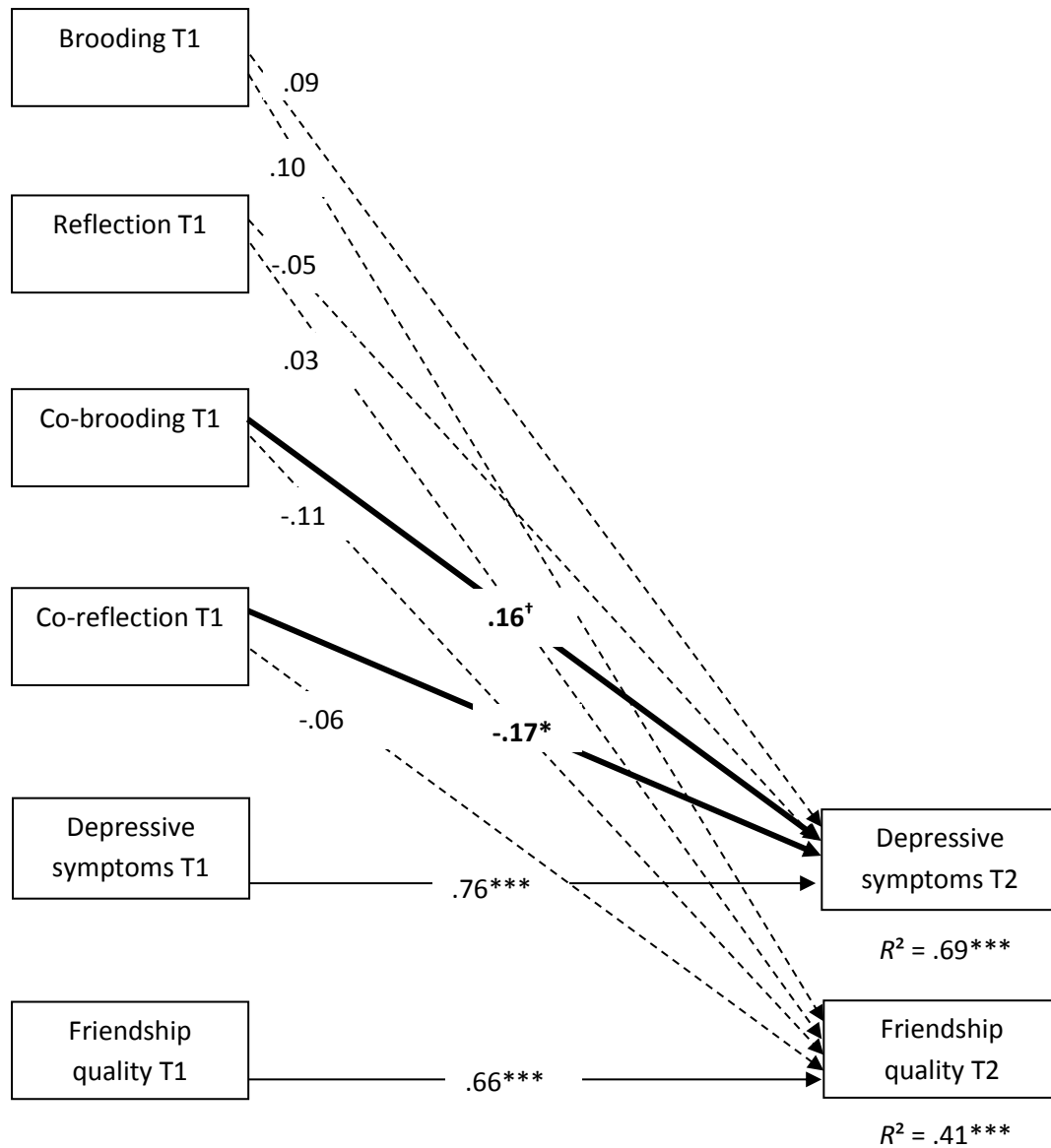


Fig. 3 Path model for girls with significant standardized path coefficients across two measurement waves. Age was added as a control variable. Dashed lines represent nonsignificant paths. Within-time correlations at T1 and T2 are not presented for reasons of clarity. T = Time

[†] $p = .06$, * $p < .05$, ** $p < .01$, *** $p < .001$