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RURAL ADOLESCENTS' EMOTIONAL EXPERIENCE OF
PARENT-ADOLESCENT INTERACTIONS AS A PREDICTOR OF
PSYCHOPATHOLOGY

A Thesis Presented

by

MEREDITH L. GUNLICKS

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE

May 2002

Department of Psychology

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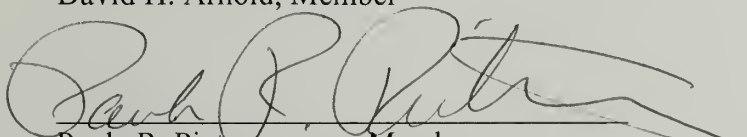
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ABSTRACT

RURAL ADOLESCENTS' EMOTIONAL EXPERIENCE OF PARENT-ADOLESCENT INTERACTIONS AS A PREDICTOR OF PSYCHOPATHOLOGY

MAY 2002

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This study examined the relation of adolescents' self-reports of affect during conflictual discussions with their parents to adolescent internalizing and externalizing symptoms. Adolescents were asked to participate in a videotaped discussion with their mother and with their father that required negotiating an area of conflict. Adolescents then watched the videotape of their interactions and were asked to use a joystick to make continuous ratings of how negative or positive they were feeling during the discussions. Adolescents' affect ratings were related to internalizing and externalizing symptoms at the time of the interaction, one year prior to the interaction, and one year subsequent to the interaction. Results indicated that adolescents' affective experience of conflict negotiation with their parents was predictive of both concurrent and future internalizing and externalizing symptoms, and that the relationship between affect and symptoms differed depending on adolescent gender and the parent with whom the adolescent was interacting.

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CHAPTER 1

Introduction

Developmental psychopathologists suggest that the experience, expression, and regulation of emotion play a central role in the development of emotional and behavioral problems (Campos, Campos, & Barrett, 1989; Izard, 1977; Magai & McFadden, 1995). Emotions are generally thought to be functional and adaptive (Izard & Ackerman, 2000): anger, for example, serves the purpose of mobilizing an individual and sustaining high levels of energy, while sadness slows the cognitive and motor systems allowing for self-reflection and assessment of the situation (Izard & Ackerman, 2000), conserves energy (Clark & Watson, 1994), and signals the need for support (Stearns, 1993). Although emotions are innately adaptive, negative emotions that are high in intensity and frequency, and long in duration, as well as positive emotions that are low in intensity and frequency, short in duration, and difficult to elicit suggest difficulty with emotion regulation, and may lead to the development of psychopathology (Clark & Watson, 1994).

Interpersonal interactions, particularly conflictual interactions, are a particularly important context within which to study the development of dysregulated emotion. Interpersonal interactions provide a forum for emotion socialization practices including the reinforcement, punishment, and imitation of emotional experience and expression (Saarni & Crowley, 1990). While one hopes that emotion socialization practices will result in the acquisition of adaptive strategies for experiencing, expressing, and regulating emotion, maladaptive patterns may develop, as well. These maladaptive patterns may become more chronic if they continue to be rehearsed and maintained in subsequent

interactions, and hence may lead to the dysregulated emotional styles characteristic of those with psychological difficulties (Cole & Zahn-Waxler, 1992). For adolescents, many of their interpersonal interactions occur within the context of the family. Investigating parent-adolescent interactions may thus provide insight into the development of adolescent psychopathology. This study examined the relations among adolescents' emotional experience of problem solving discussions with their mothers and fathers and adolescent internalizing and externalizing symptoms.

Disrupted Problem Solving Interactions & Adolescent Psychopathology

Families who are unable to focus on constructively discussing and solving a problem and instead resort to the exchange of negatively charged emotions are not only unsuccessful in solving their disputes (Forgatch, 1989; Robin & Foster, 1989), they also tend to have more psychologically distressed adolescents (Asarnow, Lewis, Doane, Goldstein, & Rodnick, 1982; Gantman, 1978; Prinz, Foster, Kent, & O'Leary, 1979; Robin & Weiss, 1980). While it has been repeatedly found that negative emotion covaries with child adjustment problems, it is still unclear whether negative emotion in interpersonal interactions is a result of preexisting emotional or behavioral problems, whether it causes the development of psychopathology, or whether it may stimulate preexisting clinical problems to escalate further.

The mechanism linking negative affect in interpersonal problem solving interactions and psychopathology also remains unclear. One line of research has focused on children's emotionality and the interpersonal interaction as a forum for emotional styles to be rehearsed and reinforced (Cole & Zahn-Waxler, 1992). The temperament literature has suggested that individuals differ in negative affectivity, or the degree to which they experience distress, and that this trait may be related to their biologically predisposed style of emotional reactivity (Rothbart, 1989; Rothbart & Derryberry, 1981; Watson & Clark, 1984). Some individuals are more emotionally reactive to restraint or goal frustration (Lewis, Alessandri, & Sullivan, 1990), both of which may be common occurrences in parent-adolescent conflicts.

While negative affectivity may reflect a temperamental predisposition, Cole and Zahn-Waxler (1992) theorize that chronic negative affectivity requires stimulation and maintenance by environmental factors in order to develop into dysregulated patterns characteristic of those with psychopathology. Research suggests that a problem in the parent-adolescent interaction is one such factor that may contribute to the development of chronic clinical problems (Capaldi, Forgatch, & Crosby, 1994; Patterson, DeBaryshe, & Ramsey, 1989; Powers & Welsh, 1999) and that the mechanism linking troubled parent-adolescent interactions and psychopathology may be different for internalizing and externalizing disorders (Patterson, 1982; Patterson et al., 1989).

Negative Emotion & Externalizing Symptoms.

Negative affectivity may not only reflect heightened emotional reactivity, it also may reflect difficulties in emotional regulation, including difficulty in shifting attention from the source of distress (Rothbart, 1989). Cole and Zahn-Waxler (1992) have suggested that children with externalizing symptoms may experience a heightened reaction to frustration and/or they may have some difficulty distracting from anger. Consequently, they may be particularly at risk for high levels of negative emotion in interpersonal conflicts. Patterson (1982) describes a pattern of parent-child interaction that explains how high levels of negative emotion in an interaction can lead to the development of behavior problems: the parent states a command, the child refuses to comply, the parent repeats the command while becoming angrier, the child becomes more hostile and resistant, and the dispute becomes irresolvable and discussion is foreclosed. As these angry interactional patterns are repeated, they become well practiced and easily elicited, and serve to maintain the child's disruptive behavior.

Negative Emotion & Internalizing Symptoms.

Patterson has suggested that angry parent-child interactions may foster the development of depression, as well (Patterson et al., 1989). Although children may react by displaying anger through defiance and misbehavior, as these angry interactions are repeated, children may begin to feel devalued, ineffective and helpless (Patterson et al., 1989).

Disrupted parent-adolescent interactions may also lead to adolescent depression by thwarting adolescent individuation (Allen, Hauser, Eickholt, Bell, & O'Connor, 1994; Barber, Olsen, & Shagle, 1994; Gjerde & Block, 1991). It has been suggested that an individual's failure to achieve essential developmental tasks may contribute to the development of psychopathology (Cicchetti, 1984; Cicchetti & Toth, 1995; Kovacs, 1989; Sroufe, 1992). During adolescence, one of the central developmental tasks is achieving individuation, a process that requires the adolescent to negotiate greater autonomy from parents while still maintaining a degree of closeness and intimacy (Grotevant & Cooper, 1985; Hill & Holmbeck, 1986; Laursen & Collins, 1994; Steinberg, 1990). Parent-adolescent interactions provide a forum for adolescents to practice the interpersonal negotiation skills and self-assertion necessary for achieving individuation. Extreme levels of negative affect that interfere with the problem solving process or shut the discussion down completely will not facilitate the developmental task of individuation, and thus may be associated with the development of depressive symptomatology (Powers & Welsh, 1999).

While extreme levels of negative affect may interfere in the process of individuation, some conflict is expected, or perhaps even necessary, to facilitate clear individuation (Powers, Schwartz, Hauser, Noam, & Jacobson, 1983; Powers, Welsh, & Wright, 1994). The presence of conflict signals the need for the parent and adolescent to negotiate their positions. As the adolescent asserts his or her position and refrains from submitting to the parent, the adolescent's power increases and the adolescent is able to negotiate new patterns of independence while maintaining a connectedness with his or

her parents (Powers & Welsh, 1999). Consequently, while extreme levels of negative affect may be related to depression, moderate levels of negative emotion during problem solving discussions may actually be associated with adolescent adjustment.

Positive and Neutral Emotion & Adolescent Adjustment.

Research exploring affect in problem solving interactions has generally tended to focus on negative affect. Less is known about the effects of neutral and positive affect. Researchers theorize that adolescents' neutral affect should be related to a positive problem-solving outcome and adolescent adjustment (Capaldi et al., 1994). By remaining calm and neutral while discussing topics that are a source of disagreement, parents and adolescents should be better able to sustain the conversation through describing differing viewpoints on the source of the problem, generating solutions, and ultimately resolving the dispute. Developing the capacity to successfully problem solve may increase adolescents' feelings of self-worth and efficacy, as well as contribute to the achievement of individuation, both of which may promote adolescent well-being.

Similarly, the experience of positive emotions during problem-solving interactions may also be related to adolescent adjustment. Rathunde (1997) hypothesizes that positive emotions, such as interest, will facilitate discussions and promote the interchange of ideas, beliefs, and values since experiences of interest facilitate "deeper" processing of information (Renninger, Hidi, & Krapp, 1992). In a study of adolescent boys' affect during problem-solving discussions with their parents, Capaldi et al. (1994) found that observers' reports of boys' neutral behavior were related to stronger parent-

boy relationships. In addition, boys' affiliative affect, including affection and humor, was related to better problem-solving outcome, stronger parent-son relationships, and higher self-esteem.

The Role of Subjective Understanding of Emotion.

Taken together, research generally indicates that adolescents' emotional experience of an interpersonal interaction, and more specifically a problem-solving interaction, is related to adolescent adjustment. These studies have typically assessed adolescents' emotions using self-report questionnaires. However, many self-report questionnaires are context-unspecific or require the adolescent to imagine how he or she might have felt during a hypothetical situation. If emotions were assessed within a specific event, such as a conflict discussion, they were typically assessed by outside observers. However, it is possible that there will be discrepancies between outside observers' perceptions of adolescents' emotions and what the adolescent is actually experiencing. Observers may have their own ideas about how the adolescent ought to feel based on their own interpretation of what they see going on in the conflict. Additionally, there may be discrepancies between what the adolescent is feeling and what is expressed or observable. Understanding adolescents' subjective experience of emotion is crucial since it is the adolescents' own experience of emotion that determines how they will interpret and respond to others' behaviors, and how they can develop behaviors that are symptomatic of internalizing and externalizing problems (Powers et al., 1994).

In response to this, Gottman and Levenson (1985) developed a “video-recall” procedure, used with married couples, in which couples watched a videotape of a problem-solving discussion they had with their spouse and made continuous ratings of their positive, negative, and neutral affect during the interaction using an affect rating dial, or joystick. Using this method, Gottman and Levenson (1985) found that spouses’ negative affect was related to marital dissatisfaction and that distressed couples displayed less positive affect during their discussions. In the present study, this video-recall procedure was adapted for use with adolescents and their parents to obtain ratings of adolescents’ affective experience of a conflictual problem-solving discussion with their mothers and with their fathers.

The Importance of Parent & Adolescent Gender

This study will also investigate adolescent and parent gender as moderators of the relationship between adolescent affect and psychopathology. There has been little research systematically looking at the role of both parent and adolescent gender in the relationship between aspects of parent-adolescent interactions and adolescent psychopathology. Fathers are generally underrepresented in the parent-adolescent interaction literature, preventing comparisons of mother-adolescent and father-adolescent interactions. Mothers and fathers are also often lumped together in one broad “parent” category without explanation as to whether mothers and fathers were combined as a result of prior analyses showing no mother-father differences or because parent gender

simply was not examined. In addition, it has not been uncommon for research investigating the relationship between parent-adolescent interactions and psychopathology to have single-sex adolescent samples.

Research exploring mother-father differences in parent-adolescent interactions has been mixed. Both male and female adolescents interact more with their mothers than their fathers on a daily basis (Collins & Russell, 1991), they are more likely to express their emotions with their mothers (Fuchs & Thelen, 1988), and they appear to have more conflictual interactions with their mothers than with their fathers (Collins & Russell, 1991; Laursen & Collins, 1994; Steinberg, 1987). Since adolescents have more frequent and more heated interactions with their mothers, it seems reasonable to theorize that mother-adolescent interactions might be more strongly linked to adolescent adjustment than father-adolescent interactions. However, empirical studies indicate that father-adolescent interactions are significant predictors of adolescent adjustment. Male and female adolescents' open communication with their fathers has been found to be related to lower rates of delinquency, while open communication with their mothers was not significant (Clark & Shields, 1997). Fathers' congeniality (humor, smiling or laughing, and talking) during parent-adolescent interactions has also been found to be negatively related to adolescents' internalizing and externalizing, while mothers' interpersonal behavior was unrelated to adolescent adjustment (Jacob & Johnson, 1997).

There is also some indication that adolescents' interactions with their mothers and fathers may be different depending on the adolescent's gender. Powers et al. (1987) found that fathers are more supportive during problem-solving interactions with their daughters and more competitive with their sons, while no differences were observed

between the mother-son and mother-daughter dyad. Other research has suggested that communication between mothers and daughters is characterized by more conflict than communication between mothers and sons (Hill & Holmbeck, 1987; Montemayor, 1986; Smetana, 1989). Daughters are also more likely to discuss their emotions with their mothers than with their fathers (Larson & Richards, 1994; Noller & Callan, 1990; Youniss & Smollar, 1985). Powers et al. (1987) also found that the interactional patterns associated with more mature defense mechanisms and higher adaptive functioning were different for boys and girls. For girls, higher functioning was associated with affectively supportive behaviors by mothers, and to a lesser degree, fathers, within a non-competitive atmosphere. For boys, a highly competitive atmosphere in which parents ended the discussion before a consensus was reached was optimal.

In the small literature linking adolescents' emotions during parent-adolescent interactions and adjustment, only one study was identified that examined both parent and adolescent gender. Tesser et al. (1989) found that the strongest relationship between adolescent affect and academic, social, and psychological adjustment occurred within the father-son dyad. Angry discussions between fathers and sons were related to a low GPA while calm discussions were negatively related to internalizing and externalizing problems. There were no significant relationships for the mother-son dyads. For girls, adolescents' reports of angry discussions with their mothers were positively related to externalizing behavior.

In sum, it appears useful to conceptualize mother-daughter, mother-son, father-daughter, and father-son dyads as distinct relationships (Flannery, Montemayor, Eberly, & Torquati, 1993; Russell & Saebel, 1997; Steinberg, 1987, 1990), though the interactional patterns among these dyads and their relationship to adolescent adjustment are far from clear.

The Current Study

This study examined the relation of adolescents' continuous self-reports of affect during a conflictual conversation with their mother and with their father to adolescents' internalizing and externalizing symptoms. It was hypothesized that very high levels of negative affect would be positively related to internalizing and externalizing symptoms since research has indicated that extreme negative affect during interpersonal interactions suggest difficulty with emotion regulation and may thwart the process of individuation. Moderate levels of negative affect may facilitate adolescent adjustment since moderate conflict provides a forum for adolescents to negotiate their independence. While less is known about positive and neutral emotion, research suggests that neutral and positive emotion facilitate successful problem solving and thus may be related to adolescent adjustment. Consequently, in this study, adolescents' experiences of positive and neutral emotion were hypothesized to be negatively related to internalizing and externalizing symptoms. Adolescents' affect was first related to internalizing and externalizing symptoms at the time of the interaction task (T2), controlling for prior

symptoms at T1. To determine if adolescents' affect is predictive of future symptom change, adolescents' affect was also related to symptoms at T3, controlling for symptoms at T2.

This study also explored whether the relations among adolescents' affect during a problem solving discussion and symptomatology are different depending on whether the adolescent was interacting with his or her mother or father. The role of adolescent gender was also examined. Since the little research that has focused on parent and adolescent gender in this context has been conflicted, no hypotheses were proposed.

CHAPTER 2

Method

Participants

Participants consisted of a subsample of 141 adolescents and parents (18 male adolescents and their parents and 29 female adolescents and their parents) participating in a larger longitudinal study of adolescent depression, the Rural Adolescent and Family (RAF) Study. 91.5% of the mothers and 83.0% of the fathers who participated in the study were biological parents, 6.4% of mothers and 10.6% of fathers were step-parents, 2.1% of mothers and 4.3% of fathers were adoptive parents, and 2.1% of fathers were boyfriends. The sample was drawn from nine rural communities in western Massachusetts and consisted primarily of working class families. Adolescents' mean age at the time of the family interaction was 16.7. Participants were 89.4% Caucasian, 4.3% African American, 2.1% Asian American, and 4.3% Native American. The subsample was similar to the larger sample of 626 adolescents in the larger RAF study on 54 out of 55 variables including sociodemographic variables, family variables, and personality variables. Adolescents in the subsample worked fewer hours in jobs outside of school.

Procedure

Adolescents participated in data collection at three time points, each a year apart. At Time 1 (T1) and Time 3 (T3), they completed a group-administered packet of questionnaires at school. At Time 2 (T2), data collection took place in the adolescents' homes and included the adolescents and their parents. During the home visit, adolescents participated in a discussion with their mother and a discussion with their father that

required negotiating an area of conflict. A topic that both the parent and adolescent had identified as a source of frequent and heated discussions was identified and the dyad was asked to spend 20 minutes describing the issue and attempting to come to some sort of resolution to the problem. If the dyad finished the discussion in less than 20 minutes, they were given back-up issues to discuss. Each discussion was videotaped without the presence of a researcher in the room. When the discussions were finished, each family member individually completed a packet of questionnaires.

Measures

Assessment of Conflict Topic

To identify the topic for the parent-adolescent discussions, adolescents and parents independently filled out an Issues Checklist (IC; Prinz et al., 1979), indicating topics that they had discussed in the past four weeks and rating the intensity of the discussions. The researcher then selected a topic that both the parent and adolescent had identified as a source of frequent and heated discussions. The IC has been found to significantly discriminate between distressed and nondistressed families (Prinz et al., 1979; Robin & Weiss, 1980), and to have moderate test-retest reliability over a 2-month time period (Robin & Foster, 1989).

Assessment of Emotions

Gottman and Levenson's (1985) video-recall procedure, a method used primarily with married couples, was used to measure adolescents' subjective perceptions of their emotions during their discussions with their mother and father. In a session following the

parent-adolescent interactions, adolescents came into the lab and watched the videotape of their conversations with their mother and father. They were asked to use a joystick to make continuous ratings of how negative or positive they were feeling during the conversation. The ratings ranged from -3 (very negative) to +3 (very positive) where 0 was neutral. In support of the validity of this method, Gottman and Levenson (1985) reported that couples' physiological responses including heart rate, pulse transmission time to the finger, skin conductance level, and general somatic activity, changed at the same time points when watching the videotape of the discussion as they did with they were participating in the original interaction. In addition, couples' affect ratings were significantly related to current and future marital satisfaction.

One adolescent in the current study reported only negative affect during his discussions with his mother and father. He was also the only adolescent that had no variability in the level of negative affect that he reported. This caused us to question the validity of his data and we consequently removed him from all analyses.

Table 1 shows the correlations between adolescents' self-reports of negative, positive, and neutral affect. For both the mother and father discussions, adolescents' negative, positive, and neutral affect were significantly negatively related.

Assessment of Symptoms

Adolescents' internalizing and externalizing symptoms were assessed at T1, T2, and T3 using Achenbach's Youth Self Report (YSR; Achenbach, 1991). The YSR is a 102-item checklist of adolescents' behavioral symptoms during the previous 6 months. The YSR identifies two broadband syndromes of internalizing and externalizing

symptoms. The internalizing scale consists of anxious/depressed, withdrawn, and somatic complaints subscales, and the externalizing scale consists of aggressive and delinquent subscales. Achenbach (1991) reports strong test-retest reliability and criterion and discriminant validity of the YSR. Comparison of the RAF subsample to Achenbach's (1991) nationally representative, normative sample of adolescents indicates that both males and females in the RAF subsample scored higher than the national norm (See Table 2).

CHAPTER 3

Results

Adolescents' Internalizing & Externalizing Symptoms

Adolescents' mean internalizing and externalizing scores are reported in Table 2. Girls reported significantly more internalizing symptoms than boys at T2 ($t(39) = -.198, p = .05$). There were no other significant sex differences in internalizing or externalizing symptoms. There were also no significant differences in adolescents' symptoms among the three data collection time points.

Adolescents' Self-Reports of Affect

The mean proportions of adolescents' negative, positive, and neutral affect during their conversations with their mother and their father are reported in Table 3. Adolescent girls reported significantly less positive affect with their mothers than adolescent boys ($t(45) = 2.18, p = .04$). There were no other significant sex differences in adolescents' affect during either the mother or father conversations. There were also no significant differences between girls' affect with their mothers and fathers, or boys' affect with their mothers and fathers.

Adolescents' Affect and Concurrent Symptoms

To examine whether adolescents' self-reports of affect were related to symptomatology at the time of the family interactions (T2), a series of linear and quadratic regressions were conducted with four steps. In the first step of the linear regressions, adolescents' T2 symptoms were regressed on adolescent sex and symptoms

at T1. In the second step, the proportion of adolescents' negative, positive, or neutral affect with either mother or father was added to the equation. This allowed the assessment of the contribution of adolescents' affect to predicting concurrent symptoms above and beyond prior symptoms. The two-way interactions between T1 symptoms, sex, and adolescents' affect were forced into the third step. The fourth step included the three-way interaction between T1 symptoms, sex, and affect. If the three-way interaction term did not explain a significant amount of variance beyond the two-way interaction terms, it was not included in the tables reporting the final regression equations.

To examine whether the relationship between affect and symptomatology might be curvilinear, hierarchical regressions were conducted using the quadratic terms for adolescents' affect. In the first step, adolescents' T2 symptoms were regressed on sex and symptoms at T1. In the second step, the linear term for the proportion of adolescents' negative, positive, or neutral affect with either mother or father was added to the equation. The third step included the quadratic term for adolescents' affect. The fourth step included the quadratic affect-sex, and quadratic affect-T1 symptoms interactions. If the two-way interaction terms did not explain a significant amount of variance beyond the quadratic terms, they were not included in the tables reporting the final regression equations. Because of the assumption that quadratic terms are a more parsimonious explanation of the data than linear terms, if both the linear and quadratic terms were significant, only the quadratic terms were discussed (Darlington, 1990).

Adolescents' Affect and Concurrent Internalizing Symptoms

As shown in Table 4, regressions revealed that adolescents' reports of negative affect with their mothers positively predicted internalizing symptoms at T2 above and beyond symptoms at T1, and that the relationship between negative affect and internalizing was curvilinear. A scatterplot of the relationship between negative affect with mother and T2 internalizing symptoms indicated that very high proportions of negative affect and proportions of negative affect that were close to zero were predictive of concurrent internalizing symptoms, even after controlling for internalizing symptoms at T1.

The relationship between adolescents' positive affect with their father and T2 internalizing was moderated by gender. For girls, positive affect with their fathers negatively predicted T2 internalizing (girls: $r = -.39$, $p = .05$; boys: $r = .04$, $p = .89$), controlling for T1 symptoms.

Adolescents' Affect and Concurrent Externalizing Symptoms

Adolescents' affect with their fathers was predictive of T2 externalizing symptoms (See Table 5). Adolescents' experience of negative affect with their fathers positively predicted concurrent externalizing symptoms and positive affect negatively predicted concurrent externalizing symptoms above and beyond symptoms at T1.

Adolescents' Affect and Future Symptoms

Linear and quadratic regressions were used to examine whether adolescents' self-reports of affect were predictive of changes in adolescents' symptoms one year after the interaction task. In the first step of the linear regressions, adolescents' T3 symptoms were regressed on sex and symptoms at T2. In the second step, the proportion of adolescents' negative, positive, or neutral affect with either mother or father was added to the equation. This allowed the assessment of the contribution of adolescents' affect to predicting future symptoms above and beyond symptoms at the time of the interaction. The two-way interactions between T2 symptoms, sex, and adolescents' affect were forced into the third step. The fourth step included the three-way interaction between T2 symptoms, sex, and affect. If the three-way interaction term did not explain a significant amount of variance beyond the two-way interaction terms, it was not included in the tables reporting the final regression equations.

To examine whether the relationship between affect and future symptoms might be curvilinear, hierarchical regressions were conducted using the quadratic terms for adolescents' affect. In the first step, adolescents' T3 symptoms were regressed on sex and symptoms at T2. In the second step, the linear term for the proportion of adolescents' negative, positive, or neutral affect with either mother or father was added to the equation. The third step included the quadratic term for adolescents' affect. The fourth step included the quadratic affect-sex, and quadratic affect-T2 symptoms interactions. If the two-way interaction terms did not explain a significant amount of variance beyond the quadratic terms, they were not included in the tables reporting the

final regression equations. Again, because of the assumption that quadratic terms are a more parsimonious explanation of the data than linear terms, if both the linear and quadratic terms were significant, only the quadratic terms were discussed (Darlington, 1990).

Adolescents' Affect as a Predictor of Future Internalizing Symptoms

As Table 6 shows, there was a curvilinear relationship between adolescents' negative affect with their mothers and T3 internalizing symptoms (controlling for internalizing at T2). A scatterplot of the relationship between T3 internalizing and negative affect with mother revealed that very high proportions of negative affect and proportions of negative affect close to zero predicted an increase in internalizing symptoms at T3.

There was also a curvilinear relationship between adolescents' negative affect with their fathers and T3 internalizing, however, the relationship was moderated by level of internalizing symptoms at T2. To interpret the interaction between T2 symptoms and negative affect with fathers, a mean-split method was used to divide adolescents into a high T2 internalizing group and a low T2 internalizing group. A scatterplot indicated that for adolescents who had few internalizing symptoms at T2, a very high proportion of negative affect with their fathers was related to an increase in internalizing at T3. However, for adolescents who had high levels of internalizing symptoms at T2, both very low and very high proportions of negative affect predicted an increase in internalizing at T3.

Adolescents' Affect as a Predictor of Future Externalizing Symptoms

As shown in Table 7, only adolescents' affect with their mothers was predictive of future externalizing symptoms. There was a curvilinear relationship between adolescents' neutral affect and T3 externalizing that was moderated by level of externalizing at T2. Again, to interpret the interaction between T2 symptoms and negative affect with mothers, a mean-split method was used to divide adolescents into a high T2 externalizing group and a low T2 externalizing group. A scatterplot indicated that for adolescents who had few externalizing symptoms at the time of the interaction task, very low and very high proportions of neutral affect were predictive of an increase in externalizing symptoms at T3. For adolescents who were already experiencing externalizing symptoms at the time of the interaction task, a similar, though less pronounced, pattern was observed.

CHAPTER 4

Discussion

The findings of this study suggest that adolescents' self-reports of affect during conflict negotiation with a parent significantly predict both concurrent and future internalizing and externalizing symptoms, and that the relationship between affect and symptoms is dependent on both the type of symptoms being predicted and the parent with whom the adolescent is interacting.

Adolescents' Affect & Internalizing Symptoms

As hypothesized, adolescents' experience of both high proportions of negative emotion and low proportions of negative emotion during their discussion with their mothers was positively related to concurrent internalizing symptoms and predictive of an increase in future internalizing, controlling for prior internalizing symptoms.

Adolescents who are experiencing internalizing symptoms may be more likely to enter into interactions with their mothers with the perception that the interaction is not going to go well, and thus interact with their mothers in a manner that creates a self-fulfilling prophecy (Beck, 1967; Rosenthal & Jacobson, 1968). They also may be more likely to perceive their mothers' behaviors more negatively (Abramson, Seligman, & Teasdale, 1978; Beck, 1967; Sanders, Dadds, Johnston, & Cash, 1992) and to respond to this perception with negative emotion that provokes heightened negativity in the mother, resulting in an increasingly negative emotional spiral (Forgatch, 1989; Patterson, 1982).

Low proportions of negative affect were also positively related to concurrent internalizing symptoms. It has been well documented that depressed adults are less involved and responsive and more passive when interacting with others (Downey & Coyne, 1990; Segrin & Abramson, 1994; Segrin & Dillard, 1992) and this seems to be the case with adolescents, as well (Powers & Welsh, 1999; Sanders et al., 1992). The minimal negative emotion experienced by the internalizing adolescents in this study may be reflective of the submissive and emotionally-detached behaviors characteristic of individuals with internalizing problems.

While adolescents' negative emotion with their mothers was characteristic of adolescents with concurrent internalizing symptoms, experience of very high and very low proportions of negative affect also positively predicted future internalizing symptoms, controlling for level of symptoms at the time of the interaction task. Too little negative emotion may suggest that the internalizing adolescent, who is predisposed to behaving submissively in a conflict (Powers & Welsh, 1999), may have emotionally withdrawn from the discussion because continued participation seemed unlikely to further his or her cause. This not only prevents the adolescent from learning and practicing the behaviors necessary for achieving individuation, but it is likely to reinforce the adolescents' submissive behaviors because the adolescent is likely to perceive self-assertion as useless. Very high levels of negative affect in an interaction are likely to render the dispute irresolvable and cause the dyad to end the conversation in an attempt to seek escape and relief. Feeling incapable of resolving their disputes with their mothers may cause adolescents to feel ineffective and helpless, thus provoking the development of internalizing symptoms (Patterson et al., 1989). In addition, foreclosure of the

discussion removes the opportunity for adolescents to practice the interpersonal negotiation skills and self-assertion necessary for individuation (Powers & Welsh, 1999). As Powers et al. (1994) has suggested, a moderate level of conflict may be required to provide a forum for learning the skills associated with individuation. Too little or too much negative emotion may serve to maintain internalizing symptoms or stimulate them to escalate further because they thwart the process of individuation. Finally, for adolescents who were already experiencing internalizing symptoms at the time of the interaction task, the experience of negative affect with their mothers may have served to reinforce their dysregulated emotions, thereby maintaining their internalizing symptoms (Cole & Zahn-Waxler, 1992).

Adolescents' negative affect with their father also significantly predicted future internalizing symptoms, however, the relationship differed depending on the level of adolescents' internalizing symptoms at the time of the father-adolescent discussion. For adolescents who weren't internalizers at the time of the discussion, high levels of negative affect predicted the development of internalizing symptoms at T3. Again, too much negative emotion may have shut down the conversation, removing the opportunity to rehearse behaviors that facilitate individuation, and thus leading to the development of internalizing problems. For adolescents who were already experiencing internalizing symptoms at the time of the family interactions, both very low and very high proportions of negative affect served to maintain adolescents' internalizing symptoms. This is similar to the pattern observed within the mother-adolescent dyads. For adolescents who may

already be displaying the passive and disengaged interpersonal behaviors associated with internalizing symptoms, conflict negotiation with fathers that is characterized by no conflict also prevent adolescents from learning to individuate (Powers et al., 1994).

The hypothesis that adolescents' positive affect would be negatively related to internalizing symptoms was supported within the father-daughter dyad. For the female adolescents, the experience of positive affect with their fathers negatively predicted concurrent internalizing symptoms. If the adolescent is feeling positive, she may feel more willing to see the discussion through to the end. She may be better able to describe the problem in a realistic or non-pessimistic manner, she may be better disposed to hear viewpoints that are different from her own, and may feel more willing to attempt to generate solutions and feel optimistic about their feasibility. The experience of positive emotion may also be related to success in asserting her position and feeling effective at problem solving. Successful problem solving may increase girls' feelings of self-worth, as well as facilitate individuation, and therefore be related to their adjustment.

Experience of positive affect was not predictive of concurrent internalizing symptoms for boys. Girls in the study experienced more negative affect and less positive affect with their fathers than boys did, though the differences were not statistically significant. Perhaps if girls' experience of positive affect with their fathers is a less common occurrence than it is for boys, it makes the positive interactions that do occur more salient for girls and therefore more significant for their adjustment. Thinking more broadly about girls' interactions with males in general, it is possible that the opportunity for girls to share their independent viewpoints and assert their opinions and have it go well, to the point where they feel positive about the interaction, may be much rarer when

interacting with males than with females. Having positive experiences asserting themselves with their fathers thus may be particularly important for girls' emotional adjustment.

Adolescents Affect & Externalizing Symptoms

As hypothesized, adolescents' concurrent externalizing symptoms were positively predicted by negative affect with their fathers and negatively predicted by positive affect with their fathers. This supports Cole and Zahn-Waxler's (1992) theory that individuals with externalizing symptoms may experience a heightened emotional reaction to goal frustration and/or may have difficulty regulating their anger through distraction and other emotion regulation strategies. This makes externalizing adolescents more susceptible to high levels of negative affect and low levels of positive affect during interpersonal interactions revolving around disputes.

The hypothesis that adolescents' neutral affect would negatively predict symptoms was only partially supported. Both low and high levels of neutral affect predicted an increase in externalizing symptoms one year following the interaction task. This was true for adolescents who were experiencing externalizing symptoms at the time of the interaction, as well as for those who were not. However, the pattern was much more pronounced for those who were not externalizers at the time of the interaction task. It was expected that low levels of neutral affect would predict externalizing symptoms. For adolescents who are particularly emotionally reactive to goal frustration and interpersonal conflict and are unable to remain calm, continued rehearsal and

reinforcement of these dysregulated emotional responses during parent-adolescent interactions may lead to the development of externalizing symptoms (Cole & Zahn-Waxler, 1992; Patterson, 1982).

Unexpectedly, high proportions of neutral affect were also predictive of future externalizing symptoms. Adolescents were asked to describe how they were feeling during the discussion using their own subjective definition of negative, positive, and neutral. While “negative” and “positive” have fairly clear connotations, it is possible that adolescents may have different interpretations of the meaning of “neutral.” An adolescent who is feeling neutral during conflict negotiation might be feeling calm and relaxed, or he or she might be feeling disengaged or detached from the discussion and/or the relationship with the parent more generally. It is possible that for the adolescents who experienced high proportions of neutral affect with their mothers and developed increased externalizing symptoms a year later, neutral affect was indicative of disengagement or detachment. If the adolescent is unable to stay connected to the problem-solving process, this will prevent him or her from learning effective problem-solving skills. Poor interpersonal problem-solving skills have frequently been implicated in the development of externalizing symptoms (Patterson, 1982).

Conclusions

In summary, adolescents’ emotional experience of conflict negotiation with their parents appears to be an important predictor of concurrent and future internalizing and externalizing symptoms. Although the analysis of relations between variables in this study were correlational and thus not proof of causation, use of a longitudinal design

facilitated the examination of the temporal sequences between adolescent affect and symptomatology. Not only do adolescents' experience of negative, positive, and neutral affect differentially predict concurrent and future symptoms, but it appears that the types of affect that predict symptoms may be different at different points in the developmental course of the problem. That is, the relationship between affect and symptoms may depend on whether or not the adolescent is already experiencing difficulties. In addition, by using a longitudinal design, it was possible to control for prior symptoms, thus allowing the assessment of the unique contribution of adolescents' affect to the prediction of symptomatology.

By including both mothers and fathers in this study, we were able to examine the distinct role that each parent may play in the development of adolescent psychopathology. Results indicated that both mothers and fathers are important for adolescent adjustment and that the relationship between adolescents' affect and symptoms may be different depending on the parent with whom they are interacting.

The sample in this study consisted predominantly of families of rural working-class background. This study extends the parent-adolescent interaction literature to an understudied population, however it is also important to note that the results may not be generalizable to other populations. Future research should examine the relationship between adolescents' self-reported affect during conflict negotiation and internalizing and externalizing symptoms within other demographic groups to determine the extent to which contextual variables may influence the relationship between adolescents' affect and symptomatology.

Due to the small sample size, we were unable to include adolescents' age in the analyses. Research has suggested that levels of conflict between parents and adolescents may be different depending on the age and pubertal status of the adolescent. A meta-analysis of the literature on changes in parent-adolescent conflict across adolescence indicated that conflict rate decreases with age, while the expression of negative emotion during conflict increases with age and pubertal maturation (Laursen, Coy, & Collins, 1998). It seems possible that the relationship between adolescents' emotional experience of conflict negotiation with parents and symptomatology may differ depending on the age and pubertal status of the adolescent. Future studies should increase their sample size so that age and pubertal status can also be considered.

To our knowledge, this was the first study using Gottman & Levenson's (1985) video-recall procedure with adolescents. The ability of adolescents' continuous self-reports of affect using a joystick while watching a videotape of their discussion to predict internalizing and externalizing symptoms supports the validity of using this procedure to assess adolescents' emotional experience of an event. It also suggests that adolescents' subjective understanding of their emotions plays an important role in understanding the impact of emotion on the development of internalizing and externalizing. This study focused on the proportion of negative, positive, and neutral affect experienced by the adolescent. Future studies might also look at the intensity and duration of each affect category, since these aspects of emotional experience and expression have also been theorized to lead to the development of psychopathology (Clark & Watson, 1994). It would also be interesting to combine parents' and adolescents' emotional experience of

conflict negotiation. Sequential analyses could examine the similarities and interdependencies of parents' and adolescents' affect which could provide useful insight into the processes of parental socialization of adolescents' emotions.

Table 1

Correlations Between Adolescents' Self-Reports of Affect (N = 47)

Mother-Adolescent Discussion			
Affect	Negative	Positive	Neutral
Negative	—	-.61**	-.52**
Positive	-.61**	—	-.36*
Neutral	-.52**	-.36*	—
Father-Adolescent Discussion			
Affect	Negative	Positive	Neutral
Negative	—	-.68**	-.32*
Positive	-.68**	—	-.48**
Neutral	-.32*	-.48**	—

** $p \leq .01$. * $p \leq .05$. ^t $p \leq .10$

Table 2

Adolescents' Mean YSR Internalizing and Externalizing Scores and Achenbach's (1991)
National Norms

	Internalizing			Externalizing		
	n	M	SD	n	M	SD
Time 1 (T1)						
Males	16	10.8	9.9	16	14.0	9.2
Females	26	15.6	11.4	26	14.0	7.8
Time 2 (T2)						
Males	15	12.3	9.2	15	13.7	5.7
Females	26	17.2	6.5	26	14.2	6.5
Time 3 (T3)						
Males	9	11.9	9.0	9	10.4	5.0
Females	23	14.7	9.2	23	14.2	6.6
National Norms						
Males	450	6.5	5.3	450	8.9	7.5
Females	459	7.5	6.6	459	7.4	6.7

Table 3

Adolescents' Mean Proportions of Negative, Positive, and Neutral Affect

Mother-Adolescent Discussion				
Type of Affect	Males (n = 18)		Females (n = 29)	
	M	SD	M	SD
Negative	.30	.28	.43	.26
Positive	.45	.25	.29	.24
Neutral	.25	.20	.28	.26
Father-Adolescent Discussion				
Type of Affect	Males (n = 18)		Females (n = 29)	
	M	SD	M	SD
Negative	.28	.27	.41	.26
Positive	.47	.28	.34	.29
Neutral	.25	.22	.24	.23

Table 4

Summary of Hierarchical Regression Analyses for T1 Internalizing Symptoms and T2 Affect Predicting T2 Internalizing Symptoms

Type of Affect	Sex	T1 Symptoms	T2 Affect	T1 Symptom/		Sex/ T1 Symptom Interaction	Sex/ T2 Affect Interaction	R ² Final Step	F Final Step
				T2 Affect	T1 Symptom Interaction				
Mother-Adolescent Discussion (βs shown for Final Step in Equation)									
Negative Linear Quadratic	.26 .64*	.25 -.14	.10 .35*	.19 .21	-.42 ^t —	.17 -.35		.33 .37	2.34 ^t 2.80*
Positive Linear Quadratic	.26 .40 ^t	.39 .28	.08 .01	-.14 -.25	-.52 —	-.27 .02		.33 .09	2.39 ^t 1.59
Neutral Linear Quadratic	.28 .45	.26 .10	-.14 .24	-.01 .05	-.26 —	.04 -.13		.27 .24	1.80 1.55
Father-Adolescent Discussion									
Negative Linear Quadratic	.21 .41	.21 -.02	.21 .14	.13 .16	-.36 ^t —	.24 -.08		.38 .29	2.93* 1.92
Positive Linear Quadratic	.23 .40 ^t	.20 .03	-.21 .25	-.14 .13	-.35 ^t —	-.31* -.13		.40 .28	3.23* 1.84
Neutral Linear Quadratic	.28 .35	.26 .09	-.08 .03	-.18 .13	-.26 —	.16 .09		.29 .24	1.98 1.53

*** p ≤ .001. **p ≤ .01. *p ≤ .05. ^tp ≤ .10

Table 5

Summary of Hierarchical Regression Analyses for T1 Externalizing Symptoms and T2 Affect Predicting T2 Externalizing Symptoms

Type of Affect	Sex	T1 Symptoms	T2 Affect	T1 Symptom/ T2 Affect Interaction	Sex/ T1 Symptom Interaction	T2 Affect Interaction	T1 Symptom/ Sex / T2 Affect Interaction	R ² Final Step	F Final Step
Mother-Adolescent Discussion (βs shown for Final Step in Equation)									
Negative Linear	.02	.58***	.17	-.26 [†]	-.09	.11	-.20	.48	3.75**
Quadratic	-.17	.32	.19	.27	—	.14	—	.44	3.76**
Positive Linear	.15	.75***	.20	.30	-.06	-.13	.23	.47	3.48**
Quadratic	.17	.53*	-.14	-.34 [†]	—	-.03	—	.43	3.59**
Neutral Linear	-.01	.62***	-.18	.09	-.13	.14	-.08	.39	2.54*
Quadratic	.03	.49**	.03	.20	—	-.08	—	.39	3.05*
Father-Adolescent Discussion									
Negative Linear	-.14	.40*	.41*	-.02	-.14	.14	.05	.49	3.82**
Quadratic	-.21	.35	.12	.06	—	.13	—	.50	4.89***
Positive Linear	-.23	.35 [†]	-.41*	-.05	-.26	-.34 [†]	-.29	.51	4.21**
Quadratic	-.23	.13	.24	.64 [†]	—	.32	—	.51	5.11**
Neutral Linear	.01	.54**	-.03	-.22	-.01	.05	.12	.39	2.58*
Quadratic	-.09	.60***	.14	-.02	—	.15	—	.37	2.82*

*** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. [†] $p \leq .10$

Table 6

Summary of Hierarchical Regression Analyses for T2 Internalizing Symptoms and T2 Affect Predicting T3 Internalizing Symptoms

Type of Affect	Sex	T2 Symptoms	T2 Affect	T2 Symptom/ T2 Affect Interaction	Sex/ T2 Symptom Interaction	Sex/ T2 Affect Interaction	R ² Final Step	F Final Step
Mother-Adolescent Discussion (βs shown for Final Step in Equation)								
Negative								
Linear	.15	.23	.30	.25	-.21	.18	.44	2.78*
Quadratic	.04	.29 [†]	.37*	—	—	—	.48	5.25**
Positive								
Linear	.09	.31 [†]	-.22	-.32 [†]	-.29	-.14	.41	2.39 [†]
Quadratic	-.11	.21	.33	.36	—	.21	.37	2.05
Neutral								
Linear	.13	.35	-.09	-.06	-.20	-.07	.24	1.08
Quadratic	.33	.42	.74	-.14	—	-.58	.24	1.12
Father-Adolescent Discussion								
Negative								
Linear	.30	-.09	-.13	.48 [†]	-.37 [†]	.35	.39	2.20 [†]
Quadratic	.45	-.24	.15	.91**	—	-.51	.52	3.80**
Positive								
Linear	.15	.22	-.09	-.29	-.30	-.09	.30	1.48
Quadratic	-.05	.05	-.24	.65*	—	.07	.36	2.01
Neutral								
Linear	.09	.16	.22	-.33	-.17	-.15	.26	1.26
Quadratic	.37	.23	.38	.27	—	-.74	.24	1.08

*** p ≤ .001. ** p ≤ .01. * p ≤ .05. [†] p ≤ .10

Table 7

Summary of Hierarchical Regression Analyses for T2 Externalizing Symptoms and T2 Affect Predicting T3 Externalizing Symptoms

Type of Affect	Sex	T2 Symptoms	T2 Affect	T2 Symptom/ T2 Affect Interaction	Sex/ T2 Symptom Interaction	Sex/ T2 Affect Interaction	R ² Final Step	F Final Step
Mother-Adolescent Discussion (βs shown for Final Step in Equation)								
Negative Linear	.09	.69*	.25	.15	-.08	.01	.57	4.65**
Quadratic	.32	.67**	.16	-.14	—	-.22	.57	4.68**
Positive Linear	.20	.54*	-.15	-.30	-.01	-.16	.52	3.72*
Quadratic	.16	.46*	.39	.35	—	.04	.56	4.43**
Neutral Linear	.18	.69**	-.14	-.41**	-.12	.23	.64	6.28***
Quadratic	.36	.95***	.71	-.56*	—	-.37	.63	5.82***
Father-Adolescent Discussion								
Negative Linear	.25	.54*	.08	-.16	.08	.15	.51	3.60*
Quadratic	.32	.46†	.14	.17	—	-.19	.50	3.44*
Positive Linear	.26	.51*	-.04	.28	.22	.01	.53	3.97**
Quadratic	.21	.85**	-.17	-.22	—	-.06	.51	3.57*
Neutral Linear	.19	.43†	.12	-.27	.14	-.10	.54	4.16**
Quadratic	.30	.65**	.36	-.10	—	-.25	.49	3.41*

*** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. † $p \leq .10$

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