

ABSTRACT

Title of Document: MATERNAL AND PATERNAL PERCEPTIONS OF HOSTILITY TOWARD THEIR ADOLESCENTS: LINKS TO ADOLESCENT PEER-REPORTED SOCIAL ACCEPTANCE AND SOCIAL BEHAVIOR.

Heidi Marie Butler, Master of Science, 2008

Directed By: Professor Jude Cassidy, Psychology

The goal of the present study was to examine the links between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior in eleventh grade students. Results revealed the following associations among study variables: (1) the association between parental perceptions of hostility and peer-reported social acceptance and social behavior exists; (2) the association between parental perceptions of hostility and adolescent perceptions of hostility exists; and (3) the association between adolescent perceptions of parental hostility and peer-reported adolescent social acceptance exists, however, the association between adolescent perceptions of parental hostility and peer-reported social behavior does not exist. The findings of this study provide a basis for future researcher examining the associations among parental perceptions of hostility, adolescents' perceptions of parental hostility, social acceptance, and social behavior.

MATERNAL AND PATERNAL PERCEPTIONS OF HOSTILITY
TOWARD THEIR ADOLESCENTS:
LINKS TO ADOLESCENT PEER-REPORTED
SOCIAL ACCEPTANCE AND SOCIAL BEHAVIOR

By

Heidi Marie Butler

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Advisory Committee:
Professor Jude Cassidy, Chair
Professor Kenneth Rubin
Professor Amanda Woodward

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Table of Contents

Table of Contents.....	ii
List of Tables.....	iv
List of Figures.....	v
Chapter I: Overview.....	1
Introduction.....	4
The Link between Parental Hostility and Child Functioning	4
Child Behavioral Outcomes.....	4
Child Relationship Outcomes.....	6
The Importance of Studying this Link in Adolescence.....	10
Proposed Moderation.....	13
Adolescent Gender as a Moderator.....	13
Adolescent Perceptions of Parental Hostility as a Moderator.....	15
Proposed Mediated Moderation.....	18
Alternative Model.....	21
The Present Study.....	22
Chapter II: Method.....	26
Participants.....	26
Procedure.....	27
Measures.....	27
Parental Hostility: Adolescent Perceptions.....	27
Parental Hostility: Parent Reports.....	28
Peer Acceptance Assessments.....	29
Peer Social Behavior Assessments.....	30
Chapter III: Results.....	32
Descriptive Statistics & Preliminary Analyses.....	32
Factor Analysis of Adolescent Perceptions of Parental Hostility Scale.....	33
Research Question One.....	34
Research Question Two.....	34
Research Question Three.....	36
Research Question Four.....	37
Research Question Five.....	38
Research Question Six.....	39
Chapter IV: Discussion.....	40
Core Findings: Links with Previous Research.....	40
Summary.....	40
Moderational Models.....	42
Mediational Models.....	44
Strengths of the Present Study.....	46

Limitations of the Present Study.....	48
Cross-sectional Data.....	49
Measures.....	49
Other Aspects of the Study.....	50
Sample.....	51
Future Directions.....	51
Conclusions.....	53
Chapter V: Appendices.....	70
A. Parental Hostility toward the Adolescent Questionnaire: Mother.....	70
B. Parental Hostility toward the Adolescent Questionnaire: Father.....	71
C. Adolescent Perceptions of Parental Hostility Questionnaire.....	72
D. Peer Social Acceptance Assessment.....	73
E. Peer Prosocial Behavior Assessment.....	74
F. Peer Aggressive Behavior Assessment.....	75
G. Peer Disruptive Behavior Assessment.....	76
Chapter VI: References.....	77

List of Tables

Table 1: Means, Standard Deviations, Sample Size, and Intercorrelations for Variables of Interest in the Present Study.....	54
Table 2: Means, Standard Deviations, Sample Size, and Intercorrelations for Variables of Interest in the Present Study for Girls Only.....	55
Table 3: Means, Standard Deviations, Sample Size, and Intercorrelations for Variables of Interest in the Present Study for Boys Only.....	56
Table 4: Factor Loadings from Principal Components Analysis of Adolescent Perceptions of Parental Hostility Scale: Communalities, Eigenvalues, and Percentages of Variance.....	57
Table 5: Regression Analysis Summary for Parental Perceptions of Hostility Variables Predicting Peer-reported Adolescent Social Acceptance and Social Behavior.....	58
Table 6: Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior with Parental Perceptions of Hostility with Adolescent Gender as a Moderator.....	59
Table 7: Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior with Parental Perceptions of Hostility with Adolescent Perceptions of Parental Hostility as a Moderator.....	60
Table 8: Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior with Parental Perceptions of Hostility with Adolescent Gender as a Moderator and Adolescent Perceptions of Parental Hostility as a Mediator.....	61
Table 9: Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior from Adolescent Perceptions of Parental Hostility with Parental Perceptions of Hostility as a Mediator.....	62
Table 10: Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior from Parental Perceptions of Parental Hostility with Parental Perceptions of Hostility as a Moderator.....	63

List of Figures

Figure 1: Model depicting three moderators (i.e., adolescent gender; c_1 , adolescent perceptions of parental hostility; c_2 , and parental perceptions of hostility; c_3) on the association between parental perceptions of hostility and adolescent peer-reported social acceptance and social behavior.....	64
Figure 2: Proposed moderated mediation model depicting the mediating role of adolescent perceptions of parental hostility on the association between parental perceptions of hostility and adolescent peer-reported social acceptance and social behavior, as moderated by adolescent gender with the paths a, b, and c.....	65
Figure 3: Proposed alternative mediation model depicting the mediating role of parental perceptions of hostility on the association between peer-reported adolescent social acceptance (and social behavior) and adolescent perceptions of parental hostility.....	66
Figure 4: Peer-reported social acceptance as a function of maternal perceptions of hostility for adolescent boys and girls.....	67
Figure 5: Peer-reported prosocial behavior as a function of maternal perceptions of hostility for adolescent boys and girls.....	68
Figure 6: Peer-reported disruptive behavior as a function of paternal perceptions of hostility for adolescent boys and girls.....	69

Maternal and Paternal Perceptions of Hostility toward their Adolescents:

Links to Adolescent Peer-Reported Social Acceptance and Social Behavior

Research has indicated that hostility is comprised of a variety of emotional and behavioral displays including physical violence, negative affect (in content and style of speech), aggression, resentment, verbal and non-verbal hatred, and oppositional behavior (Buss & Durkee, 1957). The target of a person's hostility typically experiences distress and/or discomfort (Buss & Durkee, 1957). Researchers have investigated negative outcomes associated with being the target of hostility including behavioral and social problems (Scaramella, & Conger, 2003).

Parental hostility, like other types of hostility, includes the same emotional and behavioral displays; yet parental hostility is unique because it involves hostility that is directed toward one's own child. Unlike situations involving other forms of hostility, children with hostile parents are less likely to be able to escape this type of hostility. Considering the distress accompanying hostility for the target, it is not surprising that parental hostility has implications for child functioning as the parent-child relationship is considered one of the most influential and important relationships in the course of life. A large and convergent body of research has linked parental hostility to child behavioral and relationship outcomes. In these studies (conducted primarily with children), hostile parental behaviors have been associated with a variety of negative aspects of child functioning (Erel, Margolin, & John, 1998; Harold & Conger, 1997; Stocker & Youngblade, 1999).

Furthermore, a large and convergent body of research has highlighted the existence of associations between family relationships (i. e., parent-child relationships)

and child outcomes (see Parke and Ladd, 1992 for review). It is important, therefore, to consider how aspects of the parent-child relationship (i. e., parental hostility) contribute to problems with child and adolescent functioning. One aspect of child functioning that has been of great importance to researchers is functioning with peers (see Rubin, Bukowski, & Parker, 2006, for review). Understandably, when considered as a whole poor peer interactions are considered to be problematic because peers “provide an important developmental context in which children and adolescents acquire a broad range of behaviors, skills, attitudes, and experiences” (see Rubin, Bukowski, & Parker, 2006, for review). These experiences with peers also provide children with a basis for functioning in subsequent extra-familial relationships (e.g., romantic relationships). Thus, if children and adolescents have difficulties with relating to peers, they could be considered at risk for social and emotional difficulties (Hymel, Rubin, Rowden, & LeMare, 1990; Kohlberg, La Crosse, & Ricks, 1972; Parker & Asher, 1987; Werner, 2004). Furthermore, social acceptance and social behavior are two ways in which researchers have examined interactions with peers and associated these interactions with child and adolescent outcomes (Asher & Dodge, 1986; Parkhurst & Asher, 1992).

Despite research indicating that parental hostility is linked to negative outcomes for *children*, relatively few studies have looked at the role that parental hostility plays in outcomes related to *adolescents* (i.e., beyond the seventh grade), more specifically, whether it is linked to adolescents’ peer-reported social acceptance and social behavior. Furthermore, little is known about whether adolescents’ gender influences the association between parental reports of hostility and peer status. Likewise, few studies have examined the role of adolescent perceptions of parental hostility and how these

perceptions influence the association between parental reports of hostility and adolescents' peer-reported social acceptance and social behavior.

Because of limitations in prior research, this study seeks to examine the link between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior in eleventh grade students. Specifically, this study addresses the following six research questions: (a) Are parental perceptions of hostility linked to the quality of adolescents' peer-reported social acceptance and social behavior?; (b) If a link exists between parental perceptions of hostility and the quality of adolescent's peer-reported social acceptance and social behavior, is this link moderated by adolescent gender?; (c) If a link exists between parental perceptions of hostility and the quality of adolescent's peer-reported social acceptance and social behavior, is this link moderated by adolescent perceptions of parental hostility?; (d) If a link exists between parental perceptions of hostility and the quality of adolescent's peer-reported social acceptance and social behavior and is moderated by adolescent gender, is this process subsequently mediated by adolescent perceptions of parental hostility?; (e) Alternately, is there support for a model wherein the link between adolescent peer-reported social acceptance (and social behavior) and adolescent perceptions of parental hostility is mediated by maternal and paternal perceptions of hostility?; and (f) Is there support for a model wherein the link between perceptions of hostility of one parent (i.e., mother or father) and the quality of adolescents' peer-reported social acceptance and social behavior is moderated by the other parent's perceptions of their hostility toward the adolescent?

This paper is organized as follows: In the introduction, I review literature describing the previous research related to each of the links described in the questions

above. I begin with a discussion of the link between parental hostility and broader child behavioral and relationship outcomes. Next, I discuss the importance of studying this link in adolescence. I follow with a review of research related to the potential moderators of this link (i.e., adolescent gender, adolescent perceptions of parental hostility, and parental perceptions of hostility). I continue with a review of the literature on the proposed model of mediated moderation. I follow with the presentation of an alternative mediation model. I end this section with a brief overview of the present study.

Following the introduction, I describe the methods used to address the questions outlined above. Finally, I present a data analysis plan and a list of my hypotheses.

Introduction

The Link between Parental Hostility and Child Functioning

A recent literature review revealed seven studies (to my knowledge) examining the role of parental hostility on child outcomes which are divided into two categories (i.e., behavioral outcomes and relationship outcomes). First, I describe the studies examining child behavioral outcomes and then I follow with studies examining child relationship outcomes.

Child behavioral outcomes. In an attempt to understand how parental hostility influences child outcomes researchers have examined whether parental hostility is linked to child behavioral outcomes. In this section, I discuss three studies representing the examination of the link between parental hostility and child behavioral outcomes.

First, in a study of seventh graders, and their married biological parents, Harold and Conger (1997) examined the role of parental hostility on child internalizing and externalizing problems. Parental hostility was assessed by using parent reports of

parental hostility. Additionally, observations of maternal and paternal hostility toward the child were coded from separate mother-child and father-child dyadic interactions in a family discussion of disagreements within the family. In this study, parental hostility was related to boys' and girls' internalizing and externalizing problems (as assessed using the Symptom Checklist-90-Revised; Derogatis & Cleary, 1977) one year later. One benefit of this study was that parental hostility was assessed separately for mothers and fathers. Although differences in child outcomes did not differ by parent gender it is important to investigate the effects of maternal and paternal hostility separately.

In another study, Kim, Hetherington, and Reiss (1999) used a home observation task of 13-year olds, their parents, and siblings to examine incidents of parental hostility within the family. Parental hostility was assessed by combining observational and child questionnaire measures of parental hostility. During the observation task parents and children engaged in a discussion of problematic areas within their relationship. Mother-child and father-child dyads were examined separately and results indicated that higher levels of parental hostility (i.e., both maternal and paternal hostility) were related to higher levels of 13-year-olds' internalizing and externalizing behaviors as reported by parents on the Child Behavior Checklist (CBCL: Achenbach, 1991). This study was strengthened by the use of both observational and questionnaire measures to assess maternal and paternal hostility.

Likewise, Simons, Chao, and Conger (2001) examined the role of parental hostility in seventh graders behavioral outcomes. Oppositional and defiant behaviors were assessed using child self-reports of delinquency and affiliation with deviant peers. Results revealed that higher levels of child-reported maternal and paternal hostility were

associated with higher levels of child-reported oppositional and defiant behaviors in the seventh grade. The results of this study are muddied by the use of only child reports of parental hostility and behavioral outcomes.

Collectively these three studies suggest that parental hostility, from both mothers and fathers, is associated with child behavioral problems. These studies, however, are not without limitations. One limitation of these three studies is that current knowledge on the outcomes associated with parental hostility is limited to behavioral outcomes that occur during childhood. From these studies it is difficult to understand how parental hostility influences outcomes in offspring beyond the seventh grade. Furthermore, this set of studies is limited to behavioral correlates of parental hostility. Although behavior is an important aspect of functioning, a more salient indicator of the outcomes associated with parental hostility would include assessments of other relationships. Fortunately, other researchers have investigated correlates of parental hostility that extend beyond behavioral outcomes (i.e., relationship outcomes).

Child relationship outcomes. To extend the literature review on the role of parental hostility beyond behavioral outcome, I discuss research that investigates the influence of parental hostility on other social relationships (i.e., sibling and peer relationships).

In a study of sibling relationships, Erel, Margolin, and John (1998) examined the role of maternal hostility on sibling relationships for children between the ages of 3 (younger sibling) and 8 (older sibling). Maternal hostility was assessed using maternal reports of her relationship with each child individually. Sibling relationship outcomes were assessed during a 10-minute free play task that occurred in the laboratory while the

mother was in the room. Results revealed an association between increased maternal hostility and an increase in the negative interactive behaviors (e.g., physical and nonphysical aggression and dominating behavior) older siblings directed toward their younger siblings. Results suggest that maternal hostility is associated with sibling relationship functioning during childhood; however this study has several limitations. Parental hostility was assessed with a measure that was completed only by the mothers. This limits our understanding of how hostile the parent may actually be. Evidence in this study would be strengthened by the use of a measure tapping children's ratings of maternal hostility. Secondly, this study only discusses maternal hostility. A more representative study would assess both maternal and paternal hostility. Finally, this study failed to extend knowledge about the role of parental hostility in other social relationships outside the family context. To further our understanding on the role of parental hostility in behavior in other social relationships, researchers must address extra-familial relationships.

In attempt to understand how parent-child relationships influence other social relationships outside the home, Gottman and Katz (1989) examined the role of maternal hostility on the peer interaction of 4- and 5-year-olds. In this study, maternal hostility was assessed by observing a mother-child interaction task in which mothers were asked to obtain information from their child pertaining to a story that the child had heard from an experimenter. The mother was not in the room when the child heard the story. Results indicated that increased levels of parental hostility were associated with decreased play interaction and increased negative peer interaction as assessed in a free-play observation of the target child with their best friend. This study provides evidence

that in early childhood, parental hostility influences children's interactions with other social partners (i.e., peers). Considering the importance of peers throughout childhood and into adulthood, it is important to extend these findings into other age groups.

In an attempt to extend our knowledge beyond early childhood, Stocker and Youngblade (1999) examined the impact of maternal and paternal hostility on the child sibling and peer relationship outcomes of 10-year-olds. Maternal and paternal hostility was assessed with both observational and questionnaire measures. Children reported on mothers' and fathers' emotional expressiveness toward themselves. Observational data was collected during a 20 minute laboratory exercise in which families spent time playing a game and discussing both enjoyable activities and areas of conflict in their family. Composite scores were created by standardizing and combining each parent's scores on the observational and questionnaire measures. Results illustrated that higher levels of maternal as well as paternal hostility were associated with higher levels of sibling conflict, with a younger sibling, as assessed by interviewing the children on the Sibling Relationships Questionnaire (SRQ; Furman & Burhmester, 1985). Separate analyses of maternal and paternal hostility illustrated that higher levels of maternal hostility were associated with lower levels of sibling warmth, whereas, higher levels of paternal hostility were associated with higher levels of sibling rivalry and problematic peer relationships as reported by mothers on the Peer Relationships Questionnaire (Stocker & Dunn, 1990). This study provides a lot of information about the influence of parental hostility on social relationships, particularly sibling and peer relationships. This study, however, fails to extend our knowledge about the role of parental hostility beyond childhood. Furthermore, the information on peer relationships from this study is limited

to maternal reports, which are known to be less accurate than reports by children or peers (Bost, 1995).

In an attempt to understand the influence of parental hostility on peer relationships, Paley, Conger, and Harold (2000) looked at the association between parental hostility and sibling reported social behavior with peers in the seventh grade. Parental hostility was assessed from observations of each parent and child in two separate interaction tasks in their home. During the first 30 minute task, adolescents, parents, and siblings were asked to discuss a set of questions related to family issues (e.g., parenting, chores, and family events). During the second task, families were asked to discuss and resolve three areas of disagreement that each of the family members had previously rated as being problematic within their family for 15 minutes. Adolescent social functioning was assessed using a two item sibling report of social behavior. Results indicated that greater levels of observed maternal and paternal hostility were associated with greater amounts of negative social behavior (i.e., inconsiderate or mean) as reported by siblings. Although this study investigated and revealed an association between parental hostility and peer outcomes, the results are limited by the use of siblings as reporters of child peer social behavior considering siblings may be biased in their reports on sibling social behavior.

Considered as a whole, this group of research studies supports the notion that parental hostility is linked to poorer child outcomes, particularly in regard to relationship functioning. A number of these studies have suggested that parental hostility influences peer outcomes, however, little is known about the role of parental hostility in peer outcomes beyond childhood. Moreover, even less is known about the processes that may

account for this association. The current study extends these findings by extending the current knowledge on the role of parental hostility in peer relationship outcomes.

Furthermore, this study seeks to extend current knowledge on the role of parental hostility beyond childhood and gain insight on the role of parental hostility as it relates to peer outcomes during adolescence.

The Importance of Studying Adolescence

Previous research has indicated that parental hostility is associated with aspects of children's social behavior through the seventh grade. It is likely that parental hostility is also associated with how individuals interact with peers beyond the seventh grade into adolescence. Examining the role of parental hostility during this stage of development is advantageous for two reasons. First, it provides a cohesive narrative about the role of parental hostility as it extends from childhood into adolescence. Second, it provides a more complex understanding of the roles that both parents and peers play during adolescence.

Adolescence is an important stage in development which is characterized by a number of changes in the individual (i.e., emotional, physical, cognitive). During this stage, adolescents are learning new ways to navigate their changing social world, and the influence of their social partners is thought to play a crucial role in this learning (see Crockett & Silbereisen, 2000 for review). Considering the sizeable amount of time that adolescents spend in school and at home, understanding the importance of both peers and parents as social partners is an important step in understanding this stage of development (Larson & Richards, 1991).

From a developmental perspective, adolescence is a time of physical, emotional, and social change. Furthermore, difficulties may arise as a result of such change. At this time, adolescents begin to take more control over many aspects of their lives, including more autonomy and control over their behavior (Youniss & Smollar, 1985). As a result of this shift, family relationships tend to change during this period of development (Grotevant & Cooper, 1986; Steinberg, 1990). Although parents may consider this drive for autonomy to be a threat to the parent-child relationship, a number of contemporary theories suggest that parents continue to assume an important role throughout adolescence (e.g., Attachment Theory, Family Systems Theory, and Lifespan Development Theory). These theories converge in suggesting that although adolescents are becoming more autonomous from parents, they still want to maintain relatedness and emotional connectedness to their parents; see Allen & Land, 1999; Douvan & Adelson, 1966; Holmbeck & Hill, 1986).

Consistent with this perspective, it is believed that, in addition to parents, peers also serve an important developmental function during adolescence and contribute to social development in a number of ways. For example, adolescents spend more time with their peers in both large and small social groups (Connolly, Furman, & Konarski, 2000) and learn important aspects of social interaction from these groups. Interactions with peers offer adolescents a place to experiment with different aspects of themselves (Arnett, 2000), provide social support and intimacy (Rubin, Bukowski, and Parker, 1998) as well as offer a pool of individuals from which to find romantic partners (Connolly, et al., 2000). Furthermore, Hazan and Zeifman (1994) found that although adolescents prefer to spend leisure time with peers, if difficult situations should arise, adolescents

choose parents over peers as a source of support. Taken as a whole, this research indicates that parents remain an important source of support during adolescence and continue to play an important role in adolescent wellbeing despite an increase in peer interaction during the shift toward autonomy.

In addition, another body of literature has suggested that peers play a role in the lives of adolescents that may be equal to or greater than that of parents. According to Harris (1995), parents have virtually no influence over the social outcomes of children and adolescents and social behavior is, therefore, a product of being a part of the larger peer group. Considering the idea that learned behavior is highly context specific (Ceci, 1993; Tooby & Cosmides, 1992) and that, as a result of autonomy, adolescents spend a significant amount of time away from parents, it is likely that peers play a large role in shaping behavior. Evidence suggests that peers exert influence over adolescent behaviors and attitudes (Berndt, 1979). This thinking suggests that out-of-home socialization (i.e., socialization unrelated to parents) is the impetus that shapes social and behavioral outcomes of adolescents. If this is true, it is likely that, aside from genes, parents contribute very little to the outcomes of children and adolescents.

Given that adolescence is a transitional period, in which adolescents are becoming more autonomous from parents and spending more time with the peer group, it is unclear how parental hostility relates to peer-reported social acceptance and social behavior during this stage. On one hand, parents may continue to play a salient role in the lives of adolescents and, although adolescents are older and more capable of thinking on their own (as compared to seventh graders), social relations may still be influenced by interactions with parents. This would suggest that the role of parental hostility during

adolescence would be similar to its role during other earlier stages of development. On the other hand, because adolescent shifts toward autonomy may cause peers to assume a more important role than parents; social relations may no longer be influenced by interactions with parents. In this case, increasing autonomy from parents may cause adolescents to be less affected by parental hostility because they are less influenced by parenting, in general, and therefore, subsequent parenting behavior makes no difference in peer relations. Thus it may be that the role of parental hostility is different for adolescents and younger children. Considering the importance of parents and peers during adolescence, this developmental stage is pivotal for understanding the influence of parental hostility as it relates to peers and parents.

Proposed Moderation

In this section, I present previous research examining how adolescents' gender and perceptions of parental hostility are linked to parental perceptions of hostility and adolescent outcomes. Although no study (to my knowledge) has examined whether adolescent gender or adolescents' perceptions of parental hostility moderates associations between parental hostility towards their adolescent and adolescent peer social acceptance and social behavior, my discussion of this previous research provides a solid theoretical basis for exploring these two moderational models in the proposed study.

Adolescent gender as a moderator. Several studies have examined the effects of gender on child and adolescent outcomes, and research indicates that child outcomes related to parent-adolescent relationships vary by children's gender (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003; Gutman & Sameroff, 2004). Furthermore, interactions and experiences with both parents and peers differ as a function of gender

(Rose & Rudolph, 2006; Russell & Saebel, 1997). For example, in interactions with parents, adolescent males are more likely than adolescent females to intervene in interparental difficulties (Laumakis, Margolin, & John, 1998). On the other hand, adolescent males and females are likely to have different experiences with other social partners (e.g., friends; Buhrmester & Furman, 1987). Taken together, these findings suggest that gender influences behavior and outcomes in social contexts (i.e., with parents and same-age social partners).

Previous research suggests that in some circumstances, parents treat boys and girls differently (Mills & Rubin, 1990; Parke & Slaby, 1983) and as a result girls and boys may have different outcomes in social contexts. For example, in a study of 227 families, Sturge-Apple, Davies, Boker, and Cummings (2004) examined differences in parental treatment for boys and girls when parents were distressed. As a result of interparental discord (i.e., hostility and disagreement between parents) parents were less responsive and more psychologically controlling toward boys (not girls). Although gender differences did not arise for punitive parenting, these results suggest that parents tend to be harsher with boys, especially during times of distress. (Importantly, this study is limited by the lack of child-reported parental behavior.) It is likely that these differences in parental treatment of boys and girls influence subsequent social and behavioral outcomes (i.e., with peers).

Furthermore, the role of gender in social relationships outside the home has been widely studied, and differences between boys and girls have been identified for relationships with friends as well as with the broader peer group (Buhrmester & Furman, 1987; Lempers & Clark-Lempers, 1992; Rose & Rudolph, 2006). Despite mixed results

regarding gender differences in the frequency of interaction with the larger peer group (i.e., boys spend more time engaging in larger peer group interaction than girls; Fabes, Martin, & Hanish, 2003, Martin & Fabes, 2001), researchers agree that both structure and content of peer interaction are influenced by gender (i.e., self disclosure, social behavior, and group membership; see Rose & Rudolph, 2006 for review). Additionally, social behavior (i.e., aggressive, disruptive, and prosocial behavior) varies as a function of gender (see Rose & Rudolph, 2006; Rubin, Bukowski, and Parker, 1998 for review); and in general, research indicates that social interactions with peers are different for boys and girls.

Taken as a whole, these studies indicate that child gender plays an important role in the understanding of both parent-child relationships as well as peer relations. A critical next step is in understanding whether gender alters the degree of association between important indicators of family and child-parent well-being – parental hostility toward their children – and aspects of adolescent functioning with peers. Considering the limited knowledge on gender differences in the association between broader peer group outcomes (i.e., social acceptance and social behavior) and parent-reported hostility, this study seeks to extend previous research and gain insight about the associations among these variables.

Adolescent perceptions of parental hostility as a moderator. Several contemporary developmental theories (e. g., attachment theory) have hypothesized that individuals internalize their experiences within the family in the form of perceptions and mental images. Moreover, many theories claim that individuals use automatic social information processing techniques, particularly in highly emotionally arousing situations,

to process information efficiently (Bretherton, 1990; Constanzo & Dix, 1983; Crick & Dodge, 1994). Because parental hostility is often emotionally arousing, it is possible that children and adolescents will process these negative parental behaviors automatically and develop perceptions based on these negative experiences with parents. Crick and Dodge (1994), for example, have shown that this automatic processing occurs in conditions in which an individual interprets a situation as being hostile. Considering the automatic nature of these interpretations of parental hostility, it is expected that similar interpretations would occur for children and adolescents alike. It is important, therefore, to understand whether or not children and adolescents are making these interpretations of parental behavior in order to fully understand how parental hostility leads to child and adolescent outcomes.

Previous research has indicated that children are quite skilled at understanding and interpreting parental behavior. For example, McDonald and Grych (2006) showed that parent reports of interparental conflict were related to child reports of interparental conflict. Similarly, Laible, Carlo, and Torquati (2004) showed that children's representations of parents' parenting style are related to parental reports of parenting style. Taken together, these studies suggest that parental behavior is viewed similarly by parents and children and children are adept in understanding parental behavior.

Furthermore, two studies (to my knowledge) have examined child representations of their parent's hostility toward them. In one study, Harold and Conger (1997) examined the role of parental hostility on child functioning. In this study, parental hostility was assessed using parent reports of their hostility toward their child. Parents reported on 11 items describing instances of parental hostility directed toward the child during the past

month. Similarly, children reported on their perceptions of parental hostility on an equivalent 11-item measure. Although assessed separately, parent and child reports of parental hostility were moderately correlated ($r_s = .25$ to $.40$). Mother-reported parental hostility was correlated with child perceptions of maternal hostility and similarly father-reported hostility was correlated with child perceptions of paternal hostility. These findings indicate that seventh-graders are able to interpret and report on parental behaviors directed toward them. Further, these parent and child interpretations were related to internalizing and externalizing behavioral problems in the children studied. This study was strengthened by the comparison of both parent and child perceptions of parental hostility; however, little is known about how child perceptions of parental hostility influence outcomes beyond seventh grade.

In a later study of seventh graders, Paley, Conger, and Harold (2000) examined the accuracy of child-reported parental hostility in seventh graders. In this investigation, child reports of maternal and paternal hostility were compared to stranger (i.e., investigator) reports of parental behavior directed toward these children in a laboratory task. Results suggest that coded observations of maternal and paternal hostility were indeed related to seventh graders' representations of ability to trust and obtain emotional support from mothers and fathers and that strangers and children matched in their representations of parental behavior. These findings suggest that children are a good source of information regarding parental behavior. This study is limited by the lack of parent-reported behavior. Additional information could be gained by the use of parent reports of their own behavior.

The research highlighted above suggests that children are cognizant of negative parental behaviors (i.e., parental hostility), and are able to report on them. Furthermore, these negative parental behaviors are linked to child outcomes. Unfortunately, most of the research conducted regarding child perceptions of parental hostility has been completed with children in the seventh grade. The present study extends these findings by examining child perceptions of parental hostility into *adolescence*. Furthermore, this study seeks to investigate the role (i.e., moderational and/or mediational) that adolescent perceptions of parental hostility play in the link between parental perceptions of hostility and adolescent peer relationship functioning.

Mediated Moderation

Whereas moderation refers to whether a given effect between two (independent and dependent) variables differs as a function of a moderator variable (e.g., adolescent gender, adolescents' perceptions of parental hostility), mediated moderation refers to the process whereby moderation emerges, yet the moderated relation between the independent and dependent variables are mediated by a third (i.e., process/mediator) variable (Muller, Judd, & Yzerbyt, 2005). Considering the research above highlighting the importance of both adolescent gender and adolescent perceptions of parental hostility, it is important to explore the possibility that mediated moderation may exist such that the link between parental perceptions of hostility and adolescent peer social acceptance and social behavior is both simultaneously (a) moderated by adolescent gender, and (b) mediated by adolescents' perceptions of parental hostility. More precisely, it is possible that moderation may further alter the associations between parental perceptions of hostility, adolescents' perceptions of parental hostility, and adolescent peer-reported

social acceptance and social behavior such that the mediational model exists for one gender but not the other. For example, boys may be more sensitive to parental perceptions of hostility than girls and may be more likely than girls to perceive their parents as being hostile. Thus, the association between parental perceptions of hostility and adolescent peer-reported social acceptance and social behavior may only emerge for boys. Thus, in the presence of such moderation, the mechanism by which parental perceptions of hostility is linked to adolescent peer-reported social acceptance and social behavior is adolescents' perceptions of parental hostility (i.e., parental hostility is linked to adolescent peer-reported social acceptance and social behavior because when parents are hostile, adolescents' perceive such hostility, and it is these perceptions of hostility which, in turn, affect adolescent social and emotional well-being, particularly in regard to peers; the association between parental perceptions of hostility and adolescent peer-reported social acceptance and social behavior is essentially indirect because it is mediated by the degree to which adolescents perceive the hostility). On the other hand, boys and girls may be influenced by parental hostility similarly, yet girls' (but not boys') perceptions of this hostility may relate to interactions with the broader peer group. Thus, the mediated link between parental perceptions of hostility and adolescent peer-reported social acceptance and social behavior may only emerge for girls. These are interesting research questions that I address in the proposed investigation. Below, I review literature supporting the examination of a mediated-moderation model.

Previous research has shown that child perceptions and interpretations of parental behavior mediate the link between parenting and child outcomes (Grych & Fincham, 1990). Following these findings, I will discuss the possible mediating role of adolescent

perceptions of parental hostility in the association between parental hostility and adolescent peer-reported social acceptance and social behavior. For example, as discussed above, Harold and Conger (1997) examined the association between parental hostility and children's behavioral problems (i.e., internalizing and externalizing behavior) in the seventh grade. More specifically, these researchers were interested in the role child perceptions of parental hostility held in this association (i.e., a mediational model). Parental hostility was measured using 11 parent-reported items rated on a 5-point Likert-type scale. Similarly, child perceptions of parental hostility were assessed using a parallel 11-item questionnaire on which parental hostile, coercive, and angry behavior over the past month was indicated. Results indicated that parent-reported hostility toward the child was related to children's perceptions of parental hostility, and that these perceptions of parental hostility predicted children's internalizing (girls and boys) and externalizing behavior problems (boys only). This study demonstrates a mediational model in which parental hostility is linked to internalizing and externalizing behaviors for offspring who perceive their parents as being hostile.

Based on the evidence above, it appears that children's perceptions of parental hostility serve as a mediating mechanism explaining the link between parental hostility and child outcomes. Considering the association between parental hostility and child functioning with peers, it is likely that children's perceptions of parental hostility would act similarly as a mediating mechanism for this association. Furthermore, recognizing the importance of gender as a moderator of the association between parental hostility and child functioning with peers, I believe it is important and interesting to test a mediated moderation model for this association.

Alternative Model

Throughout the majority of this introduction, I have proposed one plausible model to explain the associations among the study variables: parental hostility influences peer-reported social acceptance and social behavior. It is possible, however, that these variables are associated in other important ways. It is possible that peer-reported adolescent social acceptance and social behavior influence the ways in which adolescents perceive their parents' behavior toward them (i.e., as hostile or non-hostile). For example, adolescents who are rated socially accepted or prosocial by peers may be less likely to view parental behavior as hostile because these positive interactions with peers shape how adolescents view interactions with important others (i.e., parents). Furthermore, adolescents who are reported as aggressive and disruptive by peers may view parental behavior as more hostile as a result of these negative peer reports.

Previous research has highlighted the associations between peers and parents (Parke & Ladd, 1992), and according to Harris (1995) during adolescence, peers contribute more than parents to social outcomes of individuals. Consistent with this line of thinking, it is possible that peer evaluations of adolescents are driving the associations between adolescent social acceptance (and social behavior) and perceptions of parental hostility. Because adolescents become more concerned with how they appear to others (i.e., peers) at this stage of development (Elkind, 1985) peer-reports of adolescent social acceptance and social behavior are likely to influence adolescents in a number of ways (i.e., emotionally and behaviorally). These peer-reports of adolescent social acceptance (and social behavior) may, therefore, influence perceptions of parental hostility by contributing to interactions between parents and adolescents in the home. For example,

adolescents who are not accepted by peers at school are likely to bring their feelings about these social interactions home with them. These adolescents may come home and act in negative ways toward their parents (e.g., hostile, avoidant, aggressive, withdrawn) and evoke their parents to become hostile toward them. Furthermore, because adolescents are aware of this parental hostility they are able to report on it. This pattern of interaction suggests that parenting behavior (i.e., parental perceptions of hostility) mediates the association between peer-reported adolescent social acceptance (and social behavior) and adolescent perceptions of parental hostility (see Figure 3).

Considering previous evidence suggesting the study variables may be associated in a number of complex ways, the present investigation will examine an alternative model depicting associations among study variables. Based on these preliminary hypotheses, parental perceptions of hostility will be examined as a mediator of the relationship between peer-reported social acceptance (and social behavior) and adolescent perceptions of parental hostility.

The Present Study

The present study addresses the previously described models in a set of previously collected data. Data for the present study come from 189 11th-grade students, their parents, and same age classmates who enrolled in a larger study of adolescent relationships. Throughout the rest of the proposal I will refer to the 11th-grade target students as “adolescents” and their same age peers as “classmates.”

As described in the method section, parental perceptions of hostility were assessed using four parent-reported items and adolescent perceptions of parental hostility were measured using a similar 11-item measure completed twice by each adolescent (i.e.,

once for each parent). Peer social acceptance and social behavior were measured using four peer reported scales (i. e., acceptance, prosocial behavior, aggressive behavior, and disruptive behavior).

This study extends current research in the following ways. First, previous research has examined the association between parental perceptions of hostility and peer outcomes in children through the seventh grade. The present study extends previous literature by examining the influence of parental perceptions of hostility on peer-reported social acceptance and social behavior during *adolescence*. Second, previous literature has examined the role of parental hostility on children's peer outcomes; however, these studies have relied on sibling and maternal reports of peer group functioning. In the present study, I examine the role of parental perceptions of hostility on *peer-reported* social acceptance and social behavior during adolescence. Peer reports are widely used and often provide accurate reports of behavior. (Zimmerman, 1994). Third, to my knowledge, previous research has not examined the association between parental perceptions of hostility and peer social acceptance and social behavior. The present study examines these peer-related outcomes for the first time. Fourth, this study extends current research by examining adolescent gender and adolescent perceptions of parental hostility as potential moderators of the link between parental perceptions of hostility and peer social acceptance and social behavior. To my knowledge, this is the first study to examine adolescent gender and adolescent perceptions of parental hostility as potential moderators of the proposed association (i.e., the association between parental hostility and adolescent peer social acceptance and social behavior). Fifth, to further knowledge on the mechanisms by which parental perceptions of hostility is associated with

adolescent peer-reported social acceptance and social behavior, the present study examines a mediated moderation model. This is the first time, to my knowledge, that this mediated moderation model will be tested on the association between parental hostility and peer social acceptance and social behavior. Finally, for the first time, an alternate model will be tested to examine the associations among the study variables. To examine the above stated extensions of current research my research questions and hypotheses are as follows:

- (1) *Are parental perceptions of hostility linked to the quality of adolescents' social acceptance and social behavior?* I hypothesize that parental perceptions of hostility will be linked to the quality of adolescents peer social acceptance and social behavior.
- (2) *If a link between parental perceptions of hostility and the quality of adolescent's social acceptance and social behavior exists, is this link moderated by adolescent gender? (see Figure 1).* I hypothesize that the link between parental perceptions of hostility and the adolescents' social acceptance and social behavior will be moderated by adolescent gender such that the association will be stronger for boys than for girls.
- (3) *If a link between parental perceptions of hostility and the quality of adolescent's social acceptance and social behavior exists, is this link moderated by adolescent perceptions of parental hostility? (see Figure 1).* I hypothesize that the link between parental perceptions of hostility and the adolescent's peer social acceptance and social behavior will be moderated by adolescent perceptions of

parental hostility such that this association will be stronger for adolescents who perceive their parents as being more hostile, and;

- (4) *If a link between parental perceptions of hostility and the quality of adolescent's social acceptance and social behavior exists and is moderated by adolescent gender, is this process subsequently mediated by adolescent perceptions of parental hostility? (see Figure 2).* I hypothesize that the link between parental perceptions of hostility and adolescent peer social acceptance and social behavior is moderated by adolescent gender and subsequently mediated by adolescent perceptions of parental hostility such that the association will be stronger for boys than girls because boys perceive their parents as being more hostile than girls.
- (5) *Alternately, is there support for a model wherein the link between adolescent peer-reported social acceptance (and social behavior) and adolescent perceptions of parental hostility mediated by maternal and paternal perceptions of hostility? (see Figure 3).* I hypothesize that the link between peer-reported adolescent social acceptance (and social behavior) and adolescent perceptions of parental hostility does exist and that this association is moderated by parental perceptions of parental hostility, such that the mechanism by which this association exists is through parents perceptions of their own hostility directed toward their adolescent.
- (6) *Finally, is there support for a model wherein the link between perceptions of hostility of one parent (i.e., mother or father) and the quality of adolescents' peer-reported social acceptance and social behavior is moderated by the other*

parent's perceptions of their hostility toward the adolescent? (see Figure 1). I hypothesize that the link between parental perceptions of hostility (i.e., maternal or paternal) and the quality of adolescents' peer-reported social acceptance and social behavior does exist and that this association is moderated by the other parent's perceptions of parental hostility such that the association between parental hostility and peer-reported social acceptance and social behavior is stronger for adolescents with two parents reporting similarly on parental hostility.

Method

Participants

Participants consisted of 189 eleventh-grade students (118 girls and 71 boys), their parents, and the same age classmates of these adolescents, who were all part of a larger study of families and peers in late adolescence. Adolescents and their classmates were recruited from seven racially and economically diverse suburban public high schools in the Washington, DC metropolitan area. Reflective of the schools from which they were drawn, adolescents identified themselves as White/Caucasian (73%), Black/African American (14%), Asian (10%), or Hispanic (3%). Based on study selection criteria, all adolescents lived in two-parent families, the annual household income was greater than \$41,000. Participants received monetary compensation for their participation in the larger study. Sample sizes vary slightly across analyses due to missing data. Permission for the recruitment of human subjects for this study was granted by Institutional Review Board at the University of (see Appendix A).

Procedure

Data reported for this particular study were gathered at two time points spanning approximately four months. In the spring of their 11th grade year, adolescents and their classmates completed questionnaire packets during two 50-minute classroom data collection sessions. Packets included the five peer behavioral assessments about peers and a peer social acceptance assessment. The following summer, adolescents and their parents came into the laboratory and completed questionnaire packets which included measures of adolescent reported parental hostility as well as parent self-reported hostility toward the adolescent. A number of other behavioral and questionnaire measures were completed during this laboratory visit but were not used in this investigation.

Measures

Parental hostility: Adolescent perceptions. The 12-item hostility subscale based on Harold and Conger's (1997) questionnaire of child perceptions of parental warmth and hostility was used. One extra item was added for use with this sample population. Adolescents completed two identical forms of this measure, once for each parent. Directions were written at the top of each form as follows: "Please think about times during the past month when you and your mother/father have spent time talking or doing things together. Indicate how often your mother/father acted in the following ways towards you during the past month." Sample items include: "got angry at you," "criticize you or your ideas," "shout or yell at you because she/he was mad at you," "ignore you when you tried to talk to her/him." Adolescents used a 7-point Likert-type response scale ranging from "always" (1) to "never" (7) to rate their perceptions of parental hostility. Scores on this subscale will be reversed for each item and then summed, with possible

total scores ranging from 12 to 84 for each parent. Higher scores indicate greater levels of adolescent reported parental hostility (see Appendix B).

This measure has demonstrated good psychometric properties. Previous studies have established internal consistency and construct validity using the Harold and Conger (1997) measure with ethnically and economically diverse samples (Amato & Fowler, 2002; Buehler & Gerard, 2002; Conger, Wallace, Sun, McLoyd, & Brody, 2002; Gerard, Krishnakumar & Buehler, 2006; Harold & Conger, 1997).

Parental hostility: Parent reports. Four of the twelve adolescent-reported items described above were adapted for the parent questionnaire. Comparable to the questionnaire filled out by the adolescents, the parent measure was designed to tap parent-reported hostility toward their adolescent. Mothers and fathers completed the measure separately reporting on their individual behavior toward their adolescent. Directions were printed as follows: “Please circle a number to indicate how often during the past month you have behaved in the following ways toward your teen. During the past month I...” The four items were: “got angry at him or her,” “criticized him or her for his or her ideas,” “shouted or yelled at him or her because you were mad at him or her,” and “argued with him or her whenever you disagreed about something.” Parents responded to these items using a 7-point Likert-type response scale ranging from “always” (1) to “never” (7). Summary scores will be created for each parent by summing the reversed score of their responses on each of the four items. Summary scores for each parent can range from 4 to 28, with higher scores indicating greater levels of parent-reported hostility toward the adolescent (see Appendix C).

Psychometric properties for this 4-item measure have not been established. It is expected that sound psychometric properties will be demonstrated as has been the case with similar measures tapping parent-reported behavior toward their child (Buehler & Gerard, 2002; Chang, Lansford, Schwartz, & Farver, 2004).

Peer acceptance assessments. Adolescents and their classmates reported on social acceptance using a well-known measure developed by Asher and Dodge (1986). Each participant was given the measure with the following set of directions written at the top: “How much do you like to be in activities with this person?” Below these directions was a randomly generated roster of 75 names of students in his/ her school who were also participants in the study (see Appendix D). In addition, each participant’s name appeared randomly on 75 rosters completed by other study participants in their school. To the right of each randomly generated name was a 5-point Likert-type scale ranging from “not at all” (1) to “a lot” (5). Participants used this Likert-type scale to rate their willingness to interact with each of the 75 students on their roster. These ratings were used to calculate a social acceptance score for each adolescent. Social acceptance scores were calculated by obtaining the mean of all the ratings for each participant and then standardizing this mean within his/her respective school with higher scores indicating greater peer acceptance. Furthermore, to reduce error in adolescent reports, to the right of the Likert-type scale was an option for adolescents to report that they did not know this student. By providing participants with the opportunity to indicate they did not know a particular student, we were able to reduce the likelihood of false nominations, and generate a more reliable assessment of social acceptance. Instances in which adolescents were not known by their classmates were not used in analyses.

This social acceptance measure has demonstrated sound psychometric properties and has been linked with various outcomes including academic performance and social competency (Wentzel, 2003; Wentzel & Asher, 1995). Researchers have reported good test-retest reliability using this measure in samples of children from preschool through the age of 14 (Asher & Dodge, 1986; Diehl, Lemerise, Caverly, Ramsey & Roberts, 1998; Gleason, 2004; Ollendick, Weist, Borden, & Greene, 1992; Parker & Asher, 1993; Putallaz & Wasserman, 1989; Rydell, Hagekull & Bohlin, 1997; Walker, 2004).

Peer social behavior assessments. Adolescent prosocial, aggressive, and disruptive behaviors were assessed using a modified version of a widely used social behavior method developed by Parkhurst and Asher (1992). Adolescents and their classmates were given three peer-nomination forms with directions printed at the top instructing participants to nominate students in their class who met the description that followed. Each form included one of the following three descriptions: (a) “is cooperative, helpful, and does nice things” (i.e., prosocial behavior; see Appendix E); (b) “starts arguments or fights, says mean things, and gets mad easily” (i.e., aggressive behavior; see Appendix F); or (c) “breaks the rules, does things you’re not supposed to, and gets into trouble at school” (i.e., disruptive behavior; see Appendix G). Below these written instructions was a randomly generated roster of 75 names of students in their school who were also participants in this study. In addition, each participant’s name appeared randomly on different rosters completed by other study participants in their school. The options “yes,” “no,” and “I do not know this person” were placed to the right of each student’s name so that participants could choose to nominate, not nominate, or identify students on their rosters whom they did not know. By providing participants

with the opportunity to indicate they did not know a particular participant, we were able to reduce the likelihood of false nominations, and generate a more reliable assessment of social behavior.

Peer nominations were used to calculate social behavior scores for each adolescent. First, the number of nominations adolescents received on each of the three behavioral assessment forms (i.e., circled “yes” by peers) was divided by the number of possible nominations they could have received by participants who responded that they knew that adolescent (i.e., number circled “yes” by peers plus number circled “no” by peers) (see Parkhurst & Asher, 1992) which varied as a result of different school sizes and missing data. Second, each adolescent’s score was normalized using an arcsine square-root transformation (Parkhurst & Asher, 1992) because the distributions of these behavioral proportion scores deviate from normality. Normalized behavioral proportion scores serve as social behavior scores for each adolescent in this investigation and higher scores indicate higher peer ratings for a given adolescent.

This well-established method for assessing social behavior has demonstrated good psychometric properties. For example, this measure has been linked with child maladjustment (see Rubin, Bukowski & Parker, 1998, for review). In addition, researchers have reported good reliability across ethnically and culturally diverse samples (Chang, Lei, Li, Liu, Guo, Wang, & Fung, 2005). Previous studies have established reliability and stability with children of various ages (Boulton & Smith, 1994; DeRosier & Thomas, 2003; Nabuzoka, 2003).

Results

In this section, I begin with an overview of the descriptive statistics for each variable. Then I report the results obtained from a factor analysis conducted with the adolescent perceptions of parental hostility measure. Finally, I conclude with the results of the analyses examining each of the core research questions outlined above. For all analyses, alpha level was set to .05.

Descriptive Statistics & Preliminary Analyses

I report the means, standard deviations, sample sizes, and intercorrelations for each of the study variables in Table 1. Separate tables of these descriptors are also presented for girls (see Table 2) and boys (see Table 3). As reported in Tables 1, 2, and 3, maternal and paternal perceptions of parental hostility were similar (for both boys and girls). Additionally, adolescent girls reported similar levels of hostility for both mothers and fathers (i.e., girls' perceptions of both maternal and paternal hostility were similar; see Table 2). Furthermore, reports of mothers and fathers hostility were similar for boys as well (i.e., boys' perceptions of both maternal and paternal hostility were similar; see Table 3). Furthermore, girls and boys reported similarly on maternal hostility (i.e., boys and girls perceptions of mothers were similar) as well as on paternal hostility (i.e., boys and girls perceptions of fathers were similar; see Tables 2 and 3).

Because less than 10% of the data were missing for each variable, all analyses were conducted without imputing additional data. The issue of missing data was addressed by eliminating any cases in which less than 75% of the data were available for any particular subject. To assess for outliers, I examined demographics and graphical depictions of the study variables to find data points that appeared to be unrepresentative

of the population. No outliers emerged. For one measure, adolescent social acceptance, an arcsine square-root transformation was conducted prior to any statistical analyses conducted with this measure (Parkhurst & Asher, 1992) to address the violation of statistical normality.

Factor Analysis of Adolescent Perceptions of Parental Hostility Scale

In order to test the reliability of the adolescent perceptions of parental hostility scale for this age group, a factor analysis was conducted using the 20-item Parental Hostility and Warmth scale (Harold & Conger, 1997). The goal of this factor analysis was to determine if the 20-item Parental Hostility and Warmth Scale (Harold & Conger, 1997), as used in this sample of adolescents, had a factor structure comparable to previously addressed samples of younger children.

Results indicated the 20-item Parental Hostility and Warmth Scale (Harold & Conger, 1997) did have a factor structure that mirrored previous findings (see Table 4). Two components emerged from this sample. The first component contained 19 of the 20 items and was much stronger than the second component. These findings indicate that these 19 items all tapping the same latent construct, and are a good indicator of that construct. According to Harold and Conger (1997), the hostility and warmth items have an inverse relationship, and when reverse-scored these items should tap the same construct. These results indicate that this is true in adolescence as well. For adolescent reports of both maternal and paternal hostility, five of the 20 items loaded highly on both factors but loaded more strongly on the first factor (i.e., above .60). These items were retained to remain consistent with previous research. A single item, however, loaded

more highly on factor two (0.50) than on factor one (-0.42); this item will be dropped in the remaining analyses.

Research Question 1: Does a link between parent perceptions of parental hostility adolescents' peer-reported social acceptance, prosocial, aggressive, and disruptive behavior exist? (see Figure 1)

In order to examine links between parents' perceptions of parental hostility and adolescent peer social acceptance and social behavior, I conducted ordinary least squares regressions separately for each of the outcomes of interest (see Table 5). Results revealed that maternal and paternal perceptions of their own hostility toward their adolescent were linked to peer-reported social acceptance and social behavior. More specifically, maternal perceptions of maternal hostility were linked to adolescent peer social acceptance, prosocial behavior, aggressive behavior, and disruptive behavior. Similarly, paternal perceptions of paternal hostility were associated with peer-reported social acceptance, prosocial behavior, aggressive behavior, and disruptive behavior (Table 5).

Research Question 2: If a link exists between parent perceptions of parental hostility and adolescents' social acceptance and social behavior, is this link moderated by adolescent gender? (see Figure 1)

I hypothesized that the associations between maternal and paternal hostility perceptions of hostility and adolescent peer-reported social acceptance and social behavior would be moderated by adolescent gender. In order to test this hypothesis, I conducted two separate two-step hierarchical regressions, one for maternal perceptions of maternal hostility and one for paternal perceptions of paternal hostility. In the first step of each regression, I entered parent perceptions of parental hostility and adolescent gender.

In the second step of each regression, I entered the interaction between parent perceptions of parental hostility and adolescent gender. As hypothesized, the association between maternal perceptions of maternal hostility and peer-reported adolescent social acceptance was moderated by adolescent gender; the interaction term (i.e., maternal perceptions of maternal hostility x adolescent gender) was significant. Post hoc tests of the slopes revealed that maternal perceptions of hostility are associated with peer-reported social acceptance for boys only (see Figure 4). Greater maternal perceptions of hostility were associated with less peer-reported social acceptance particularly for boys (see Figure 4). Furthermore, the association between maternal perceptions of maternal hostility and peer-reported adolescent prosocial behavior was also moderated by adolescent gender as the interaction term (i.e., maternal perceptions of maternal hostility x adolescent gender) was significant. Post hoc tests of the slopes revealed that maternal perceptions of hostility are associated with peer-reported prosocial behavior for boys only (see Figure 5). However, contrary to the expectations, associations between maternal perceptions of maternal hostility and aggressive behavior, and disruptive behavior were not moderated by adolescent gender (see Table 6).

Furthermore, the association between paternal perceptions of paternal hostility and peer-reported adolescent social acceptance was not moderated by adolescent gender. Similarly, the associations between paternal perceptions of paternal hostility and peer-reported adolescent prosocial behavior and aggressive behavior were not moderated by adolescent gender. For paternal hostility only one of the adolescent peer-reported outcomes, disruptive behavior, was moderated by adolescent gender as the interaction term (i.e., paternal perceptions of paternal hostility x adolescent gender) was significant

(see Table 6). Post hoc tests of the slopes revealed that paternal perceptions of hostility were associated with peer-reported disruptive behavior for boys only (see Figure 6).

Research Question 3: If a link exists between parental hostility and adolescents' social acceptance and social behavior, is this link moderated by adolescent perceptions of parental hostility? (see Figure 1)

I hypothesized that the associations between maternal and paternal perceptions of hostility and adolescent peer-reported social acceptance and social behavior would be moderated by adolescent perceptions of parental hostility. In order to test this hypothesis, I conducted two separate two-step hierarchical regressions, one for maternal perceptions of maternal hostility and one for paternal perceptions of paternal hostility. In the first step of each regression, I entered parent perceptions of parental hostility and adolescent perceptions of parental hostility. In the second step of each regression, I entered the interaction between parent perceptions of parental hostility and adolescent perceptions of parental hostility. Contrary to my expectations, the associations between parental perceptions of hostility and peer-reported adolescent social acceptance, prosocial, aggressive, and disruptive behavior were not moderated by adolescent perceptions of parental hostility (i.e., both mothers and fathers; see Table 7).

Similarly, the association between paternal perceptions of paternal hostility and peer-reported adolescent social acceptance was not moderated by adolescent perceptions of paternal hostility. Furthermore, the associations between paternal perceptions of paternal hostility and peer-reported adolescent prosocial, aggressive, and disruptive behaviors were not moderated by adolescent perceptions of paternal hostility (see Table 7).

Research Question 4: If a link exists between parental hostility and adolescents' social acceptance and social behavior and is moderated by adolescent gender, is this process subsequently mediated by adolescent perceptions of parental hostility? (see Figure 2)

To test the hypothesis that the association between parental perceptions of hostility toward their adolescent and adolescent peer-reported social acceptance and social behavior is moderated by adolescent gender and subsequently mediated by adolescent perceptions of parental hostility, I used the traditional criteria for mediation established by Baron and Kenny (1986) and used an interaction term to replace the independent variable. In accordance with Baron and Kenny (1986) and Judd and Kenny (1981) four steps are used to establish mediation: (1) the predictor variable must be correlated with the outcome, (2) the predictor variable must be correlated with the mediator variable, (3) the mediator variable should be correlated to the outcome variable while controlling for the predictor variable, and (4) the initial relationship between the predictor and outcome variables must be equal to zero when controlling for the mediator variable.

To test my hypothesis, first I had to establish that the proposed associations between parental perceptions of parental hostility and peer-reported social acceptance and social behavior existed and that these associations were moderated by adolescent gender. It was the case that only three associations were moderated by adolescent gender (i.e., two for maternal hostility; social acceptance and social behavior, and one for paternal hostility; disruptive behavior). The links between study variables that were not moderated by adolescent gender (i.e., aggressive behavior and disruptive behavior for mothers and

social acceptance, prosocial, and aggressive behavior for fathers) were not assessed for subsequent mediation by adolescent perceptions of parental hostility (see Table 6). Contrary to the hypotheses, results indicated that although the association between maternal perceptions of maternal hostility toward the adolescent and adolescent peer-reported social acceptance was moderated by adolescent gender, it was not subsequently mediated by adolescent perceptions of maternal hostility. Similarly, although the association between maternal perceptions of maternal hostility toward the adolescent and adolescent peer-reported prosocial behavior was moderated by adolescent gender, it was not subsequently mediated by adolescent perceptions of maternal hostility. Furthermore, for fathers, results indicated that although the association between paternal perceptions of paternal hostility toward the adolescent and adolescent peer-reported disruptive behavior was moderated by adolescent gender, it was not subsequently mediated by adolescent perceptions of paternal hostility (see Table 8).

Research Question 5: Alternately, is there support for a model wherein the link between adolescent peer-reported social acceptance (and social behavior) and adolescent perceptions of parental hostility is mediated by maternal and paternal perceptions of parental hostility? (see Figure 3)

To test the alternative hypothesis that the association between adolescent peer-reported social acceptance and social behavior and adolescent perceptions of parental hostility is mediated by maternal and paternal perceptions of parental hostility, I used the traditional criteria for mediation established by Baron and Kenny (1986) as described above.

To test my hypothesis, first I had to establish that the proposed associations between peer-reported social acceptance (and social behavior) and adolescent perceptions of parental hostility existed. It was the case that only one of these associations existed (i.e., the association between social acceptance and adolescent perceptions of maternal hostility) and, therefore, the remaining associations were not tested for mediation. For the significant association a hierarchical regression analysis was conducted, and results indicated that, for maternal hostility, the association between peer-reported social acceptance and adolescent perceptions of maternal hostility was not mediated by maternal perceptions of hostility (see Table 9).

Research Question 6: Finally, is there support for a model wherein the link between perceptions of hostility of one parent (i.e., mother or father) and the quality of adolescents' peer-reported social acceptance and social behavior is moderated by the other parent's perceptions of their hostility toward the adolescent?

I hypothesized that the associations between paternal perceptions of hostility (i.e., perceptions of mother or father) and adolescent peer-reported social acceptance and social behavior would be moderated by parental perceptions of parental hostility (i.e., perceptions of the other parent). In order to test this hypothesis, I conducted two separate two-step hierarchal regressions, one for maternal perceptions of maternal hostility and one for paternal perceptions of paternal hostility. In the first step of each regression, I entered maternal (or paternal) perceptions of parental hostility. In the second step of each regression, I entered both maternal and paternal perceptions of parental hostility separately followed by the interaction between maternal perceptions of hostility and paternal perceptions of hostility.

Contrary to my expectations, the associations between parental perceptions of hostility and peer-reported adolescent social acceptance, prosocial, aggressive, and disruptive behavior were not moderated by the parental perceptions of hostility. Furthermore, the association between maternal perceptions of paternal hostility and peer-reported adolescent social acceptance was not moderated by paternal perceptions of paternal hostility. Similarly, the associations between paternal perceptions of paternal hostility and peer-reported adolescent prosocial, aggressive, and disruptive behaviors were not moderated by maternal perceptions of paternal hostility (see Table 10).

Discussion

Core Findings: Links with Previous Research

Summary. Results revealed the following associations among study variables: (1) the association between parental perceptions of hostility and peer-reported social acceptance and social behavior exists (i.e., path c), (2) the association between parental perceptions of hostility and adolescent perceptions of hostility exists (i.e., path a); and (3) the association between adolescent perceptions of parental hostility and peer-reported adolescent social acceptance exists, however, the association between adolescent perceptions of parental hostility and peer-reported social behavior does not exist (i.e., path b). These associations will be discussed throughout the remainder of this section.

It is important, however, to discuss the lack of association between adolescent perceptions of parental hostility and peer-reported adolescent social behavior. Previous research indicates that child and adolescent perceptions of parenting behavior are similar to parental perceptions, and these child and adolescent perceptions shape various outcomes (Harold & Conger, 1997; Paley, Conger, & Harold, 2000). Based on these

findings, it would make sense that it matters less how parents perceive their hostility toward their adolescents and more how adolescents perceive of their parents hostility, however, this is the opposite of what this study found. It is possible a number of other explanations account for these findings. For example, during adolescence relationships with parents and peers may both be important; however, the relationships may be experienced by and responded to by adolescents differently. This would suggest that perceptions of parents and peers and resultant interactions with these social partners are associated with how these social partners treat an individual. For example, an adolescent may view his or her parents as hostile and behave in a hostile manner toward their parents, however, their peers may be friendly and supportive which evokes different behaviors with these peers (i.e., prosocial, non-aggressive).

Additionally, other relationships may buffer adolescents from negative behaviors with peers. For example, an adolescent who views their parents as hostile may be able to express these perceptions with siblings or friends and receive support and guidance from these unrelated social partners. This support and guidance may contribute to more positive interactions with the larger peer group, thereby preventing the perceptions of parental hostility from entering into interactions with the larger peer group.

The present investigation examined the associations among maternal and paternal perceptions of parental hostility, adolescent perceptions of parental hostility, and peer-reports of adolescent social acceptance and social behavior (i.e., prosocial, aggressive, and disruptive behavior). As expected, maternal and paternal perceptions of parental hostility were associated with peer-reported adolescent social acceptance, prosocial, aggressive, and disruptive behavior such that greater parental perceptions of hostility was

associated with less social acceptance and prosocial behavior and more aggression and disruption in the eleventh-grade students. These associations were consistent with previous research that highlights associations between parental hostility and peer social and behavioral outcomes through the seventh-grade (Paley, Conger, & Harold, 2000; Stocker & Youngblade, 1999). The present findings, along with previous research, support the proposition that parental perceptions of hostility contribute to social and behavioral outcomes in offspring.

To further knowledge about the role of parental hostility on adolescent peer social acceptance and social behavior, the present investigation examined a number of ways in which parental perceptions of hostility, adolescent perceptions of hostility, adolescent gender, and peer-reported adolescent social acceptance and social behavior could be associated (i.e., moderation, mediation, and mediated moderation).

Moderational models. The present investigation examined two possible moderators of the association between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior. Question two examined the moderating role of adolescent gender on the association between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior. Three (of the eight) associations were moderated by adolescent gender (i.e., the associations between maternal perceptions of hostility and peer-reported social acceptance and prosocial behavior and the association between paternal perceptions of hostility and peer-reported disruptive behavior). These findings suggest that boys and girls are influenced differently by parental perceptions of hostility. More specifically, maternal perceptions of hostility are associated with social acceptance and prosocial behavior, for boys but not

for girls. Similarly, paternal perceptions of hostility are associated with disruptive adolescent behavior, for boys but not for girls. These findings are consistent with the male vulnerability hypothesis that explains that boys are more influenced by, and react differently to certain types of hostility than girls (Dadds, Scheffield, & Holbeck, 1990).

Gender may not moderate the other existing associations in this sample because underlying differences in adolescent aggressive and disruptive behaviors for boys and girls may be manifested in ways that were not captured by this sociometric instrument. Previous research on children and adolescents has indicated that boys and girls express aggression in different ways (i.e., overt versus relational aggression; Crick, 1997; Crick & Grotpeter, 1995), and by using a more sensitive measures to assess aggressive and disruptive behaviors differences between boys and girls may emerge. Furthermore, it is possible that these peer-reported adolescent outcomes are related to having a hostile father regardless of gender. In order to get a clearer picture of how adolescent gender may influence these associations, future research should further examine the role of adolescent gender in the association between parental hostility and adolescent outcomes and use more sensitive measures of aggressive and disruptive behavior.

The moderating role of adolescent perceptions of parental hostility on the association between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior was examined. Contrary to expectations, none of the associations were moderated by adolescent perceptions of parental hostility. Although adolescent perceptions of parental hostility did not moderate the association between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior, this variable was examined as a mediator of this association as well.

Furthermore, the moderating role of parental perceptions of hostility on the association between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior was examined. Contrary to expectations, none of the associations were moderated by parental perceptions of hostility. Although parental perceptions of hostility are associated with peer-reported adolescent social acceptance and social behavior, results indicate that the presence or absence of two parents reporting hostile behavior toward the adolescent simultaneously does not significantly predict peer-reported social acceptance and social behavior.

Mediational models. Because previous research has not examined mechanisms by which parental hostility is associated with social and behavioral outcomes the results of the two models tested in the present investigation provide insight into the associations among study variables. Taken together, these two models revealed two important findings. First, basic links in the two models investigated were significant (i.e., the link between parental perceptions of hostility and peer-reported social acceptance and behavior and the link between peer-reported adolescent social acceptance and adolescent perceptions of parental hostility); however, the link between peer-reported social behavior and adolescent perceptions of parental hostility was not. Because these findings are correlational in nature, the directionality of effects cannot be assumed. In order to gain a better understanding of how these variables are associated during this stage of development further research needs to be conducted. Second, the two mediating mechanisms tested in this investigation were non-significant and could not explain the links among these variables; therefore, these mechanisms (as well as other possible mechanisms) need further examination.

It is important to discuss potential explanations for the lack of hypothesized mediation. For example, other mechanisms (beside the ones tested in this study) may account for the associations between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior (e.g., adolescent sibling relationship functioning, adolescent psychosocial functioning, adolescent friendship). Previous research has examined the association between parental hostility and sibling relationship functioning (i.e., sibling conflict and hostility) and results indicate that greater levels of parental hostility are associated with poorer sibling relationships (Stocker & Youngblade, 1999). Furthermore, research on siblings and peers suggest that aspects of the sibling relationship contribute to later interactions with peers (Ostrov, Crick, & Stauffacher, 2006). It is possible that sibling relationship functioning mediates the association between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior, such that parent reports of hostility influence sibling interactions (i.e., hostile or non-hostile interactions), and these interactions with siblings then shape interactions with peers during adolescence.

For the alternative model, mediation may not have been significant due to the lack of evidence for the hypothesized link between peer-reported adolescent social behavior and adolescent perceptions of parental hostility. It is possible that other mechanisms account for this lack of association (i.e., relationships with siblings and friends). Perhaps relationships with siblings and or friends provide adolescents with a support system that keeps these negative peer-reports from influencing close relationships (i.e., those with parents).

Additionally, significant findings may not have been obtained when examining these two models because the models may not be separate. More specifically, these models may work together in different way for different adolescents. Thus, these models may be one complex circular model with separate starting points which vary across individuals. For example, one group of adolescents may experience hostility from parents which, in turn, shape interactions with peers which cause adolescents to behave in ways which increase levels of parental hostility which may lead to further difficulties with peers. Future research should examine more complex models in which the study variables are combined with other variables (e.g., adolescent behavior with parents and peers) over time to develop a better understanding of how these variables work together to shape the lives of adolescents.

Strengths of the Present Study

The current investigation has made contributions to the body of research on parental hostility. This present study examined two models assessing the associations among study variables and it is important to mention the strengths of this investigation. First, the present study examined the role of both maternal and paternal perceptions of parental hostility. A number of the previous studies examining parental hostility only examined maternal hostility and were limited in scope by a lack of information about paternal hostility (Erel, Margolin, & John, 1998; Gottman & Katz, 1989). In order to gain insight into the role of parental hostility, it is important to examine role of paternal hostility on child and adolescent outcomes. The present study contributes to understanding the role of paternal hostility on adolescent social acceptance and social behavior.

Second, the present investigation extended current research findings beyond the seventh-grade and into adolescence and provided important insight into this developmental period. As discussed earlier, adolescence is an important developmental period in which adolescents become more autonomous and, as a result, spend more time with peers and less time with parents. Based on differing opinions regarding the importance of parents and peers during this stage, it was unclear whether or not parental hostility would influence peer-reported social acceptance and social behavior during this stage.

Present findings highlighted the effects of parental hostility during adolescence. Similar to previous studies of younger children, an association between parental perceptions of hostility and peer-reported adolescent social acceptance and social behavior was found. In line with previous research this suggests that, despite the shift toward autonomy, parents continue to play an important role in the lives of adolescents (Steinberg & Silk, 2002). Additionally, this investigation also revealed an association between peer-reports of adolescent social acceptance (but not social behavior) and adolescent perceptions of parental hostility. This finding suggests that peers also assume an influential role in the lives of adolescents; however, this role may be less influential than that of parents. Taken together, these findings suggest that, contrary to Harris (1985), during adolescence both parents and peers assume important roles in adolescent outcomes and that peers are not the only social partners that matter. Based on these findings future research should examine the roles of parents and peers during adolescence more thoroughly.

Third, the current study is strengthened by the use of parents, teens, and peers as reporters of measures. For example, previous research examining the role of parental hostility on extra-familial interactions has been limited to parent (and sibling) reports of child behavior in extra-familial interactions. The present study used the actual peer group to report on adolescent peer interactions. This strengthens the reliability and validity of the outcome variables because parents may not be the most reliable sources of information about peer social status and behavior. Furthermore, the independent, dependent, mediator, and moderator variables were likely, not inflated as a result of using multiple reporters.

Finally, the present study examined the four parent-adolescent dyadic relationships (i.e., mother-daughter, mother-son, father-daughter, father-son) that have been recognized by previous research (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003; Gutman & Sameroff, 2004). By examining these four dyads a clearer understanding of the role of parental perceptions of hostility on peer-reported adolescent social acceptance and social behavior was established. Differences were found for boys and girls based on which parent has reported being hostile toward them. These findings are consistent with previous research that has noted differences between the four parent-adolescent dyadic relationships.

Limitations of the Present Study

Although this investigation contributes to previous knowledge on the role of parental hostility on adolescent outcomes, there are three striking limitations to the present study.

Cross-sectional data. Although the present investigation furthers understanding of the role of parental perceptions of hostility on adolescent outcomes, there are limitations to utilizing cross-sectional data. More specifically, the ability to understand how parental perceptions of hostility are related to adolescent peer-reported social acceptance and social behavior over time is limited. It is difficult to make generalized interpretations from cross-sectional data particularly when examining adolescence.

For example, the present study is limited to peer-reported social acceptance and social behavior at one time point, and previous social acceptance and behavior of these adolescents is unknown. If examined at an earlier stage of development, some of these adolescents may have received different peer-reported social acceptance and behavior scores. Differences between adolescents who have been struggling with peer-reported social acceptance and social behavior since grade school and those who did not struggle until adolescence may arise as interactions with parents may be dramatically different for these separate groups of adolescents. Furthermore, any differences (that were not captured by this investigation) may have implications for the current results. Because this study was unable to capture the differences between adolescents who have struggled with peers from a young age, and those who not struggled with peers until adolescence, the present findings must be generalized with caution. Future research should examine these variables longitudinally in order to capture potential differences between these groups of adolescents.

Measures. Although the present study was strengthened by the use multiple reporters, it is important to note one important limitation of the measures utilized in this investigation. The present study did not include observational data on parental hostility

and therefore, claims about parental hostility as it occurs in the home could not be made in the present investigation. Future investigations should utilize both questionnaire and observational data in order to examine a more holistic composite of parental hostility and gain a better understanding of parental hostility.

Other aspects of this study. Although the present study provides insight on the role of parental perceptions of hostility on peer-reported adolescent social acceptance and social behavior, other important aspects of adolescent social development were ignored. For example, in the present study peer reports of adolescents were limited to reports of social acceptance and social behavior. Other aspects of larger peer group status may be useful in providing additional insight on how parental hostility may influence adolescent interactions with the peer group at large and future research should investigate the role of parental perceptions of hostility on other peer group outcomes.

Additionally, the use of the larger peer group does not provide insight into the other important social relationships during adolescence (i.e., friendships, romantic relationships). A number of contemporary theories have suggested that parent-child relationships are closely associated with other important relationships (e.g., Attachment Theory; Bowlby, 1969). The present investigation examined the role of parental perceptions of hostility on peer-reported outcomes. By examining the outcomes associated with the broader peer group, this study fails to recognize the influence of parental hostility on specific relationships. It is possible that parental hostility plays a less important role in outcomes related to larger groups (i.e., the peer group) and more important role in closer relationships (i.e., relationships with friends, and romantic partners) because of the dyadic nature of these close relationships. Future research

should examine the role of parental hostility on outcomes related to close relationships during this stage of development.

Lastly, a number of parental and adolescent factors may contribute to parental interactions with their adolescents at home (e.g., marital relationship quality, social support, stress, relationship with the adolescent, adolescent disabilities). Although I have primarily discussed a model in which hostile parental behavior toward the adolescent (and subsequent parental reports of this behavior) may result from negative adolescent behavior in the home, it is also possible that parents may be more supportive and nurturing toward their adolescents when unexpected negative adolescent behaviors arise. These parental interactions may be associated with behaviors that were beyond the scope of this investigation. Future research should examine parental behavior as both a contributing factor and/or response to adolescent behavior in the home.

Sample. Finally, any generalizations made from this sample must be made with caution as all of the families in this study consisted of married middle class parents. Although participants were racially and ethnically representative of their location, the present results may be different for working-class and/or single parent households. For example, having one hostile parent in a two-parent household may not be as problematic as having one hostile parent in a one-parent household. In order to extend the present findings to other family structures, future research should assess both married and single-parent families from a broad range of socio-economic backgrounds.

Future Directions

Although two possible models were examined in this investigation, and the present findings highlight implications for familial and extra-familial interactions with

social partners, these results, nonetheless, evoke a number of questions that warrant consideration in future studies. First, given that we have an understanding of the importance of peers during adolescence it is important to consider how adolescent *friendships* may suffer from, or buffer adolescents against parental hostility. It is possible that interactions with friends during adolescence are different from interactions with peers. Perhaps friendships are more impacted by parental hostility than larger peer group status or functioning. For example, adolescents who are experiencing hostility from parents may be acting in more hostile ways toward their friends because they are mirroring parents in these other close relationships. This would be consistent with previous research which has highlighted a “spillover” effect from one type of close relationship (e.g., the parent-child relationship) to other social interactions (e.g., interactions with peers; Engfer, 1988). Alternatively, it is possible that adolescents with hostile parents form closer relationships with friends, and these friendships, in turn, buffer these adolescents from being hostile toward others.

Additionally, given the research findings that girls have more supportive friendships than boys, it is likely that gender differences would emerge when examining the role of parental hostility on adolescent friendship. Researchers have shown that girls tend to have more intimate and supportive friendships than boys (Buhrmester & Furman, 1987) and these supportive friendships may alleviate the effects of parental hostility for girls who are able to share their thoughts and feelings about their parent’s hostility toward them with their friends. Boys, on the other hand, do not have such intimate friendships and, therefore, are more likely to be influenced by parental hostility than girls.

Conclusions

This study provides important insight into the association between parental perceptions of hostility and peer social acceptance and social behavior. The use of parental perceptions of hostility provides insight into the ways in which parents and adolescents view parental hostility. Furthermore, the use of peer-reported social acceptance and social behavior contribute to understanding how parental hostility influences interactions that occur outside of the home. Considering the importance of family and peers during adolescence, the results of this study lend additional support to research on family-peer linkages (Parke & Ladd, 1992). The findings of this study provide a basis for future researcher examining the associations among parental perceptions of hostility, adolescents' perceptions of parental hostility, social acceptance, and social behavior.

Table 1

Means, Standard Deviations, Sample Size, and Intercorrelations for Variables of Interest in the Present Study for All Participants

Measure	<u>M</u>	<u>SD</u>	<u>n</u>	1	2	3	4	5	6	7	8
1. Maternal Perceptions of Hostility	11.88	3.97	187	--							
2. Paternal Perceptions of Hostility	11.74	4.65	168	.50**	--						
3. Adolescent Perceptions of Maternal Hostility	28.40	10.70	184	.38**	.18*	--					
4. Adolescent Perceptions of Paternal Hostility	26.70	10.71	183	.27**	.23*	.59**	--				
5. Social Acceptance	3.00	.60	175	-.19*	-.23**	-.15*	-.08*	--			
6. Prosocial Behavior	1.09	.19	178	-.22**	-.34**	-.11	-.09	.68*	--		
7. Aggressive Behavior	.33	.20	178	.24**	.29**	.08	-.00	-.48**	-.77**	--	
8. Disruptive Behavior	.32	.24	178	.16*	.21**	.02	-.04	-.18	-.55*	.61**	--

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

Table 2

Means, Standard Deviations, Sample Size, and Intercorrelations for Variables of Interest in the Present Study for Girls Only

Measure	<u>M</u>	<u>SD</u>	<u>n</u>	1	2	3	4	5	6	7	8
1. Maternal Perceptions of Hostility	11.65	3.70	116	--							
2. Paternal Perceptions of Hostility	11.82	4.49	104	.40**	--						
3. Adolescent Perceptions of Maternal Hostility	27.33	8.36	115	.35**	.05	--					
4. Adolescent Perceptions of Paternal Hostility	26.71	9.23	114	.17	.17	.49**	--				
5. Social Acceptance	1.23	.94	112	-.05	-.11	-.14	-.00	--			
6. Prosocial Behavior	1.10	.18	112	-.28	-.25*	-.10	-.01	.69**	--		
7. Aggressive Behavior	.31	.20	112	.20*	.26**	.08	-.03	-.48**	-.77**	--	
8. Disruptive Behavior	.27	.21	112	.10	.07	.08	-.05	-.22**	-.56**	.62**	--

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

Table 3

Means, Standard Deviations, Sample Size, and Intercorrelations for Variables of Interest in the Present Study for Boys Only

Measure	<u>M</u>	<u>SD</u>	<u>n</u>	1	2	3	4	5	6	7	8
1. Maternal Perceptions of Hostility	12.23	4.38	71	--							
2. Paternal Perceptions of Hostility	11.59	4.93	64	.64**	--						
3. Adolescent Perceptions of Maternal Hostility	29.83	8.23	69	.44**	.37**	--					
4. Adolescent Perceptions of Paternal Hostility	27.51	8.44	68	.43**	.35**	-.78**	--				
5. Social Acceptance	2.02	1.21	63	-.33**	-.38**	-.17	.19*	--			
6. Prosocial Behavior	1.05	.18	66	-.43**	-.52**	-.20	-.23	.71**	--		
7. Aggressive Behavior	.36	.18	66	.29*	.37*	.16	.09	-.51**	-.77**	--	
8. Disruptive Behavior	.41	.26	66	.19	.41**	.06	.03	-.14	-.51**	.57**	--

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

Table 4

Factor Loadings from Principal Components Analysis of Adolescent Perceptions of Parental Hostility Scale: Communalities, Eigenvalues, and Percentages of Variance

Item	<u>Maternal Hostility</u>			<u>Paternal Hostility</u>		
	<u>Factor Loading</u>		Communality	<u>Factor Loading</u>		Communality
	1	2		1	2	
Get angry at you?	.74	.30	.67	.77	.26	.64
Ask you for your opinion about an important matter?	-.42	.50	.49	-.48	.51	.43
Listen carefully to your point-of-view?	-.76	.16	.57	-.67	.33	.61
Let you know she/he really cares for you?	-.70	.45	.81	-.72	.54	.70
Criticize you or your ideas?	.62	.26	.45	.61	.26	.45
Shout or yell at you because she/he was mad at you?	.67	.47	.64	.72	.33	.67
Ignore you when you tried talking to her/him?	.69	.13	.35	.59	.06	.50
Threaten to do something that would upset you if you didn't do what she/he wanted?	.68	.33	.75	.77	.39	.57
Try to make you feel guilty?	.66	.09	.46	.62	.26	.45
Act loving and affectionate toward you?	-.77	.42	.76	-.74	.45	.77
Let you know that she/he appreciated you, your ideas or the things you do?	-.79	.39	.76	-.71	.51	.78
Help you do something that was important to you?	-.71	.32	.62	-.71	.33	.62
Say you make her/him unhappy?	.50	.32	.55	.60	.44	.36
Have a good laugh with you about something that was funny?	-.62	.33	.40	-.59	.23	.50
Get into a fight or argument with you?	.77	.24	.63	.73	.30	.66
Hit, push, grab or shove you?	.48	.22	.37	.48	.38	.28
Argue with you whenever you disagree about something?	.70	.37	.54	.66	.32	.63
Cry, whine or nag to get her/his way?	.57	.20	.25	.39	.30	.36
Not do things you asked her/him to do?	.59	-.01	.26	.49	.15	.35
Act supportive and understanding toward you?	-.83	.22	.66	-.73	.35	.74
Eigenvalues	9.13	2.02		8.51	2.58	
% of variance	45.68	10.10		42.55	12.90	

Table 5

Regression Analysis Summary for Parental Perceptions of Hostility Variables Predicting Peer-reported Adolescent Social Acceptance and Social Behavior

variable	<u>Maternal Perceptions of Hostility</u>			<u>Paternal Perceptions of Hostility</u>		
	<u>B</u>	<u>SEB</u>	<u>β</u>	<u>B</u>	<u>SEB</u>	<u>β</u>
Social Acceptance	-.05*	.02	-.19*	-.05**	.01	-.23**
Social Behavior						
Prosocial	-.01**	.00	-.22**	-.01**	.00	-.34**
Aggressive	.12**	.00	.24**	.01**	.00	.29**
Disruptive	.01*	.00	.16*	.01**	.000	.21**

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

Table 6
Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior with Parental Perceptions of Hostility with Adolescent Gender as a Moderator

outcome, step, and predictor variables	Maternal Hostility				Paternal Hostility			
	R ²	ΔR^2	sr ²	β	R ²	ΔR^2	sr ²	β
Social Acceptance								
Step 1	.03	.03			.06	.06		
PPH			.02	-.19*			.01	-.23**
AG			.16	.00			.16	-.10
Step 2	.05	.02			.08	.02		
PPH			.06	.25			.05	.18
AG			.49	.44			.43	.24
PPH x AG			.04	-.65*			.03	-.55
Prosocial Behavior								
Step 1	.08	.08			.17	.17		
PPH			.00	-.21*			.00	-.35**
AG			.02	-.17*			.02	-.22**
Step 2	.10	.02			.18	.01		
PPH			.01	.22			.00	-.06
AG			.08	.25			.07	.01
PPH x AG			.00	-.65*			.00	-.38
Aggressive Behavior								
Step 1	.07	.07			.11	.11		
PPH			.00	.23**			.00	.30**
AG			.03	.11			.03	.14
Step 2	.07	.00			.11	.00		
PPH			.01	.20			.01	.22
AG			.09	.08			.08	.08
PPH x AG			.00	.04			.00	.09
Disruptive Behavior								
Step 1	.11	.11			.12	.12		
PPH			.00	.14**			.00	.22**
AG			.03	.29**			.04	.27**
Step 2	.11	.00			.15	.03		
PPH			.01	-.19			.01	-.29
AG			.10	.13			.10	-.15
PPH x AG			.00	.23			.00	.68*

Table 7

Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior with Parental Perceptions of Hostility with Adolescent Perceptions of Parental Hostility as a Moderator

outcome, step, and predictor variables	<u>Maternal Hostility</u>				<u>Paternal Hostility</u>			
	<u>R²</u>	<u>Δ R²</u>	<u>sr²</u>	<u>β</u>	<u>R²</u>	<u>Δ R²</u>	<u>sr²</u>	<u>β</u>
Social Acceptance								
Step 1	.05	.05			.06	.06		
PPH			.02	-.16			.01	-.02*
APPH			.00	-.12			.00	-.07
Step 2	.06	.00			.06	.00		
PPH			.06	-.34			.04	-.26
APPH			.02	-.35			.02	-.13
PPH x APPH			.00	.36			.00	.09
Prosocial Behavior								
Step 1	.05	.05			.11	.11		
PPH			.00	-.23			.00	-.32**
APPH			.00	-.13			.00	-.03
Step 2	.07	.01			.12	.00		
PPH			.01	-.54*			.00	-.11
APPH			.00	-.39			.00	.18
PPH x APPH			.00	.59			.00	-.36
Aggressive Behavior								
Step 1	.07	.07			.09	.09		
PPH			.00	.29**			.00	.32**
APPH			.00	-.06			.00	-.04
Step 2	.08	.00			.09	.00		
PPH			.01	.52*			.00	.16
APPH			.00	.22			.00	-.20
PPH x APPH			.00	-.45			.00	.26
Disruptive Behavior								
Step 1	.03	.03			.03	.03		
PPH			.00	.19*			.00	.19*
APPH			.00	-.03			.00	.00
Step 2	.03	.00			.07	.03		
PPH			.01	.22			.01	-.24
APPH			.00	.00			.00	-.45*

Table 8

Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior with Parental Perceptions of Hostility with Adolescent Gender as a Moderator and Adolescent Perceptions of Parental Hostility as a Mediator

outcome, step, and predictor variables	R^2	Maternal Hostility			R^2	Paternal Hostility		
		ΔR^2	sr^2	β		ΔR^2	sr^2	β
Social Acceptance								
Step 1	.05	.05						
PPH			.02	-.18*				
AG			.01	-.08				
PPH x AG			.16	.000				
Step 2	.08	.03						
PPH			.02	-.02				
AG			.50	.54				
PPH x AG			.04	-.60*				
APPH			.01	-.07				
Prosocial Behavior								
Step 1	.09	.09						
PPH			.00	-.21**				
AG			.02	-.18*				
PPH x AG			.00	-.05				
Step 2	.11	.02						
PPH			.00	-.06				
AG			.08	.32				
PPH x AG			.00	-.55*				
APPH			.00	-.05				
Disruptive Behavior								
Step 1					.13	.13		
PPH							.00	.22
AG							.03	.30
PPH x AG							.00	-.02
Step 2					.18	.05		
PPH							.00	.03
AG							.10	-.25
PPH x AG							.00	.62**
APPH							.00	-.03

Note. * $p < .05$. ** $p < .01$. PPH = Parental Perceptions of Hostility; AG = Adolescent Gender; APPH = Adolescent Perceptions of Parental Hostility.

Table 9

Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior from Adolescent Perceptions of Parental Hostility with Parental Perceptions of Hostility as a Mediator

step and predictor variables	R^2	<u>Maternal Hostility</u>		β
		ΔR^2	sr^2	
Step 1	.03	.03		
Social Acceptance			.76	-.19*
Step 2	.19	.15		
Social Acceptance			.71	-.10
PPH			.19	.40**

Note. * $p < .05$. ** $p < .01$. PPH = Parental Perceptions of Hostility.

Table 10

Summary of Hierarchical Regression Analysis Predicting Peer-reported Adolescent Social Acceptance and Social Behavior from Parental Perceptions of Hostility with Remaining Parents' Perceptions of Parental Hostility as a Moderator

outcome, step, and predictor variables	<u>Maternal Hostility</u>				<u>Paternal Hostility</u>			
	<u>R²</u>	<u>Δ R²</u>	<u>sr²</u>	<u>β</u>	<u>R²</u>	<u>Δ R²</u>	<u>sr²</u>	<u>β</u>
Social Acceptance								
Step 1	.03	.03			.05	.05		
MPH			-.18	-.18			-.22	-.22*
Step 2	.05	.02			.06	.01		
MPH			-.07	-.18			-.09	-.29
PPH			-.09	-.29			-.07	-.18
MPH x PPH			.04	.18			.04	.18
Prosocial Behavior								
Step 1	.11	.11			.11	.11		
MPH			-.34	-.34**			-.34	-.34**
Step 2	.12	.00			.12	.00		
MPH			-.09	-.28			-.34	-.28
PPH			-.01	-.04			-.22	-.04
MPH x PPH			-.01	-.05			-.32	-.04
Aggressive Behavior								
Step 1	.08	.08			.08	.08		
MPH			.29	.29**			.29	.29**
Step 2	.09	.01			.08	.01		
MPH			.11	.32			.11	.32
PPH			.08	.20			.08	-.20
MPH x PPH			-.03	-.44			.03	-.160
Disruptive Behavior								
Step 1	.03	.03			.04	.04		
MPH			.18	.18			.20	.20*
Step 2	.06	.03			.06	.02		
MPH			-.06	-.17			-.05	-.16
PPH			-.05	-.16			-.06	-.17
MPH x PPH			.11	.52			.11	.52

Note. * $p < .05$. ** $p < .01$. MPH = Parental Perceptions of Hostility; PPH = Paternal Perceptions of Hostility.

Figure 1. Model depicting two moderators (i.e., adolescent gender; c_1 and adolescent perceptions of parental hostility; c_2) on the association between parental hostility and adolescent peer relations.

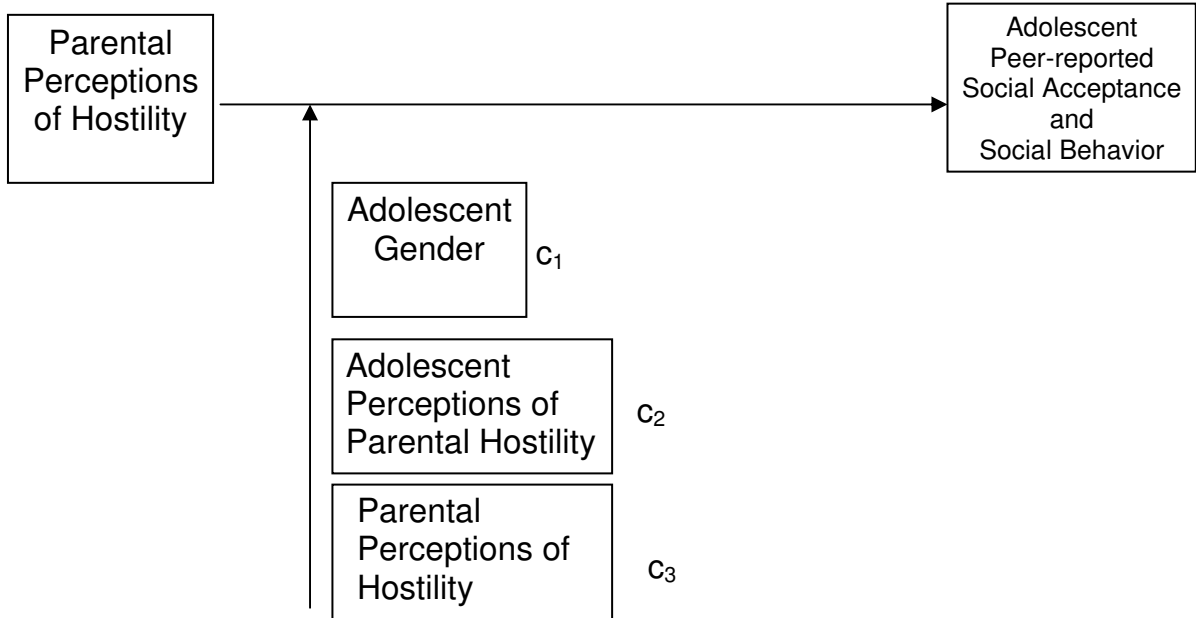


Figure 2. Proposed moderated mediation model depicting the mediating role of adolescent perceptions of parental hostility on the association between parental hostility and adolescent peer relations, as moderated by adolescent gender with the paths a, b, and c.

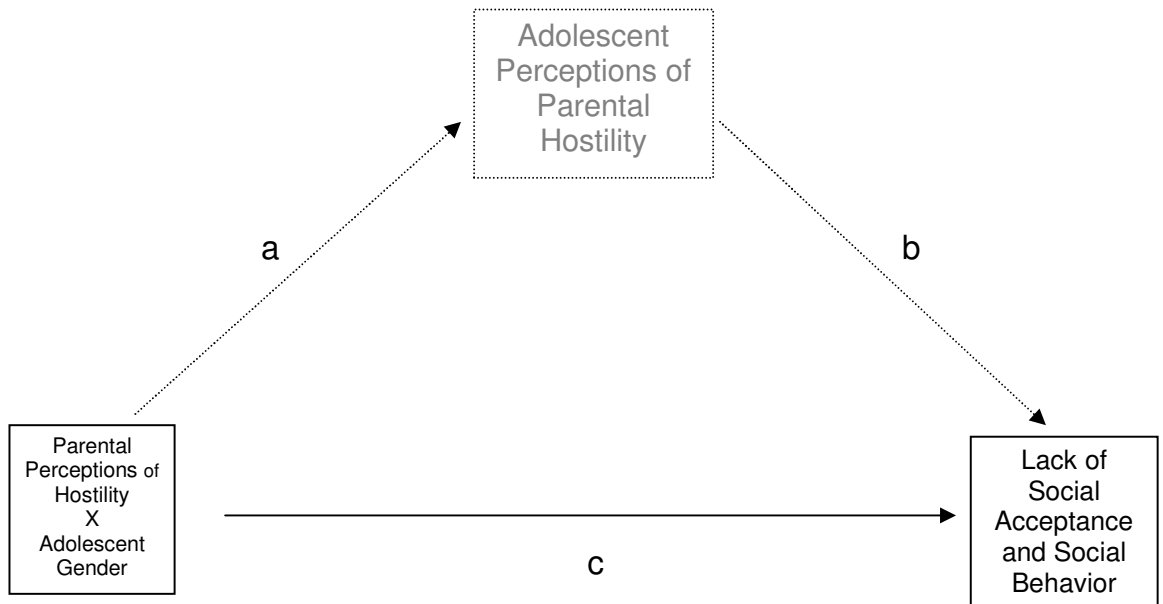


Figure 3. Proposed alternative mediation model depicting the mediating role of parental perceptions of hostility on the association between peer-reported adolescent social acceptance (and social behavior) and adolescent perceptions of parental hostility.

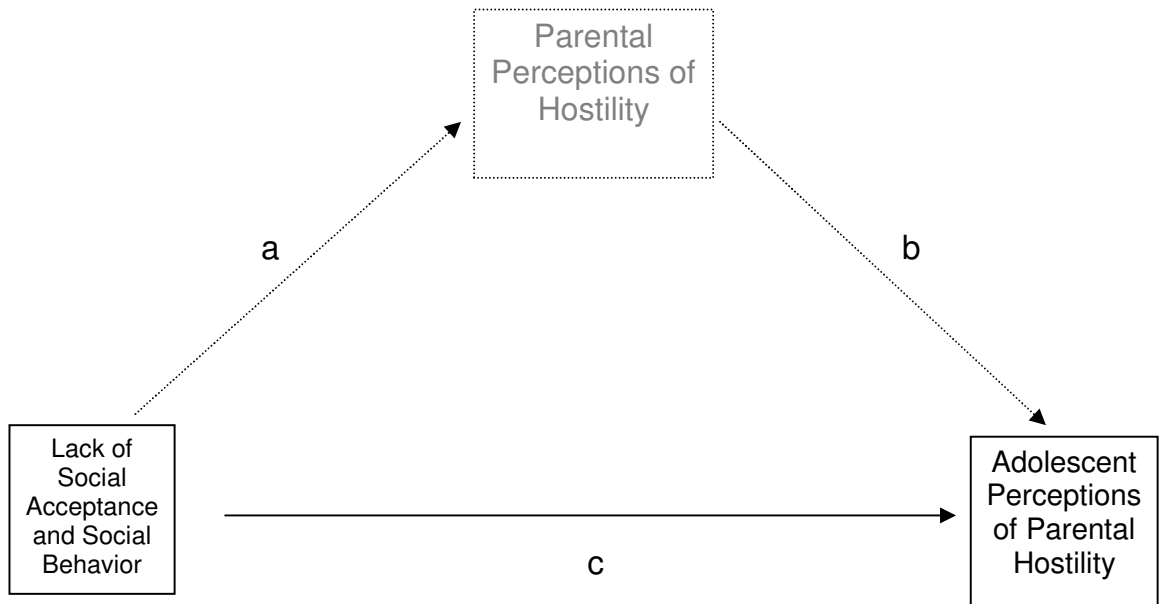


Figure 4. Peer-reported social acceptance as a function of maternal perceptions of hostility for adolescent boys and girls.

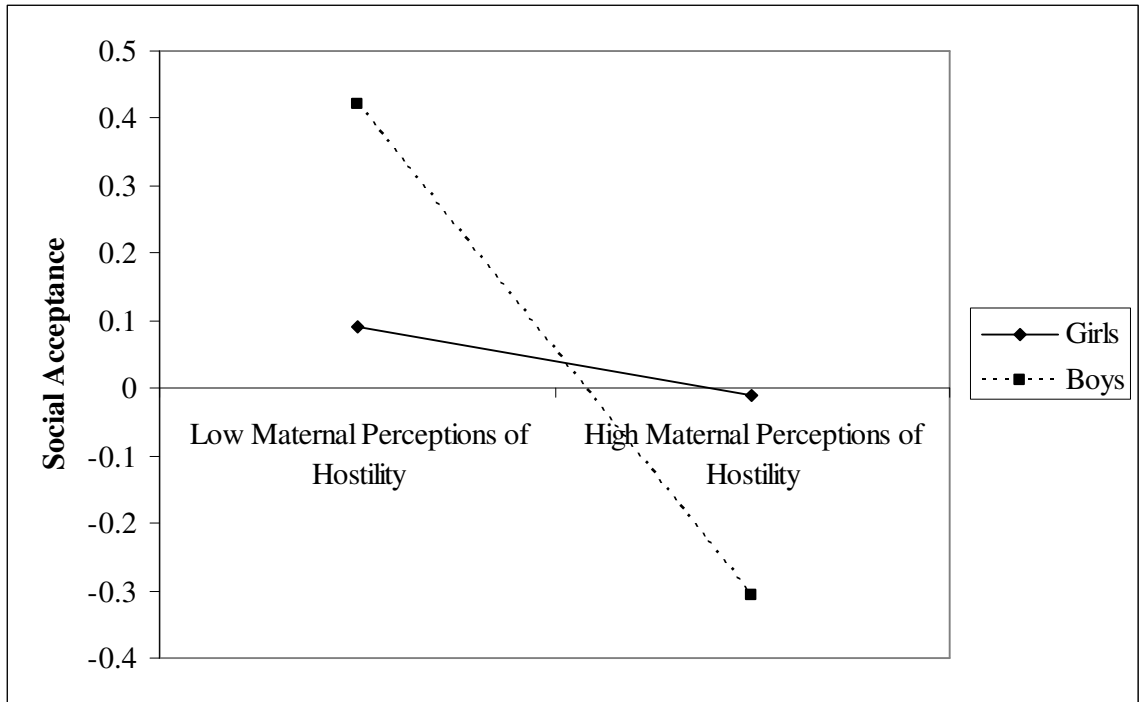


Figure 5. Peer-reported prosocial behavior as a function of maternal perceptions of hostility for adolescent boys and girls.

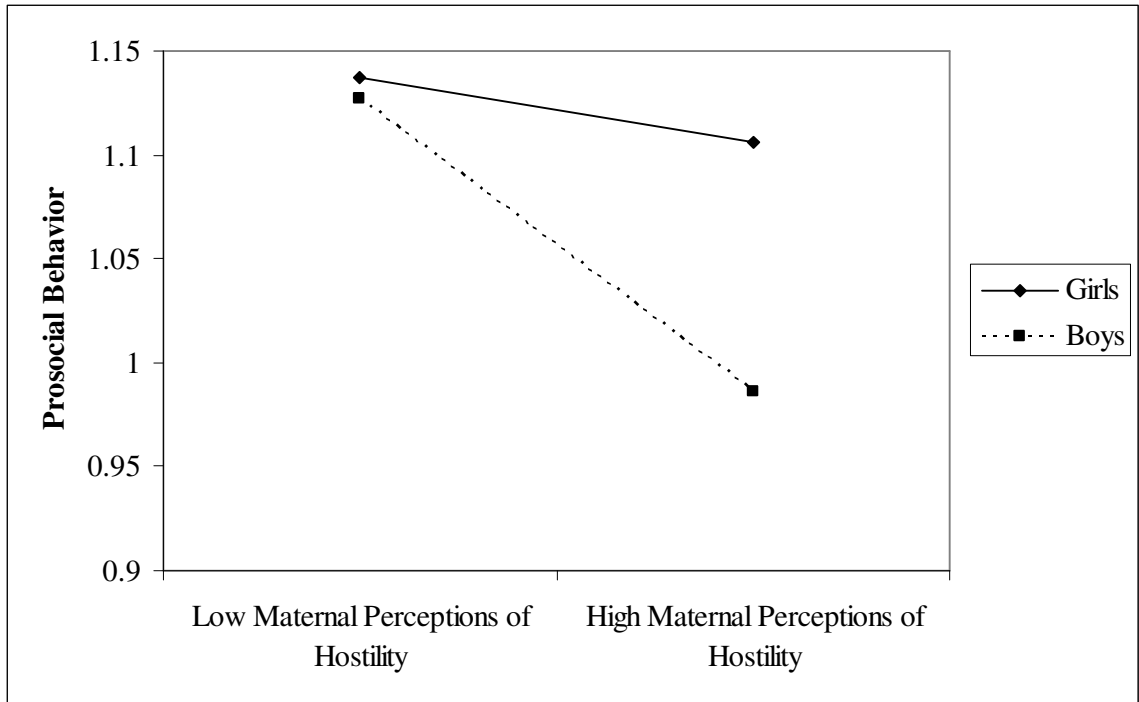
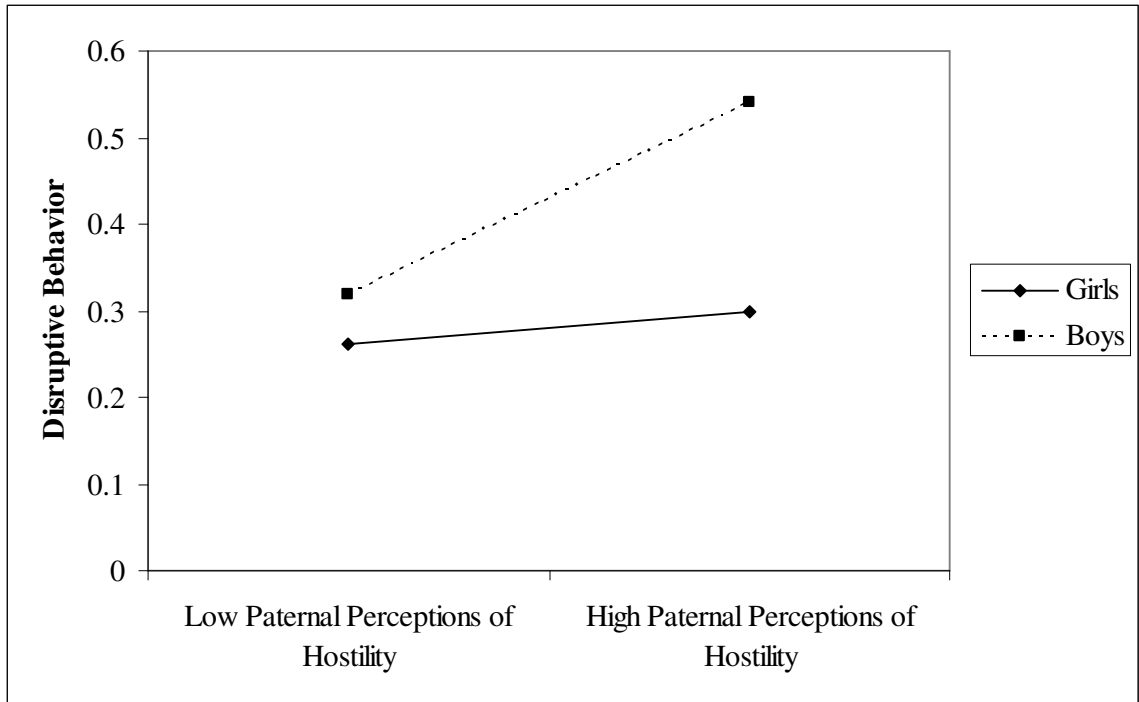


Figure 6. Peer-reported disruptive behavior as a function of paternal perceptions of hostility for adolescent boys and girls.



Appendix A

Adolescent Perceptions of Maternal Hostility Questionnaire (Harold & Conger, 1997)

Please think about times during the past month when you and your mother have spent time talking or doing things together. Indicate how often your mother acted in the following ways towards you during the past month.

	always	almost always	fairly often	about half of the time	not too often	almost never	never
1. Get angry at you?	1	2	3	4	5	6	7
2. Criticize you or your ideas?	1	2	3	4	5	6	7
3. Shout or yell at you because she was mad at you?	1	2	3	4	5	6	7
4. Ignore you when you tried to talk to her?	1	2	3	4	5	6	7
5. Threaten to do something that would upset you if you didn't do what she wanted?	1	2	3	4	5	6	7
6. Try to make you feel guilty?	1	2	3	4	5	6	7
7. Say you made her unhappy?	1	2	3	4	5	6	7
8. Get into a fight or argument with you?	1	2	3	4	5	6	7
9. Hit, push, grab or shove you?	1	2	3	4	5	6	7
10. Argue with you whenever you disagreed about something?	1	2	3	4	5	6	7
11. Cry, whine or nag to get her way?	1	2	3	4	5	6	7
12. Not do things you asked her to do?	1	2	3	4	5	6	7

Appendix B

Adolescent Perceptions of Paternal Hostility Questionnaire (Harold & Conger, 1997)

Please think about times during the past month when you and your father have spent time talking or doing things together. Indicate how often your father acted in the following ways towards you during the past month.

	always	almost always	fairly often	about half of the time	not too often	almost never	never
1. Get angry at you?	1	2	3	4	5	6	7
2. Criticize you or your ideas?	1	2	3	4	5	6	7
3. Shout or yell at you because she was mad at you?	1	2	3	4	5	6	7
4. Ignore you when you tried to talk to her?	1	2	3	4	5	6	7
5. Threaten to do something that would upset you if you didn't do what she wanted?	1	2	3	4	5	6	7
6. Try to make you feel guilty?	1	2	3	4	5	6	7
7. Say you made her unhappy?	1	2	3	4	5	6	7
8. Get into a fight or argument with you?	1	2	3	4	5	6	7
9. Hit, push, grab or shove you?	1	2	3	4	5	6	7
10. Argue with you whenever you disagreed about something?	1	2	3	4	5	6	7
11. Cry, whine or nag to get her way?	1	2	3	4	5	6	7
12. Not do things you asked her to do?	1	2	3	4	5	6	7

Appendix C

Parental Hostility toward the Adolescent Questionnaire (Harold & Conger, 1997)

Please circle a number to indicate how often during the past month you have behaved in the following ways towards your teen.

During the past month I...

	always	almost always	fairly often	about half of the time	not too often	almost never	never
1. got angry at my teen.	1	2	3	4	5	6	7
2. criticized my teen for his or her ideas.	1	2	3	4	5	6	7
3. shouted or yelled at my teen because I was mad at him or her.	1	2	3	4	5	6	7
4. argued with my teen whenever we disagreed about something.	1	2	3	4	5	6	7

Appendix D

Peer Social Acceptance Assessment (Asher and Dodge, 1986)

How much do you like to be in activities with this person? (Please circle one number for each person. Circle DK if you don't know the person).

	Yes	No	I don't know this person
1. Name of Peer	1	2	3

Appendix E

Peer Prosocial Behavior Assessment (Parkhurst and Asher, 1992)

This person is cooperative, helpful, and does nice things.

(Please circle 1 for Yes, 2 for No, or 3 if you don't know the person).

	Yes	No	I don't know this person
1. Name of Peer	1	2	3

Appendix F

Peer Aggressive Behavior Assessment (Parkhurst and Asher, 1992)

This person starts arguments or fights, says mean things, and gets mad easily.
(Please circle 1 for Yes, 2 for No, or 3 if you don't know the person).

	Yes	No	I don't know this person
1. Name of Peer	1	2	3

Appendix G

Peer Disruptive Behavior Assessment (Parkhurst and Asher, 1992)

This person breaks the rules, does things you're not supposed to, and gets into trouble at school.

(Please circle 1 for Yes, 2 for No, or 3 if you don't know the person).

	Yes	No	I don't know this person
1. Name of Peer	1	2	3

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