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Parent Relationships and Adolescents' Depression and Social Anxiety: Indirect Associations  
via Emotional Sensitivity to Rejection Threat

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Published in Australian Journal of Psychology

### Abstract

One prominent theory has proposed that rejection and other negative parenting practices prompt children's emotional sensitivity to the threat of rejection, often referred to as *rejection sensitivity* (RS). This emotional sensitivity is thought to result in social and emotional maladjustment. In the present study, we tested this model of parenting, emotional sensitivity and maladjustment with 659 early adolescents (aged 9 to 13). The findings confirmed that adolescents who reported more negative parenting practices had elevated depression and social anxiety symptoms, heightened levels of RS, and more elevated sadness and withdrawal responses to rejection threat. In a final structural equation model, RS and withdrawal were uniquely associated with depressive symptoms, and RS, sadness and withdrawal were uniquely associated with social anxiety. Moreover, negative parenting had significant associations with symptoms both directly and indirectly via RS, sadness and/or withdrawal, with the effects mostly direct for depressive symptoms and mostly indirect for social anxiety symptoms. Interparental conflict was also implicated in adolescents' RS, reactions to rejection threat, and symptoms, but these correlational effects were almost entirely indirect via parenting practices. An alternate model of depression and anxiety predicting sensitivity to rejection threat was tested and found to be equally viable. The findings provide a more nuanced understanding of the links between rejection and adolescent emotional adjustment.

Key words: anxiety, depression, conflict, parenting, rejection sensitivity

## **Parent Relationships and Adolescents' Depression and Social Anxiety: Indirect Associations via Emotional Sensitivity to Rejection Threat**

Significant numbers of children and adolescents suffer from elevated symptoms of depression and social anxiety (Epkins & Heckler, 2011; Johnson & Greenberg, 2013). Such symptoms, even when only slightly elevated relative to their peers, can be critical warning signs, as youths with sub-clinical depressive and socially anxious symptoms are similar to those with diagnosed depression and social anxiety disorder in terms of their psychosocial dysfunction and future risk of mental health concerns (Angold, Costello, Farmer, Burns & Erkanli, 1999; Avenevoli, Knight, Kessler, & Merikangas, 2008).

In charting the aetiology of children's anxiety and depression a wealth of research has focused on childrearing practices and familial conflict (McLeod, Weisz, & Wood, 2007; McLeod, Wood, & Weisz, 2007; Rapee, 1997). Indeed, as depression and social anxiety disorders can be said to be at least partly interpersonal in nature, it is easy to argue that symptoms in children and adolescents may be linked to experiences in the home environment and relationships with parents. For example, children's parenting experiences and the amount of interparental conflict they witness in the home have long been associated with maladjustment in childhood, and indeed, across the lifespan. Specifically, negative parenting behaviours, such as rejection and coercion, have been linked to an array of behavioural and socioemotional difficulties, including anxiety and depression (Coln, Jordan, & Mercer, 2013; Rapee, 1997; Rohner, Khaleque, & Cournoyer 2005). Parental factors of interest when considering depressive and socially anxious symptoms include hostility, coercion, rejection, support, warmth, overprotection, psychological control and parental conflict. Although results are not always consistent across studies, these aspects of parenting have all been associated with childhood/adolescent depression and/or social anxiety (see Epkins & Heckler, 2011 for a review). Likewise, interparental conflict has been associated with emotional

maladjustment among children, with demonstrated links to major depressive disorder, depressive symptoms, anxiety, alcohol abuse, dependency problems, reduced self-esteem and loneliness (Johnson, LaVoie, & Mahoney, 2001; Papp, 2012; Rhoades, 2008)

Theoretical models identify why parents and conflict in the home might play roles in children's development of depressive and social anxiety symptoms (Epkins & Heckler, 2011; Rohner, 1975; Skinner, Johnson, & Snyder, 2005). In one such model, rejection sensitivity (RS), defined as the tendency to overly expect, readily perceive and overreact to social cues portraying real or implied rejection (Downey & Feldman, 1996; Feldman & Downey, 1994), has been argued to explain why rejection and conflict experiences yield increasing levels of emotional maladjustment among children, adolescents and adults. As shown in Figure 1, the RS Model identifies how experiences of rejection result in greater expectations of more rejection in the future (Link 1). Situations in which rejection is possible activate this heightened threat anticipation, resulting in readily perceiving rejection even in innocuous social cues (Link 2). This overperception of rejection leads to maladaptive emotional responses, such as sadness and anger (Link 3), in addition to maladaptive behavioural reactions, such as social withdrawal and aggression (Link 4).

The main objective of the current study was to test portions of this RS Model by investigating associations of parenting and interparental conflict with early adolescents' emotional maladjustment (depressive and social anxiety symptoms) and to identify whether these associations were indirect via their RS and their emotional and behavioural reactions to rejection threat. We anticipated that RS, sad reactions to rejection threat, and withdrawal as a response to rejection threat would each add to our understanding of why children's negative family relationship experiences may covary with their heightened emotional maladjustment.

#### **Associations of Parenting with Adolescents' Maladjustment via Rejection Sensitivity**

**Parenting as a correlate of adolescents' emotional maladjustment.** There are many reasons to expect that parental rejection and witnessing interparental conflict would be foundations of RS. Beginning even before Bowlby (1969), who proposed that children develop cognitive models about themselves and others based on early caregiving experiences, research has demonstrated that family experiences, particularly parenting behaviours, affect children's mental health outcomes and their interpersonal functioning in later life. Parental rejecting behaviour, specifically, has been highlighted as significant by some of the earliest researchers interested in the quality of parenting and consequent socio-emotional development (Newell, 1934; Rohner, 1975; Symonds, 1938), with implied or overt rejection playing a significant role in children's problem behaviours, both externalising and internalising (Feldman & Downey, 1994). Rohner and colleagues suggest that in excess of 2000 studies exist in this area (many directly inspired by his Parental Acceptance-Rejection theory: PARTheory), demonstrating a link between parental rejection and various indicators of maladjustment, including aggression, conduct problems, substance abuse, poor emotion regulation, mental ill-health, depression, suicidality, self criticism, and feelings of low self worth (Campos, Besser, & Blatt, 2013; Chang, Schwartz, Dodge, & McBride-Chang, 2003; Downey, Lebolt, Rincon, & Freitas, 1998; Dwairy, 2010; Khaleque & Rohner, 2002).

**Parenting, rejection sensitivity and adolescents' emotional maladjustment.** RS also seems to have far-reaching negative implications for adjustment. RS has been associated with many forms of maladjustment. Maladjustment has been operationalised in various ways in these studies, including the study of relationship dissatisfaction/insecurity, hostility and jealousy (Downey & Feldman, 1996); depressive symptoms (Ayduk, Downey, & Kim, 2001; Zimmer-Gembeck & Vickers, 2007); aggression and relationship violence (Downey, Feldman, & Ayduk, 2000); decline in academic functioning, distress, aggression, defiance, victimisation and interpersonal difficulties in children (Downey, Freitas, Michaelis, &

Khouri, 1998; Downey, Khouri, & Feldman, 1997); girls' relationship insecurity and vulnerability (Purdie & Downey, 2000); and withdrawal and retribution (Zimmer-Gembeck & Nesdale, 2013).

Although there is an accumulating body of research on the negative outcomes of high RS, whether RS has an origin in family relationships is less well understood. In fact, to our knowledge, only five studies have examined the family origins of RS, despite the fact that Downey and Feldman (1994) initially described RS as an 'internalised legacy of early rejection experiences' (p. 232). Three of these studies relied on retrospective reporting of childhood experiences. Feldman and Downey (1994), in their first study on the construct of RS, found university students exposed to parental rejection as children, in the form of abuse, had higher levels of RS. In a second, subsequent study, Downey and colleagues (Downey, Khouri, & Feldman, 1997) reported similar results, finding young adults' levels of RS to be higher when they retrospectively reported higher levels of parental neglect in childhood. Cardak, Saricam, and Onur (2012) supported these findings in their study with Turkish university students.

The remaining two studies did not rely on retrospective reports about childhood. The first examined RS and parenting in a sample of 141 predominately low socio-economic African American 5<sup>th</sup>-7<sup>th</sup> graders (Downey, Lebolt, & Rincon, 1995). Concordant the RS model, those children who reported more experiences of parental rejection had relatively elevated RS in the subsequent year. In the second study, McLachlan, Zimmer-Gembeck and McGregor (2010) found an association between parental rejection and RS, with RS being highest when peer rejection was high and parental acceptance low. Hence, one aim of the current study was to expand upon these two previous studies by examining not only parental rejection but other negative aspects of parenting as correlates of RS and emotional maladjustment.

### **Interparental Conflict**

Moreover, we also considered family conflict by examining whether children's witnessing of interparental conflict is a unique correlate of both negative parenting and RS or whether the association of interparental conflict with RS is indirect via parenting practices. It is possible that the climate of the home, in particular the quality of parents' own relationship with each other, may be important to consider when investigating parenting and children's emotional maladjustment. For example, children's witnessing of interparental conflict is a known correlate of their internalising and externalising problems (Barletta & O'Mara, 2006; Buehler et al., 1997; Rhoades, 2008). However, previous research seems to demonstrate that the effect of interparental conflict on children's adjustment is indirect via parenting practices and other factors such as appraisal styles (Grych, Fincham, Jouriles, & McDonald, 2000; Shelton and Harold, 2007; Turner & Kopiec, 2006; Zimet & Jacob, 2001). For example, it has been proposed that spillover from interparental conflict to parenting occurs because parents are unable to compartmentalize their relationship stress from their roles as parents, with the conflict spilling-over into rejecting and coercive behaviours with children (Krishnakumar & Buehler, 2000; Zimet & Jacob, 2001). Thus, in the present study, an additional aim was to examine whether interparental conflict has a direct association with parenting practices and an indirect association with RS via these practices. Children's witnessing of interparental conflict has not been assessed in relation to their RS; the current project is therefore unique in its aim to assess childhood symptoms of depression and social anxiety in relation to parenting and interparental conflict via RS.

### **Emotional and Behavioural Responses to Rejection Threat: Sadness and Withdrawal**

In the present study, negative parenting practices were expected to be indirectly associated with early adolescents' emotional maladjustment via their RS. Extending on this, it was anticipated that interparental conflict would also play a role by having a direct effect on

parenting practices and an indirect effect on RS. However, other components of the RS Model raise the possibility that parenting practices would also yield elevations in negative emotional and behavioural reactions to rejection threat, which would add to the understanding of children's emotional maladjustment. According to RS theory, a high expectation of rejection in social situations, and the corresponding compulsion to avoid rejection, can result in social withdrawal, worry, distress and sadness following the perceived threat of rejection (Ayduk, Downey, & Kim, 2001; Downey & Feldman, 1996; Downey et al., 1998; London, Downey, Bonica & Paltin, 2007; Zimmer-Gembeck & Nesdale, 2013). As such, we expected that the expectation of rejection (i.e., RS) would explain why rejecting and coercive parenting practices have been associated with elevated symptoms in children, but also anticipated that emotions and behaviours that occur when children are faced with rejection threat (sad and withdrawn reactions to rejection threat) would be other unique factors that would help to explain why parenting can have negative implications for children's emotional adjustment. Thus, we expected that associations of parenting with children's emotional adjustment would be indirect, working through children's RS and their reactions of sadness and withdrawal when faced with rejection threat.

### **Study Aims and Hypotheses**

Research on parenting practices and conflict between parents has highlighted the immensely complex nature of the relationship between family experiences and children's maladjustment; a relationship involving a complicated system of interactions and mediating variables (Rapee, 1997; Shelton & Harold, 2007; Vazsonyi & Belliston, 2006). As described in the RS Model, RS is a core emotional sensitivity to rejection threat that is expected to develop from social experiences of rejection. Moreover, the RS Model and associated empirical research distinguish RS as one mechanism that can explain why adverse parenting experiences are associated with depressive or anxious symptomologies in childhood and

adolescence. In the present study, we tested these hypotheses and anticipated that parenting practices that communicated or implied rejection would be associated with elevated symptoms of depression and social anxiety among early adolescents. The parenting practices that were measured included rejection, coercion and psychological control. In order to enhance our understanding of the parenting experienced by the participants, measures of parental warmth and autonomy support were also included. Expanding the typical RS Model, associations between negative parenting practices and emotional maladjustment were also expected to be indirect via adolescents' emotional reaction of sadness to rejection threat, and behavioural reaction of withdrawal in response to rejection threat. Moreover, we also considered interparental conflict in this model, expecting that it would have associations with adolescents' RS, sadness and withdrawal (and, in turn, emotional maladjustment), but that these would be fully indirect via parenting practices.

Finally, because theories suggest reciprocal relations between emotional sensitivities related to social situations and symptoms of depression and social anxiety (Hammen, 2005; Rudolph et al., 2000; Zimmer-Gembeck, Hunter, Waters, & Pronk, 2009), we also tested an alternative model. In this model, adolescents' symptoms were tested as the predictors of their emotional sensitivity (i.e., their RS and reactions of sadness and withdrawal to rejection threat), rather than the converse associations that were tested in the primary models. Overall, by investigating these associations with cross-sectional data, our general purpose was to provide a clearer picture of the links between familial experiences and early adolescent emotional adjustment, necessary to tailor interventions.

## **Method**

### **Participants**

A total of 649 pupils, from three Australian primary schools participated in the study. Almost equal numbers of boys and girls (51% and 49%, respectively), in grades 5, 6 and 7,

with an age range of 9-13 ( $M = 11$ ,  $SD = 1$ ) participated. White Australians made up 90% of the sample, with the remaining 10% describing themselves as Aboriginal Australian, Maori, Pacific Islander or other sociocultural backgrounds. School-level data showed the families were in the low-middle income bracket. Data from parents indicated that 27% of mothers and 28% of fathers had not completed high school, whereas 19% of mothers and 11% of fathers had a university degree. Seventy-five percent of parents reported that they were married to the other biological parent of the participating child. All participants had parental consent and agreed to participate in the study. The consent rate was just over 70%.

## Measures

**Rejection sensitivity.** An abridged version of the Children's Rejection Sensitivity Questionnaire (CRSQ; Downey, Lebolt & Rincorn, 1995) was used to measure RS. The measure contained 6 scenarios that evoked rejection threat (*"Imagine that a famous person is coming to visit your school. Your teacher is going to pick five kids to meet this person. You wonder if she will choose YOU"*). After each vignette, two questions assessed RS-anxiety (*"How nervous would you feel about whether or not your teacher will choose you?"*) and RS-anger (*"How MAD/ANGRY would you feel about whether or not your teacher will choose you?"*) about the outcome of the situation. Possible responses ranged from 1 (*not nervous/mad at all*) to 5 (*extremely nervous/mad*). Participants were then asked to report the likelihood of being accepted or rejected (RS-expectation; e.g., *"Do you think the teacher will choose you?"*), with possible responses ranging from 1 (*No!*) to 5 (*Yes!*).

As recommended by the scale authors, the CRSQ was scored by reversing the response to the expectation item then multiplying this by the nervous/anxiety or mad/anger item (Feldman & Downey, 1994). An overall RS anxious and RS angry score was calculated by averaging the scores for each vignette. Finally, anxious and angry expectation scores were

summed to form a Total RS score. Higher scores indicated more rejection sensitivity, Cronbach's  $\alpha = .79$ .

**Sadness and withdrawal as responses to rejection threat.** In order to determine participants' other responses to the threat of rejection, the Students' Reactions to Rejection Scale (SRRS; Nesdale & Zimmer-Gembeck, 2009) was used. Two scenarios (e.g., "*Imagine that you hear that someone you hang out with is throwing a big birthday party. Most of your group of friends expect to go. You hear that some of your friends have received their invitations and they are excited! You still have not received your invitation and the party is not far off*") were used to measure: how sad participants would feel in response to this potential rejection (one item; e.g., '*Would you feel sad?*'), and their degree of withdrawal (8 items; e.g., '*go off to be by yourself*'). Responses were measured on a 5 point scale from 1 (*not at all*) to 5 (*very much*). Withdrawal scores were computed by averaging item scores for each response within each scenario and then averaging across the two scenarios. Higher scores correspond to higher levels of withdrawal response, Cronbach's  $\alpha = .88$ . Sad emotional reactions were averaged across the two scenarios to form a total score. The two items were highly correlated with each other,  $r = .51, p < .01$

**Parenting.** Participants' perception of their parents' parenting was assessed, in part, with the Parents as Social Context Questionnaire (PSCQ; Skinner, Johnson, & Snyder, 2005). Four subscales, of four items each, were used: rejection (*Sometimes I wonder if my parents like me*,  $\alpha = .72$ ), coercion (*My parents are always telling me what to do*,  $\alpha = .76$ ), warmth (*My parents let me know they love me*,  $\alpha = .78$ ) and autonomy support (*My parents accept me for myself*,  $\alpha = .73$ ). Responses ranged from 1 (*Not at all true*) to 5 (*Very true*). Total scores were obtained by averaging items on each subscale.

Psychological control was measured using 5 items from the Psychological Control Scale – Youth Self Report (PCS-YSR; Barber, 1996). For the purpose of this study, the PCS-

YSR response format was adapted from a 3- to a 5- point scale (to match the PSCQ), described above. An example item is: '*My parents are always trying to change how I feel or think about things.*' Total scores were obtained by averaging the items,  $\alpha = .67$

**Interparental conflict.** Interparental conflict witnessed by the respondents was measured with five questions from The Children's Perceptions of Interparental Conflict Scale (e.g., '*My parents say mean things to each other*') (CPIC; Grych, Seid, & Fincham, 1992). The response format was adapted from a 3-point scale to a 5-point scale to match the response options on other measures (1 - *Not at all true* to 5 - *Very true*). Total scores were obtained by averaging the items,  $\alpha = .87$ .

**Depressive symptoms.** The 10-item short form of the Children's Depression Inventory (CDI; Kovacs, 1985) was used to assess depressive symptoms. Participants were asked to choose one of three statements, which most applied to them in the last two weeks, for each item. For example: 1. *I was never sad, or only sad once in a while*, 2. *I was sad many times*, 3. *I was sad all the time*. A total depressive symptoms score was obtained by summing the responses to the items,  $\alpha = .82$ .

**Social Anxiety.** Social anxiety was measured with 14 items from the Social Anxiety Scale for Children – Revised (SASC-R; La Greca, & Stone, 1993). Each item had five responses options ranging from 1 (*Not at all true*) to 5 (*Very true*) tapping fear of negative evaluation ('*I worry what other kids think of me*'), inhibition in novel social contexts ('*I get nervous when I talk to kids I don't know very well*') and inhibition in known social contexts ('*I feel shy even with kids I know very well*'). Scores were obtained by averaging items within the three subscales and then averaging the scores for the three subscales,  $\alpha = .90$ .

## Procedure

Following approval of this study by the University Human Subjects Review Committee, parental consent was sought for students in relevant grades in participating

schools. Students also assented prior to completing a questionnaire in their regular classrooms under the supervision of researchers. Questionnaires were read aloud, while students provided their answers. Participants were offered debriefing and were given small school-related gifts, as were the teachers and the schools.

## Results

### **Preliminary Analyses**

Because parametric techniques were used to analyse the data, normality of variable distributions and outliers were examined prior to conducting further analyses. All variable distributions, except sad reactions to rejection threat, had significant skew. To examine the possible effect of this on the results, the three with the greatest skew, which included withdrawn reactions to rejection threat (1.49), depressive symptoms (1.47), and positive parenting (-1.42) were log transformed (following reflection for positive parenting). Skew was reduced substantially. However, when correlations using transformed variables were compared to correlations using untransformed data, differences were very small (.00 to .01 in almost all cases, with the largest difference of .03). No outliers were found. Thus, untransformed variables were used and all participants were maintained in all analyses.

### **Correlations**

As expected, all measures were intercorrelated. Consistent with the proposed model, adolescents who reported more negative parenting also reported witnessing more interparental conflict, and each of these measures was associated with more emotional sensitivity (higher RS and elevated sadness and withdrawal in response to rejection threat; see Table 1). Also, higher reported levels of RS and elevated sad and withdrawal responses to rejection threat corresponded to higher levels of depressive and social anxiety symptoms and social anxiety. The three measures of emotional sensitivity were also intercorrelated with each other, with adolescents higher in RS also responding to rejection threat with more

sadness and withdrawal. Finally, depressive and social anxiety symptoms were positively associated with each other.

#### Overview of the Structural Models and Gender Differences

A series of structural equation models were fitted to the data to test the study hypotheses further. In the first two models we tested only the direct associations (Model 1) and both the direct and indirect associations (Model 2) of parenting practices, RS, and emotional and behavioural reactions to rejection threat with children's depressive and social anxiety symptoms. To consider interparental conflict, the next model (Model 3) tested the associations of interparental conflict with RS, reactions to threat, and emotional maladjustment. Following this, we incorporated parenting practices and interparental conflict into a single model to test the direct and indirect associations of each aspect of family relationships with RS, responses to rejection threat and emotional maladjustment (Model 4). Lastly, an alternate model of depression and anxiety predicting sensitivity to rejection threat was tested.

Given the high intercorrelations between the multiple measures of parenting we used, we modelled parenting as a latent construct, labelled *negative parenting*, in all models. Three measures were used as indicators of negative parenting. The loadings of these measures on the latent construct of negative parenting were .87 for the composite score of rejection and coercion (negative parenting), -.63 for the composite score of warmth and autonomy support (positive parenting), and .66 for psychological control. Throughout this section, we report standardised path coefficients.

Gender was allowed to covary with all measures in each model. Independent t-tests confirmed there were no gender differences in depressive symptoms, rejection sensitivity, and withdrawal in response to rejection threat. However, girls reported more sadness in

response to rejection threat,  $t(640) = -9.11, p < .001, \eta^2 = .12$ , and more symptoms of social anxiety  $t(640) = -3.90, p < .001, \eta^2 = .02$ .

#### Direct and Indirect Associations of Parenting Practices with Emotional Maladjustment

**Model 1: Direct effects of negative parenting.** In the first structural model, we freed paths from negative parenting and the proposed mediators (RS, sad reaction, and withdrawal) to depressive and social anxiety symptoms. This model did not provide a good fit to the data,  $\chi^2(15) = 150.50, p < .001, CFI = .92, RMSEA = .113$  (90% CI .097 – .129),  $p < .001$ .

However, all paths were significant except for the path from sad reactions to depressive symptoms.

**Model 2: Direct and indirect of negative parenting.** In the second model, paths from negative parenting to the mediators were freed, building on Model 1 (see Figure 2). This model (Model 2) had a good fit to the data and had a significantly better fit compared to Model 1,  $\chi^2(12) = 43.25, p < .001, CFI = .98, RMSEA = .060$  (90% CI .043 – .080),  $p = .17$ ;  $\chi^2_{\text{difference}}(3) = 106.9, p < .01$ . As can be seen in Figure 2, all paths were significant with the exception of the path from sad reactions to depressive symptoms. Thus, children who reported more negative parenting were higher in RS, sad rejection threat reactions, and withdrawal rejection threat reactions. In turn, RS and withdrawal were associated with reports of more depressive symptoms, and all three measures of emotional sensitivity (RS, sadness and withdrawal) were associated with reports of more social anxiety symptoms. In addition to supporting these expected associations, negative parenting continued to have direct associations with elevated depressive and social anxiety symptoms.

**Model 3: Associations of interparental conflict with other measures.** In the third model, we refit the same paths as in Model 2 but replaced negative parenting with interparental conflict. We did this to isolate how interparental conflict was associated with other constructs in this model prior to building our more comprehensive model incorporating

negative parenting. This model was saturated, so no fit statistics were available, and, as was found in Model 1, all paths were significant except for the path from sad reactions to depressive symptoms. In particular, interparental conflict was associated with higher RS (.22), elevated sad reactions (.11), elevated withdrawal (.20), more depressive symptoms (.33), and more social anxiety symptoms (.09), all  $p < .01$ .

**Model 4: Direct and indirect associations of parenting and interparental conflict.**

In the final (hypothesised) model (Model 4), we tested the full model, which included the direct and indirect associations of family experiences, including negative parenting and interparental conflict, with the mediators (RS, sad reactions, and withdrawal), and children's emotional maladjustment (see Figure 3). This model had a good fit to the data,  $\chi^2(14) = 44.09$ ,  $p < .001$ , CFI = .98, RMSEA = .055 (90% CI .037 – .074),  $p = .30$ . In total, the model accounted for 30% of the variance in negative parenting, 15% of the variance in RS, 16% of the variance in sad rejection threat reactions, 11% of the variance in withdrawal in response to rejection threat, 40% of the variance in depressive symptoms, and 45% of the variance in social anxiety symptoms.

As shown in Figure 3, negative parenting was associated with all three measures of emotional sensitivity and maintained a direct association with depressive symptoms. Taken together, the total effect of negative parenting on depressive and social anxiety symptoms was .50 and .33, respectively. Of these total effects, the effect of negative parenting on depressive symptoms was 70% direct (.35) and 30% indirect (.15). In contrast, the indirect effect of negative parenting on social anxiety symptoms was 76% of the total effect (.25), whereas the direct effect was 24% of the total effect.

Regarding interparental conflict, it was not significantly associated with any mediators or either measure of emotional adjustment. Instead, it was directly associated with more negative parenting only, .54,  $p < .01$ . Thus, the effects of interparental conflict on RS,

sadness and withdrawal were fully indirect. Moreover, the associations of interparental conflict on adolescents' emotional maladjustment were mostly indirect via parenting and emotional sensitivity measures (RS, sadness, and withdrawal), with 85% of the effect indirect for depressive symptoms (.28 out of a total effect of .33) and 79% of the effect indirect for social anxiety symptoms (.19 out of a total effect of .24).

It is also important to note that RS and withdrawal in response to rejection threat were particularly strongly associated with symptoms in this final model, even after considering the direct associations of family experiences with emotional maladjustment. Moreover, sad reactions to rejection threat also uniquely accounted for additional variance in social anxiety symptoms. Therefore, rejection sensitivity, the emotional reaction of sadness to rejection threat, and withdrawal as a behavioral response to rejection threat remained unique correlates of symptoms.

### **Alternate Model**

In the alternate model, we modified the final model to examine whether depressive and social anxiety symptoms were the predictors of emotional sensitivity (rejection sensitivity, sadness, and withdrawal). This alternate model had a good fit to the data,  $\chi^2(12) = 41.29$ ,  $p < .001$ , CFI = .98, RMSEA = .061 (90% CI .042 – .082),  $p = .16$ , suggesting that this model was also viable. As shown in Figure 4, negative parenting was associated with depressive and social anxiety symptoms, and also directly associated with rejection sensitivity and withdrawal in response to rejection threat. Symptoms were associated with all three measures of emotional sensitivity, with the exception of a nonsignificant association of depressive symptoms with sadness as a reaction to rejection threat. In total, the model accounted for 29% of the variance in negative parenting, 27% of the variance in depressive symptoms, 12% of the variance in social anxiety symptoms, 36% of the variance in RS, 16%

of the variance in sad rejection threat reactions, and 30% of the variance in withdrawal in response to rejection threat.

### **Discussion**

Guided by RS theory (Feldman & Downey, 1994; Downey and Feldman, 1996), the primary aim of the present study was to examine whether the associations between adolescents' experiences of rejecting and problem parenting behaviours and their emotional maladjustment were partly or fully indirect via RS. Moreover, the model was expanded through the addition of two other measures of emotional sensitivity that were expected to be intervening variables between family experience and emotional maladjustment, including adolescents' heightened sadness and withdrawal in response to rejection threat. In addition, we extended the model further to include adolescents' witnessing of interparental conflict, expecting that it would also be implicated in adolescents' experiences of parenting and emotional sensitivity. Overall, the findings illuminated how early adolescents' experiences of dysfunctional parenting practices are associated with their heightened emotional maladjustment both directly and indirectly via their heightened RS and elevated reactions of sadness and withdrawal in the face of the threat of rejection. The findings support our expectation that dysfunctional parenting, characterised by elevated rejection, coercion and psychological control, and low warmth and autonomy support, is one of the foundations for early adolescents' heightened anticipation of rejection and their emotional maladjustment.

#### **Sadness and Withdrawal Reactions to Rejection Threat**

In addition to this general finding, three other key findings arose from our testing of associations that were consistent with the RS Model. First, we expanded the RS Model to not only examine RS as a factor that could account for the association between parenting and emotional maladjustment, but to also examine sadness and withdrawal as unique factors in this model. As expected negative parenting was directly and uniquely associated with

emotional (sadness) and behavioural (withdrawal) reactions to rejection threat, even after accounting for RS. In turn, the three measures of emotional sensitivity (RS, sadness and withdrawal) were associated with heightened social anxiety symptoms, and RS and withdrawal (but not sadness) were associated with heightened depressive symptoms.

These findings link negative parenting practices to the information processing bias of RS and its correlates of sadness and withdrawal in response to rejection threat. It highlights the role of child-rearing practices, as theorised by Bowlby (1969) and others (Dodge, 2002; Feldman & Downey, 1994), in children's social information processing systems and corresponding reactions to interpersonal problems. These processing styles and reactions can severely hamper social and emotional functioning undermining well-being throughout adolescence and into early adulthood. Much research, policy and funding has been invested in the area of teaching effective parenting techniques (Australian Government, 2000; Mildon & Polimeni, 2012; Thomas & Zimmer-Gembeck, 2007; Thomas, Zimmer-Gembeck, & Chaffin, 2013), and the present study suggests that this investment is not misplaced. Yet, the findings also suggest the possibility of intervention at a later stage in the process. The RS Model and the support for it in this study suggests that it might also be effective to coach adolescents in their processing of social information in order to circumvent the interpersonal problems that can occur when they have unfavourable views of self or others.

### **Interparental Conflict**

The second key finding showed that when interparental conflict replaced negative parenting in the model, as predicted, and consistent with previous findings (Barletta & O'Mara, 2006; Rhoades, 2008), adolescents who reported witnessing more interparental conflict also reported more depressive and socially anxious symptoms, and heightened levels of RS, sadness and withdrawal. However, when both parenting and interparental conflict were considered, conflict was not directly associated with any mediators or indicators of

child adjustment. Instead interparental conflict had an indirect role in this model, having most of its associations with emotional sensitivity and emotional adjustment via negative parenting. This supports our hypothesis and concurs with previous research that suggests the effects of interparental conflict on child outcomes are mostly indirect via parenting processes (Turner & Kopiec, 2006; Zimet & Jacob, 2001). Consistent with the spill-over hypothesis, interparental conflict was directly associated with more negative parenting (Krishnakumar & Buehler, 2000) in our final model. This finding suggests that any community parenting programs need to consider the milieu of conflict that may be impacting on parents' ability to engage effective practices.

### **Sad Reactions to Rejection Threat**

A third key finding concerned adolescents' sad reactions to rejection threat. Sadness was uniquely associated with greater social anxiety symptoms, but was not associated with greater depressive symptoms in any of our structural equation models. This pattern of results was rather surprising, given that sadness is a key criterion for the assessment of depressive symptoms, but is not a specific feature of social anxiety symptoms (American Psychiatric Association, 2013). Examination of the bivariate correlations (Table 1) even showed that the association between sadness and depressive symptoms was weaker than between sadness and social anxiety symptoms, suggesting that these findings were not only due to the impact of other variables in the multivariate models. One possibility is that this finding emerged because the social nature of the symptoms is important for understanding emotional reactions to rejection threat. In particular, because we measured social anxiety, it may be that sadness in response to a social situation, like rejection threat, was a clear indicator of these socially-linked symptoms, whereas depressive symptoms indicate a more general sadness but may not identify adolescents who will be particularly sad, relative to their peers, when faced with rejection threat.

### **Reciprocal Associations between Emotional Sensitivity and Emotional Maladjustment**

The final key finding emerged from the testing of an alternate model in which we reversed the paths between emotional sensitivity and emotional problems to examine how emotional problems may yield emotional sensitivity to rejection threat. The findings indicated that the alternate model could also be viable. Thus, the findings, although cross-sectional, are consistent with theory and previous research (Hammen, 2005; Rudolph et al., 2000; Zimmer-Gembeck, Hunter, Waters, & Pronk, 2009), which suggests transactional, dynamic associations between interpersonal stress, emotional maladjustment, sensitivity, and interpersonally maladaptive responses to stress. Our findings suggest that it may also be the case that negative parenting was associated with heightened sensitivity and the responses of sadness and withdrawal to rejection threat both directly and indirectly via adolescents' depressive and social anxiety symptoms. The testing of this alternate model, therefore, highlights the complex association between children's experiences and their emotional and behavioural outcomes and indicates that faulty socio-emotional information processing can be an antecedent and a consequence of symptomologies in children and adolescents.

### **Study Limitations and Future Research Directions**

Three study limitations should be mentioned. First, no conclusions about causality can be drawn due to the cross-sectional design of this study. In fact, consistent with RS theory (Feldman & Downey, 1994; Downey and Feldman, 1996), the results suggest that children with elevated RS and more problem responses to rejection threat may be at greater risk of depressive and social anxiety symptoms, but also suggest that an alternate model is viable whereby elevated RS and sadness and withdrawal in response to rejection threat may follow from emotional maladjustment. Longitudinal research is necessary to better identify temporal associations between all of the measures in the models tested here.

Second, we relied on adolescents' self-reports for this study. Although self-report is a key source of information when attempting to access individual perceptions, it is important to note that personal reports may yield different findings than those from other informants (Hoffman, Cole, Martin, Tram, & Seroczynski, 2000; Zimmer-Gembeck & Pronk, 2012). In future research, it will be beneficial to expand this study by including multiple respondents, such as parents' reports of parenting practices and interparental conflict.

Finally, RS, sadness and withdrawal were measured as adolescents' views of how they *anticipated* they would think, feel and respond to scenarios that described *threats* of interpersonal rejection. Thus, these findings may not be completely consistent with the associations that would be found if adolescents reported their actual responses, others (peers, parents) reported the adolescents' responses, or their responses to rejection were observed - something to be considered in future research.

To expand on the present findings, it would be interesting to delve more deeply into the actual parenting behaviours that constitute coercive/rejecting parenting, in order to gain a better understanding of which parental behaviours are more crucial to adolescent emotional development. In gaining a better understanding at the parental level, it would be interesting to consider what impact parental RS and responses to rejection have on corresponding adolescent responses.

## **Conclusions**

Previous research has demonstrated the role that parenting plays in children's emotional maladjustment (Epkins & Heckler, 2011; Rapee, 1997; Rohner, Khaleque, & Cournoyer, 2005). However, the pathways linking parenting practices to adolescents' symptoms of depressive and social anxiety have not received as much attention. Specifically, the use of the RS Model to explain these links is unique to the current study.

Notwithstanding the direct effect that parenting has on children's feelings of depression and

social anxiety, our findings suggest that negative childrearing practices also correlate with adolescents' greater expectations of, and adverse reactions to, the threat of rejection. In turn, these expectations and reactions have direct associations with elevated symptoms of depression and social anxiety among early adolescents. Understanding these pathways from familial relationships to child and adolescent emotional ill-health allows the development of more nuanced, effective and multi-stage approaches to intervention.

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Table 1

*Means, Standard Deviations and Correlations Between all Measured Variables (N=649)*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Depressive symptoms	13.03	3.21	--								
2. Social anxiety symptoms	2.20	0.84	.58**	--							
3. Parenting: rejection/coercion	1.91	0.74	.43**	.29**	--						
4. Parenting: psychological control	1.95	0.76	.36**	.31**	.58**	--					
5. Parenting: warmth/autonomy support	4.30	0.70	-.36**	-.13**	-.55**	-.39**	--				
6. Interparental Conflict	2.08	1.03	.33**	.23**	.46**	.39**	-.32**	--			
7. Rejection sensitivity	11.78	4.52	.44**	.56**	.32**	.30**	-.20**	.21**	--		
8. Withdrawal to rejection threat	1.76	0.75	.46**	.50**	.26**	.30**	-.17**	.20**	.41**	--	
9. Sad reactions to rejection threat	3.01	1.11	.25**	.40**	.16**	.17**	-.01	.10*	.36**	.26**	--

\* $p < .05$ . \*\*  $p < .01$ .

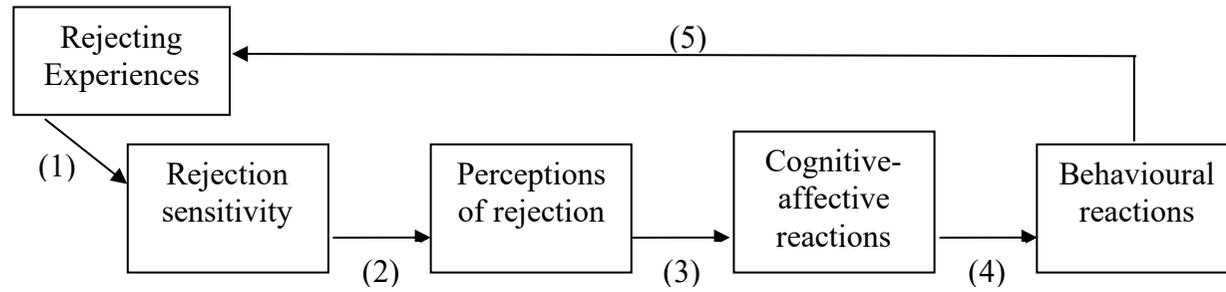


Figure 1. The rejection sensitivity model (adapted from Levy et al., 2001, p. 252). Links described in the text are numbered and shown in parentheses.

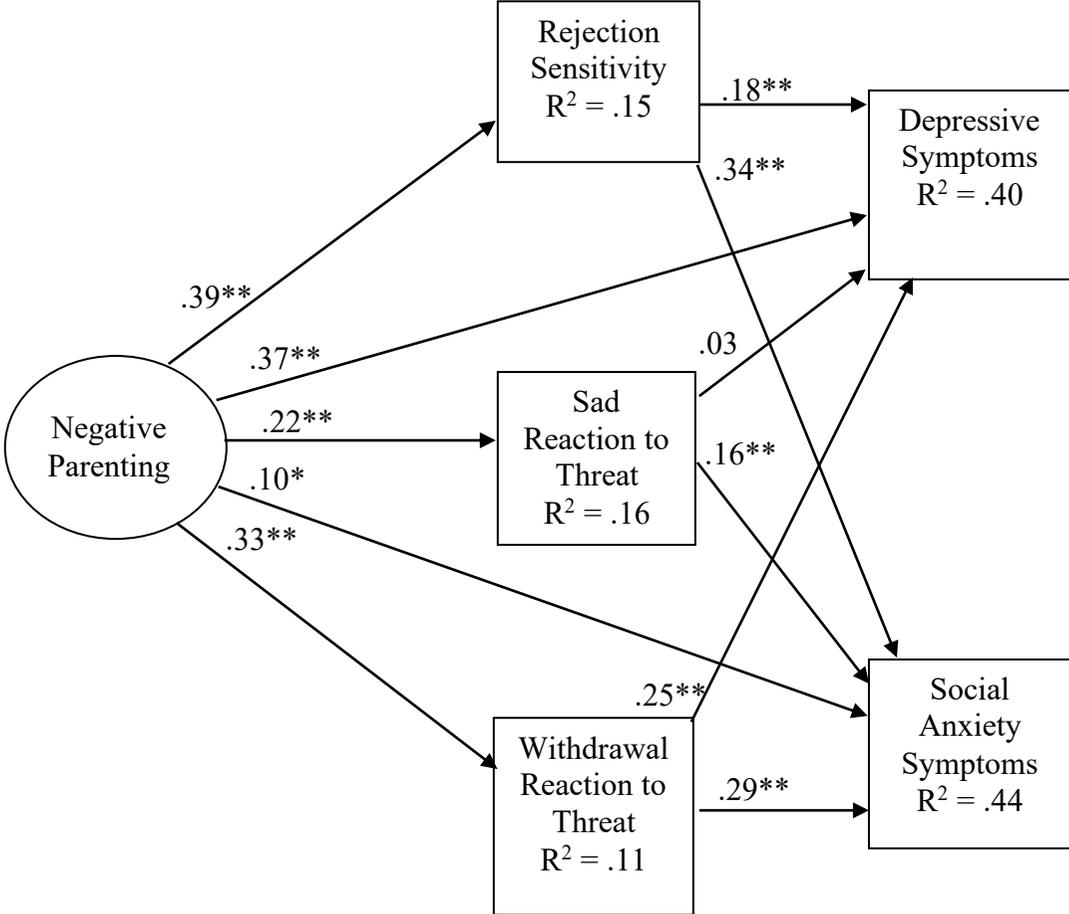


Figure 2. Associations (standardised path coefficients) between the latent construct of negative parenting, measures of emotional sensitivity, and early adolescents' emotional maladjustment ( $N = 649$ )

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

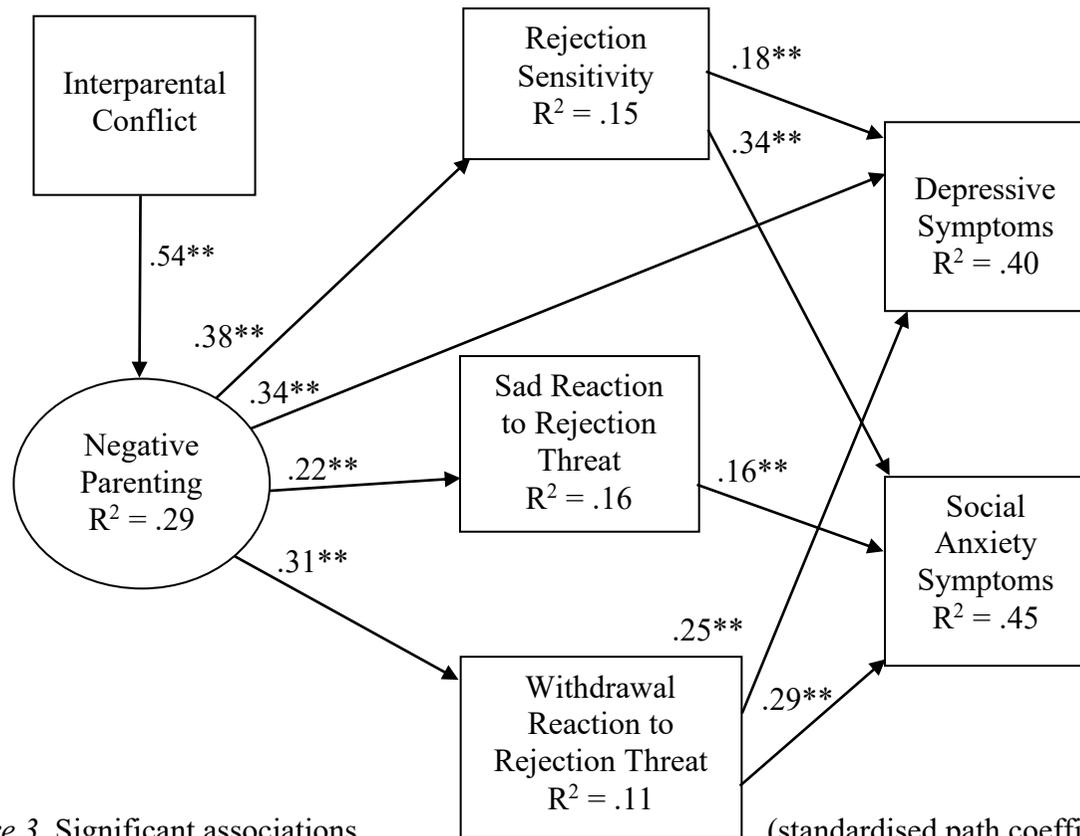


Figure 3. Significant associations (standardised path coefficients) between interparental conflict, the latent construct of negative parenting, emotional sensitivity, and children's emotional maladjustment ( $N = 649$ ). To simply the figure nonsignificant paths are not shown, but were estimated, nonsignificant coefficients ranged from  $-.02$  to  $.07$ .  $*p < .05$ .  $**p < .001$ .

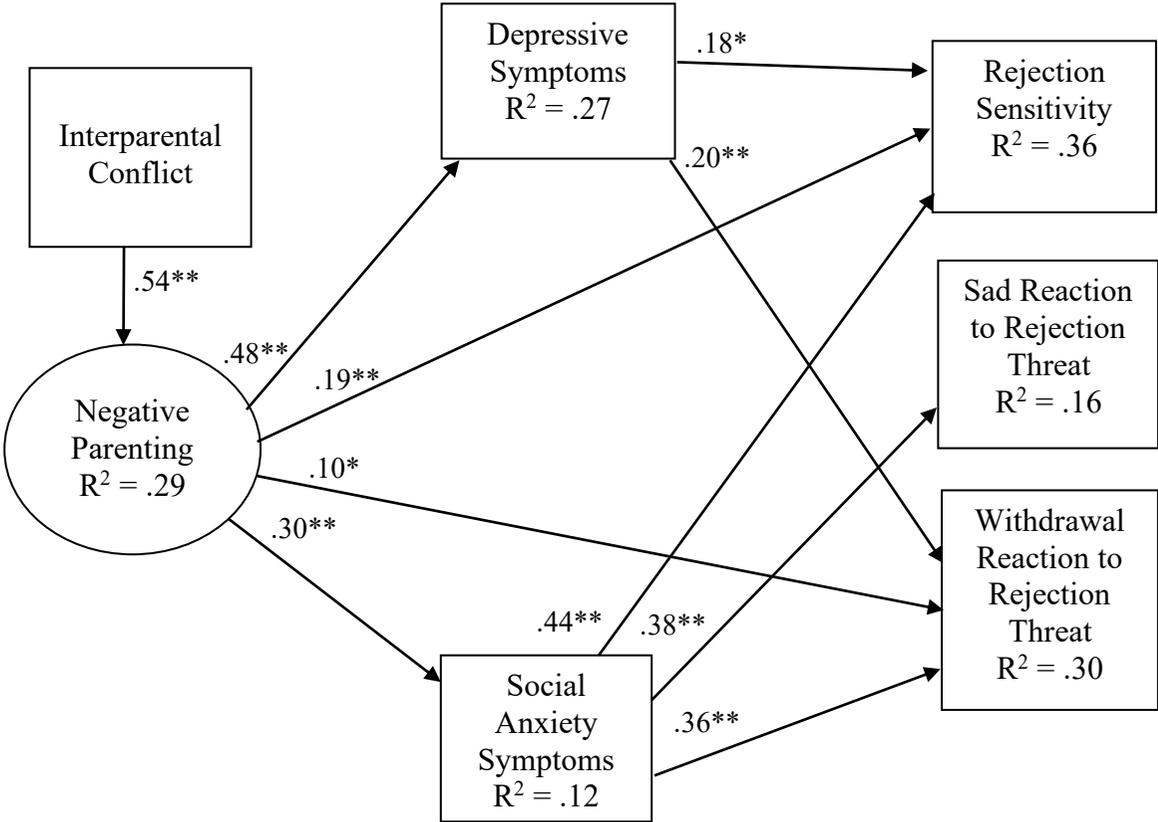


Figure 4. Significant associations (standardised path coefficients) between interparental conflict, the latent construct of negative parenting, early adolescents’ emotional maladjustment, and emotional sensitivity ( $N = 649$ ). To simply the figure nonsignificant paths are not shown, but were estimated.

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