Parent-Adolescent Conflict as Sequences of Reciprocal Negative Emotion:

Links with Conflict Resolution and Adolescents' Behavior Problems

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Abstract

Although conflict is a normative part of parent-adolescent relationships, conflicts that are long or highly negative are likely to be detrimental to these relationships and to youths' development. In the present article, sequential analyses of data from 138 parent-adolescent dyads (adolescents' mean age was 13.44, $SD = 1.16$; 52% girls, 79% non-Hispanic White) were used to define conflicts as reciprocal exchanges of negative emotion observed while parents and adolescents were discussing "hot," conflictual issues. Dynamic components of these exchanges, including who started the conflicts, who ended them, and how long they lasted, were identified. Mediation analyses revealed that a high proportion of conflicts ended by adolescents were associated with longer conflicts, which in turn predicted perceptions of the "hot" issue as unresolved and adolescent behavior problems. The findings illustrate advantages of using sequential analysis to identify patterns of interactions and, with some certainty, obtain an estimate of the contingent relationship between a pattern of behavior and child and parental outcomes. These interaction patterns are discussed in terms of the roles that parents and children play when in conflict with each other, and the processes through which these roles affect conflict resolution and adolescents' behavior problems.

Key words: *Emotion, Parent-Adolescent Conflict, Parenting, Sequential Analysis, Family Dynamics.*

Introduction

Conflict between adolescents and their parents is a common topic of study in research on adolescents. As adolescents mature and seek autonomy from their parents, they increasingly challenge parents' authority and decision making (Laursen & Collins, 2009). While major conflicts are not normative, low-level conflicts or disagreements are quite commonplace, with conflicts typically focused on disagreements over authority, autonomy, responsibilities, and appropriate behavior (Smetana, 2011). Functional forms of conflict involve attempts to conciliate and resolve the dispute, whereas dysfunctional forms tend to involve reciprocal hostility and prolonged displays of anger and negative emotion. Parent-child conflicts that cause parents and adolescents to revisit roles and responsibilities in light of adolescents' increasing maturity and autonomy are considered to serve an adaptive role in family relationships and in the development of children's social-emotional skills (Laursen & Collins, 2009). Dysfunctional conflicts, on the other hand, have been found to be associated with children's poor well-being and impaired psychosocial adjustment during adolescence (Tucker, McHale, & Crouter, 2003).

The idea that conflict may actually facilitate development has been proposed by prominent developmental scholars, including Piaget (1965), Kohlberg (1969), and Erikson (1968), and has been promoted by many subsequent theorists who have argued that optimal development takes place in the give-and-take of interpersonal relationships (e.g., Ryan & Deci, 2000). Moreover, despite the notion of adolescence being a period of "storm and stress" characterized by increased conflict with parents, contemporary scholars, almost without exception, emphasize that frequent conflicts with parents in adolescence do not indicate a serious or enduring disruption in parent-adolescent relationships (Laursen & Collins, 2009). In fact, the majority of parent-child conflicts during adolescence are about typical, everyday family matters such as home chores, personal hygiene, friends and social life, and school work (Collins & Laursen, 2004). Such conflict topics are thought to indicate adolescents' desire for autonomy and independence from parents (Pinquart & Silbereisen, 2002). The content of common conflict topics also suggests that they are focused around parents' efforts to socialize their children. Indeed, even when conflict frequency is relatively high, parents and adolescents tend to report that their relationship is good, that they share a wide range of core values, and that they retain a considerable amount of mutual affection and positive feelings (Arnett, 1999).

While these basic facts about conflicts are clear, the specific features of parent-child conflicts that make them functional or dysfunctional to adolescents and to parent-adolescent relationships are not well understood. In order to explicate such features, it is necessary to move beyond the study of the typically used global indicators of

parent-child conflict (e.g., reports of relationship quality, conflict frequency, etc.) to the study of mechanisms of conflict. Conflict can be expressed through verbal, physical, or emotional exchanges between the parent and the child. Understanding these exchanges may be key to identifying dysfunctional parent-child conflicts.

Emotion, as expressed through facial expressions, body language, or other physiological reactions, is a key component of conflict interactions (Cacioppo & Gardner, 1999). The role played by emotion in conflict escalation and de-escalation has long been recognized by scholars who study family relationships and conflict management (Gottman, 1994). However, to the best of our knowledge, researchers have yet to devote significant attention to the role of moment-to-moment changes in negative emotion as indicators of conflict. The current article uses sequential analyses of micro-analytic data (in other words, the contingency of affect in alternating, contiguous 10-second intervals during an ongoing interaction) to examine whether episodic escalations and de-escalations of negative emotion in parent-child discussions can effectively serve to mark the start and end of conflicts in a way that predicts whether the conflictual issue is resolved and whether children tend to exhibit symptoms of behavior problems. Moreover, our perspective on conflict highlights the role of two additional features of conflict – tendencies for reciprocating negative emotion and children's and parents' roles in starting and ending conflicts – which we see as central to the understanding of the role of emotion in parent-child conflicts.

Conflict as an Emotion Construct

Parent-child relationships are the first and primary contexts in which children learn how to cope with interpersonal stress and regulate negative emotions with others. Indeed, children's regulation of negative emotions is interpersonal in nature, with family members providing much of the regulation of negative emotion (Morris, Silk, Steinberg, Myers, & Robinson, 2007). Parents who help their child regulate his or her emotions probably foster their child's acceptance of, and coping with, negative emotion by offering warm support and guidance for active regulation, such as suggestions for how to cope with anger, distress, sadness, and other negative emotions. The reciprocal nature of the parent-child interaction might therefore provide a unique opportunity for children to learn self-regulation (Eisenberg et al., 2008). Furthermore, it is during adolescence that children's ability to regulate their emotions increases. Adolescents' heightened awareness of the interpersonal consequences for a particular display of emotion and their changing relationships with their parents and peers influence their decisions to express certain emotions. For example, adolescents are less likely to express emotion when a negative reaction is expected (Zeman, Cassano, Perry-Parrish, & Stegall, 2006).

The regulation of negative emotion may play a particular key role in conflict interactions. When one partner in a parent-child interaction expresses negative emotion, an effective response from the other partner requires him or her to appraise the contextual features of the interaction and to plan a sequence of actions that serves to both modify the interaction and to minimize its aversiveness (Dodge, 1989). To effectively manage conflict, parents and children must be able to integrate situational information from a variety of sources, manage their emotional states, and coordinate different coping styles. An adaptive response serves to stop the conflict and discourage the other person from future attempts to express opposition.

However, given the major differences in social knowledge and skills and the imbalance of power between parents and children, parents' ineffective regulation of emotion is likely to have a greater influence on both short- and long-term outcomes than children's ineffective regulation. Research has shown that children are as sensitive to nonverbal anger or to distressed emotions as they are to overt or verbally expressed anger (Cummings, Ballard, & El-Sheikh, 1991). Indeed, considerable research demonstrates the significance of high parental negative emotion to dysfunctional family processes and to various developmental problems in children (Leung & Slep, 2006). Parents who display high levels of negative emotion also engage in harsher and over-reactive discipline (Leung & Slep, 2006) and in more coercive exchanges with their children (Patterson, 2002). These negative parenting behaviors may, in part, explain associations between parents' negative emotion and children's poor socioemotional adjustment (Dix, 1991). Further, parents' displays of negative emotion in response to their child's negative emotion have been specifically linked to children's impaired emotional regulation and social skills and to heightened behavior problems (Schultz, Izard, Ackerman, & Youngstrom, 2001).

It is clear that negative emotion is important in parent-child relationships generally and in their conflict interactions in particular, it makes sense that emotion should function as a marker of the presence of parent-child conflict. Steinberg and Silk (2002) argued that "it may be the affective intensity of the conflict, rather than its frequency or content, that distinguishes adaptive from maladaptive parent-adolescent conflict" (p. 123). In other words, emotion may be more important than what the partners say to each other during conflicts or how often they engage in conflict. Negative emotion may be a particularly important marker of conflict in adolescence. In a meta-analysis by Laursen, Coy, and Collins (1998), the overall frequency of conflicts between parents and children declined (rather than increased, as commonly thought) during adolescence; however, the intensity of parent and children negative emotion did increase across adolescence (also see Smetana, Campione-Barr, & Metzger, 2006).

These findings suggest that the expression and regulation of negative emotion is crucial to parent-child relationships generally and to their conflict interactions in particular. We thus decided to use negative emotion as a marker for the occurrence of a relatively intense and potentially problematic conflict. We are not aware of any research to date that has used emotion as the sole determinant of the presence of such conflicts and, consequently, the present study is unique in doing so.

Starting and Ending Conflicts

Although conflict interactions are easily recognized once they are in full swing, it is difficult to identify exactly when a conflict begins as well as when it ends. Interpersonal conflicts are often defined as situations where two or more persons manifest the belief that they have incompatible objectives (i.e., beliefs, goals, etc. Kriesberg, 2007). This manifestation often takes the form of a negative response to the behavior or verbalization of another that is perceived to be aversive (Patterson, 1982). For example, if a parent yells at a child for playing loud music in his or her room, and if the child responds with a similarly aversive behavior by turning up the volume, a cycle of mutually aversive verbal and non-verbal behavior begins, with both the parent and the child escalating their aversive behaviors in an effort to overpower the other. This cycle ends only when one of the partners gives in by de-escalating his or her aversive behavior. In this article, we propose that observed emotion can serve as a marker of the escalation or de-escalation of conflicts as they are an outward expression of one partner's frustration or unhappiness with their partner's own emotions, verbalizations, or behaviors. It is important to note that we do not question the definition of conflict as proposed by Kriesberg (2007) and others. Rather, we restrict our examination to the emotional dimension of conflicts and propose a formal method to study it.

 Few researchers have considered the importance of who starts and who ends a conflict. From a methodological point of view, the empirical analysis of conflict initiation requires close attention to which turn in a sequence signals the beginning of conflict episode. In the current article, we argue that conflict requires mutual opposition; a single instance where one person opposes (e.g., disagrees, disapproves, etc.) another is not a conflict. Rather, our definition of conflict requires that an initial negative action from one person be met with a negative reaction by the partner. If a negative response to an initiation occurs, then the initial oppositional instance retrospectively marks the beginning of the conflict episode (Maynard, 1985). This definition of the initiation of a conflict requires a micro-level of analysis in which the interaction dynamics are examined individually and sequentially. Because interactions are by nature changeable, and the way they change is contingent on what has just

occurred, sequential analyses are the most appropriate method for investigating these dynamics.

A significant attempt to disentangle such family dynamics was made by Vuchinich (1987), who described verbal parent-child conflicts during routine family interactions in detail, including who started the conflicts, who ended them, how long they lasted, and how they ended. In Vuchinich's sample, approximately 54% of all parent-child conflicts were initiated by the parent, and approximately 50% ended by the parent. However, he did not look at expressed emotion; nor did he examine associations with any child or family outcomes.

Moreover, although conflict resolution has been a far more popular focus of investigation than conflict initiation, research on this topic also lacks a clear examination of which dyad member ended the conflict and the point in the interaction in which it occurred. Most research characterizing parent-child conflicts has used measures of "conflict resolution style" as predictors of child behavior problems and family dynamics. Interestingly, though, such measures do not in fact characterize who "resolved" or ended a conflict but rather capture the overall style of the conflict interaction (e.g., positive problem solving, conflict engagement, withdrawal; e.g., Branje, van Doorn & Van der Valk, 2008). Thus, the implications of the dynamic features of parent-child conflict such as who starts and who ends any given conflict exchange for children's development are as yet unknown. In the present study, we proposed that who starts and who ends a conflict have implications for the short-term quality of the conflict and for the long-term behavior of the child.

Length of Negative Emotion Exchanges

Theoretical and empirical efforts have identified reciprocation of negative emotion as an important factor in understanding parents' emotional socialization and both parents' and children's emotion regulation and emotional behavior (Eisenberg et al., 2008). Parents and children can develop patterns of reciprocated emotional exchanges, such that as the parent's negativity increases, the child is more likely to react with increased negativity as well (Patterson, 1980). Carson and Parke (1996) found that reciprocal exchanges of negativity between parents and their children were correlated with negative social outcomes, suggesting that children who engaged in reciprocal negative exchanges with their parents were not well accepted by peers. Consistent with this perspective, Lindahl and Markman (1990) proposed that children growing up in families that have difficulty de-escalating negative emotions might have difficulties recognizing and managing their own negative emotion. From a social learning perspective (Bandura, 1977), children exposed to patterns of reciprocated negative emotion are thought to internalize

maladaptive modes of conflict resolution, which might eventually lead them to behave aggressively in social situations (Dodge, Coie, & Lynam, 2006).

Reciprocating negative emotion might also play a key role in the productiveness of the conflict, particularly whether the partners agree on a solution. Gottman (1994) found that couples who reported low levels of marital satisfaction demonstrated patterns of reciprocal negative expressions during interactions, a phenomenon he called "negative affect reciprocity". Similar to Patterson (1980), Gottman (1994) identified patterns of negative emotion reciprocity in the interactions of some couples such that when one spouse expressed negative emotion, the other spouse was more likely to respond with negative emotion. Such reciprocal expressions of negative emotion, Gottman argued, become an "absorbing state" which is resistant to change and to conflict resolution. Although marital relationships are in many ways different from parent-child relationships, it is likely that the experience of negative emotion reciprocity in parent-child relationships results in a similar absorbing state that makes conflict resolution more difficult. This possibility was considered in the present study by determining whether longer reciprocations of negative emotion were associated with parents' and children's perceptions of the conflict as unresolved. An additional goal of this study was to examine whether the length of reciprocating negative emotion exchanges mediated the association between type of conflicts, as defined by who started and who ended them, and whether (a) the partners viewed the conflict as resolved and (b) teachers reported the child as having behavior problems.

Study Purpose and Hypotheses

Parent-child interactions are key contexts in which children learn ways to assert their individuality and regulate negative emotion while maintaining close relationships. To the best of our knowledge, and despite the acknowledged importance of negative emotion in parent-child relationships, no research to date has examined parent and child negative emotion as markers of the presence of significant conflict or of when it starts or ends. Further, few researchers have used sequential analysis to identify moment-to-moment changes in parents' and children's negative emotion in order to disentangle the dynamics of conflicts that unfold over time or to link these dynamic qualities of conflicts with dyadic and child outcomes. The use of sequential analysis in the present study serves to organize behavioral data in a way that allows us to detect interaction patterns.

Using observational data for a sample of adolescents and their primary caregivers, we investigated the associations of four types of parent-child conflict (i.e., parent started-child ended, parent started-parent ended, child

started-parent ended, and child started-child ended) with perceived resolution of the conflictual discussion (considered a proximal outcome as it was based upon the observed interaction) and with children's behavior problems (considered a distal outcome because it was reported by teachers for behavior in the school context).

All of these relationships were examined with conflict length (i.e., length of reciprocating negative emotion) as a potential mediator. How often one partner starts a conflict is a key indicator of his or her power in, and dissatisfaction with, the relationship and, thus, if most conflicts are started by one partner, this could signal a dysfunctional relationship. High rates of parent-started conflict may verge on nattering, whereas high rates of child-started conflict may verge on defiance (Patterson, 1986). We thus did not have a directional hypothesis about the implications of high proportions of parent- vs. child-started conflicts. However, we did have a specific hypothesis about the ending of conflicts. Given parents' responsibility to socialize children in how to manage conflict and how to regulate negative emotion, we predicted that parent-ended conflicts would reflect parents' taking on this role whereas child-ended conflicts would reflect parents' abdication of this role. We, therefore, expected that a higher proportion of child-ended conflicts would be associated with low resolution of the conflicts and with more child behavior problems. In addition, to rule out the possibility that children's overall negative emotionality could account for any associations between their observed negative emotion in the interaction and the extent of their behavior problems, teachers' reports of child dispositional negative emotions were included as a covariate in all analyses.

Method

Participants

Participants were 139 dyads of primary care-giving parents (126 mothers and 13 fathers) and children who were part of a larger longitudinal study of emotional and social development (Eisenberg et al., 1996, 2005, 2008). For the purpose of this article, we only used data from the fourth wave of the study (T4) which included a discussion task. One mother-child dyad was excluded from analyses because the videotape of their interaction task was lost. In the final sample of 138 dyads, boys and girls were approximately equally represented (52% girls). Children's ages ranged from 11 to 16, with a mean of 13.44 (SD = 1.16). Of the 138 children, 79% were non-Hispanic White, 13% were Hispanic, 3% were Native American, 2% were of Asian extraction, and 3% were reported as being of another race. Socioeconomic status varied widely. In terms of parental education, 3.6% of parents had less than a high school degree, 7.2% had a high school diploma but no further education, 19.6% had some college but no degree; 13.8% had a 2-year degree of some sort; 36.2% had a college degree; 16.7% had a graduate degree, and 2.9% did

not report their level of education. Family income also ranged widely, with 6% of families earning less than 20,000$ a year, 12% earning 20,000$-40,000$ a year, 29% earning 40,000$-60,000$ a year, 20% earning 60,000$-80,000$ a year, 18% earning 80,000$-100,000$ a year; and 12% earning more than 100,000 a year (3% of the families did not report their annual family income).

The families who participated in the discussion task were compared with those from the longitudinal study who had attrited or who had only participated in the study by mail. There were no differences by income, parent education, observed parenting variables, or child temperament. The only difference was for race, with significant attrition by minority families (Eisenberg et al., 2008).

Design and Procedures

The primary care-giving parent and child came to the laboratory for observed assessments, where they were greeted by an extensively trained experimenter who was the same sex as the child. Shortly after arriving, the parent was ushered into a separate room to complete questionnaires while the adolescent engaged in a variety of activities (see Eisenberg et al., 2008, for further details). In preparation for the discussion task, the parent and the child separately completed a questionnaire (modified version of the Issues Checklist: Prinz, Foster, Kent, & O'Leary, 1979) to rate which topics had been major sources of disagreement, or "hot" topics, in the past month (e.g., daily chores, school, manners). A graduate student compared the two sets of responses and chose the two topics rated as most conflictual by both parent and child, with the stipulation that the parent had to see a given topic as conflictual. The most frequently discussed topics were cleaning up/chores, how the family gets along, respect/manners, and free time. Parents and children were then brought to a room to participate in a discussion task in which they would discuss their most conflictual issue for "5 to 10 minutes" and try to come up with a solution. The actual discussion length was 6 minutes for all dyads. If they finished discussing the first topic before the time was up, they were instructed to go on to the second most conflictual topic. The experimenter left the room and the discussions were videotaped with one camera focused on the head and torso of the parent and one on the head and torso of the adolescent. The experimenter reentered the room at the end of the 6 minutes, regardless of whether the conflictual issue was resolved or not. Following the discussion, the parent and the child separately rated how well they thought the issue(s) they discussed had been resolved. At the end of the laboratory visit, parents and children were compensated between $35 and $50, depending on whether they participated in an additional diary study.

In addition to the observations above, children's teachers were contacted and asked to provide ratings of the

children's behaviors. Questionnaires were returned by 130 teachers (94%) who were then compensated $25 for their assistance.

<div align="center">**Measures**</div>

Negative Emotion

Both parents' and children's ongoing non-verbal emotions were coded for the entire 6-minute interaction using primarily the Family and Peer Process Code (Stubbs, Crosby, Forgatch, & Capaldi, 1998) with some specification of affect definitions from the Kahen Affect Coding System (Gottman, Katz, & Hooeven, 1996, 1997). Positive, angry, and sad/distressed emotion were coded for every 10-second interval (for a total of 36 intervals) from split-screen videotapes. For the present analyses, we focused solely on the two aspects of negative emotion: anger and sad/distressed affect. Indicators of anger were angry facial expressions (e.g., furrowed brow, narrowed eyes, pursed or sneering mouth), angry tone (e.g., hostile tone of voice, yelling), and body language (e.g., threatening gestures, wagging finger). Sad or distressed affect was indicated by distressed facial expressions (e.g., raised inner eyebrows, downturned mouth, shaking bottom lip), distressed verbal tone (e.g., sad or resigned tone, quavering voice, rapid or stuttering speech), and body language (e.g., crying, hunched shoulders, hiding face with a hand). Verbal content was coded separately and was not used in the present analyses because our interest in this article was on expressed emotion. Trained coders rated each form of negative affect on a scale from 1 (no evidence of negative affect) to 7 (strong or persistent negative affect) for each 10-second interval; coders rated affect on both its intensity and its frequency, such that an angry outburst (short duration, high intensity) could be coded the same value as a clenched and frowning face that lasted the entire interval (long duration, low intensity). One coder, who was also reliable on Izard's Affex facial coding system (Izard, Huebner, Risser, & Dougherty, 1980), rated all tapes while a second coder rated 23% of the tapes for reliability. Intra-class correlations across raters for anger and sad/anxious affect were .74 and .65 for parents and .71 and .71 for adolescents, respectively.

Starts and Ends of Conflicts

As noted above, our interest was in who initiated negative emotion exchanges, who ended them, and how long these exchanges lasted. In order to determine a cut-off point for the presence of negative affect, we looked at the distribution of affect codes across intervals and across participants and found that half of observed affect was coded at 1 or 2 (25.7% and 23.9%, respectively) and half at 3 or above (30.6% at 3, 16.7% at 4, 2.6% at 5, 0.4% at

6, 0.1% at 7) We thus decided to use the median of 2.5 as the cut-off for the presence of elevated affect, such that we considered negative affect to be present if it was coded by observers as 3 or above on the 7-point intensity scale. In order to determine if negative affect was reciprocated, we aligned the parent and child affect codes by time and examined them sequentially for instances when both participants' negative affect (anger or sadness/distress) was rated by the coders at a 1 or 2 (no or very mild negative affect) in one interval but then one participant's anger or sadness/distress was coded as rising to a 3 or above (negative affect present) in the next interval. We then looked at the subsequent time interval to see if the partner's anger or sadness/distress were also coded as rising to 3 or above. If so, a conflict was identified, and the participant whose negative affect was first to rise to 3 or above was noted as the one who started the conflict. The conflict was defined as continuing until one partner was observed to reduce his or her negative affect to below a 3. This participant was identified as the one who ended the conflict. If this same partner who ended the conflict was observed to increase in negative affect to a 3 or above on a subsequent code, this was marked as the beginning of a new conflict.

All conflicts identified for each dyad were categorized as falling into one of four patterns:

Parent Started, Child Ended (PSCE): the proportion of conflicts that were ended by the child, out of the total number of conflicts started by the parent.

Parent Started, Parent Ended (PSPE): the proportion of conflicts that were ended by the parent, out of the total number of conflicts started by the parent.

Child Started, Parent Ended (CSPE): the proportion of conflicts that were ended by the parent, out of the total number of conflicts started by the child.

Child Started, Child Ended (CSCE): the proportion of conflicts that were ended by the child, out of the total number of conflicts started by the child.

Length of conflict. We focused on the longest chain of negative reciprocity (consecutive exchanges of anger or sad/distressed affect at an intensity of 3 or higher) observed in each dyad's interaction. Length of the longest conflict varied widely across dyads from 0 (no conflict) to 35 intervals-long chains out of a possible 36 intervals. The median was 6 consecutive intervals in conflict (*mean* = 6.4, *SD* = 6.3); 9 dyads had no conflict and received a score of 0 for length of conflict. Based on the fact that each interaction included 36 intervals and that some conflicts were extremely lengthy, we chose to use the length of the longest conflict as the index of conflict length rather than the average length of conflicts each dyad had. We did so because a dyad that had one long conflict

could have only few additional short conflicts within the 36 intervals, and thus an average would obscure the reality that the dyad was in fact in a conflict state for the majority of the observed interaction. For example, if a dyad had one 30-interval-long conflict and one 2-interval-long conflict, its average of 16 seconds would underestimate the amount time the dyad spent in conflict. Given the distribution of conflict length (skew = 1.5, kurtosis = 1.87), and because having one variable with a much larger distribution than the others can make it difficult to get to a model solution, we reduced this 0-36 scale to an 8-point scale. Dyads were distributed across the final 8-point scale reflecting the length of the longest interval as follows: 0 = no chains of negative reciprocity ($n = 9$); 1 = a 2-3 interval-long chain ($n = 21$); 2 = a 4-5 interval-long chain ($n = 27$); 3 = a 6-7 interval-long chain ($n = 22$); 4 = a 8-10 interval- long chain ($n = 20$); 5 = a 11-13 interval-long chain ($n = 14$); 6 = a 14-16 interval-long chain ($n = 5$); 7 = a 17-36 interval-long chain ($n = 20$). Thus, dyads in the highest category (7) spent at least half of the 6-minute interaction in a negative affect exchange. The mean of this reduced scale was 3.34 ($SD = 2.12$, skew = .37, kurtosis = -.9) and it was strongly correlated with the overall amount of time spent in conflict, $r = .88$, $p < .001$. Mean lengths of conflict for each conflict type were 3.11 ($SD = 1.94$) for PSPE, 2.63 ($SD = 1.88$) for PSCE, 2.89 ($SD = 2.08$) for CSPE, and 2.67 ($SD = 2.08$) for CSCE. One-way ANOVA was used to test for differences in means of conflict length of the four conflict types but no differences were found, $F (3, 282) = 0.66$, ns. However, we did not use the averages within each of the four types of conflict for our analyses because not every dyad had each type of conflict (49% had no PSPE, 78% had no PSCE, 17% had no CSPE, and 46% had no CSCE) which would have led to unreliable estimates.

Child Behavior Problems

Teachers rated children's behavior problems on the Child Behavior Checklist (CBCL; Achenbach, 1991). Teachers were asked to report on a 4-point scale (1 = 'never' to 4 = 'often') how often each child behavior was occurring. Two mutually exclusive scales for oppositional defiant behaviors and conduct disorder behaviors were then constructed (see below).

Child oppositional defiant behaviors. An oppositional defiant behaviors scale was created by summing 3 subscales of the CBCL that reflect oppositional defiant behaviors (Achenbach, Dumenci, & Rescorla, 2003) and recent work on oppositional defiant behavior items in the CBCL (Stringaris, Zavos, Leibenluft, Maughan, & Eley, 2012), namely *Irritability* (e.g., temper tantrums, irritable), *Headstrong* (e.g., argues, blames others for misbehavior, disobedient), and *Hurtful* (e.g., yells at others, sasses). The total 11-item oppositional defiant scale had very strong

internal reliability, $\alpha = .94$.

Child conduct disorder behaviors. A subset of 12 items from the CBCL delinquent and aggressive behavior constructs was extracted to create a conduct disorder scale in accordance with the DSM-IV definition of conduct disorder and based on empirical evidence for the predictiveness of conduct disorder using a subset of items from these two CBCL scales (Tackett, Krueger, Sawyer, & Graetz, 2003). The conduct disorder scale included items such as "threatens or bullies other children," "cruel to animals," and "breaks things on purpose." Cronbach's alpha for the conduct disorder scale was .94.

Perceptions of the "hot" issue as unresolved. Once the discussion task was finished, parents and children were separated in order to complete a short questionnaire assessing their perception of whether they had resolved their conflictual issue(s). This questionnaire was an adaptation of the Problem Solving measure used by the Oregon Social Learning Center (D. Capaldi, personal communication, 1998) and included the items "How much did you agree on a solution?" (ranging from 1 = *definitely agreed* to 5 = *definitely disagreed*), "Do you think you solved this problem?" (ranging from 1 = *yes, definitely* to 5 = *definitely not*), and "How satisfied were you with the discussion?" (ranging from 1 = *very satisfied* to 5 = *not at all satisfied*). Cronbach's alpha for these items was .74 for child report and .84 for parent report.

Dispositional Negative Emotionality

Teachers completed a measure of children's negative emotion intensity adapted from Larsen and Diener's (1987) self-report measure for adults (Eisenberg et al., 1996; Eisenberg, Fabes, Guthrie, & Reiser, 2000). Five items pertaining to negative emotional intensity were rated from 1 = *never* to 7 = *always* (e.g., "When this child experiences anxiety, it normally is very strong"; alpha = .85). Average levels of negativity (on a scale of 1-7) for each conflict type were 3.38 ($SD = .73$) for PSPE, 3.51 ($SD = .83$) for PSCE, 3.43 for CSPE ($SD = .46$), and 3.37 for CSCE ($SD = .74$); these means were not significantly different from one another at a 95% CI.

Analyses

Preacher and Hayes' (2004) bootstrapping technique was used to test for mediation. The bootstrapping method provides advantages not afforded by Baron and Kenny's (1986) approach, which fails to provide a specific statistical test for the indirect effect that an independent variable has on a dependent variable via a proposed mediator. Further, the bootstrapping method enabled us to test for significant mediation in the absence of a direct effect of the independent variable on the dependent variable. That the independent variable can exert an indirect

effect on the dependent variable through the mediator in the absence of an association between the independent variable and dependent variable is now known to be possible, and even common (Hayes, 2009), and is viable because a total effect is the sum of many different paths of influence, direct and indirect, not all of which might be a part of the formal model.

As outlined by Preacher and Hayes (2004), mediation is demonstrated when the confidence interval (CI) for the indirect effect does not contain zero (i.e., indicating that the indirect effect is significantly different than zero). One thousand bootstrap resamples were used to generate 95% CI that estimated the size and significance of the indirect effects. All analyses were performed using macros developed by Preacher and Hayes (2004) for use in SPSS.

<div align="center">**Results**</div>

Preliminary Analyses

Descriptive statistics for and correlations among all key variables are presented in Table 1. Proportions of the four conflict types, in addition to the conflict's length, were computed for each of the 138 dyads. For each dyad, PSPE and PSCE added to 100% and CSPE and CSCE added to 100%. However, the mean values (proportions) in Table 1 do not add up to 1.00. This is a result of the fact that not every dyad had a parent-started conflict and not every dyad had a child-started conflict: a total of 56 dyads had no parent-started conflicts and 9 dyads had no child-started conflicts. In these cases, both subcategories (i.e., PSPE and PSCE for the parent-started category) would be zero, and these zeros pulled down the averages of *both* subcategories (i.e., both PSPE and PSCE were pulled down). When the proportions within each dyad were examined, they did add up to 100%. For the 82 dyads with parent-started conflict, 69.6% were parent-ended and 30.4% were child-ended, whereas for the 129 dyads with child-started conflicts, 69.9% were parent- ended and 30.1% were child ended.

Scores for oppositional defiant and conduct disorder behaviors could not be computed for a small subset of children (8 and 9, respectively) due to missing reports from teachers. In addition, 2 parents and 5 children did not complete the post-discussion questionnaire; thus, data on their perceptions of the conflict as resolved or unresolved were missing. The SPSS macro that was later used to test for mediation using the bootstrapping approach (Preacher & Hayes, 2004) uses a list-wise deletion method to handle missing cases. If some cases are missing on the dependent variable (Y; i.e., child behavior problems or perceptions of the conflict as unresolved), the program will throw all those cases out of the analyses estimating the effect of the dependent variable (X) on the mediator (M),

even if those cases are complete on X and M.

Each regression analysis described below included the following covariates: child's negative emotionality, child's sex, child's age, ethnicity (non-Hispanic White vs. all others), and the sex of the participating parent. All analyses were rerun with only those dyads with mothers and all results were the same; thus, we decided to retain the father-adolescent dyads in the analyses while controlling for parent sex.

Prediction of Length of Conflict

Length of the longest conflict was regressed on the proportion of each conflict type. Higher proportions of the two child-ended conflicts, PSCE and CSCE, were associated with longer conflicts, $\beta = .24$, $p < .01$, $F(6, 123) = 3.18$, and $\beta = .21$, $p = .05$, $F(6, 123) = 2.79$, respectively. Proportions of the two parent-ended conflicts, CSPE and PSPE, were not associated with longer conflicts, $\beta = .07$, ns, $F(6, 123) = 1.80$ and $\beta = .06$, ns, $F(6, 123) = 1.84$, respectively. Because the associations with length fell along the lines of who ended, rather than who started, the conflicts, we combined the two child-ended (CE) conflict types to an overall proportion of CE conflicts, and the two parent-ended (PE) conflict types to an overall proportion of PE conflicts. Higher proportions of CE conflicts were associated with longer conflicts, $\beta = .24$, $p < .01$, $F(6, 123) = 8.12$, $p < .01$. Given the fact that CE and PE add up to 1 for each dyad, ultimately the effect of the proportion of CE conflicts is the inverse of the effect of the proportion of PE conflicts. In knowing the proportion of CE conflicts (e.g., .55), we also know the proportion of PE conflicts (e.g., .45), and thus CE and PE will always have opposite associations with other variables. We thus only report CE in the analyses below for sake of parsimony and clarity.

Length of Conflict Predicting Perceived Resolution of "Hot Topic" Issue and Child Behavior Problems

We next regressed each outcome variable on the length of the conflict (see Table 2). When doing so, we controlled for both PSCE and CSPE (the two other conflict types were unnecessary to control for in these analyses since the proportions of PSCE and PSPE, and CSPE and CSCE, are complementary for each dyad). Both children's and parents' perceptions of the conflictual issue as unresolved were significantly predicted by length of conflict, $\beta = .23$, $p < .001$, and $\beta = .36$, $p < .001$, respectively. In addition, both types of behavior problems were significantly predicted by length of conflict, $\beta = .25$, $p < .001$, for oppositional defiant behaviors, and $\beta = .17$, $p < .05$, for conduct disorder behaviors.

Mediation Analyses

Four separate mediation models were conducted with CE conflicts as the independent variable, children's

and parents' perceptions of the issue as unresolved and children's oppositional defiant and conduct disorder behaviors as dependent variables, and length of conflict as the potential mediator. Results are presented in Table 3. We acknowledge that using the length of the conflict as a mediator following proportions of child-ended conflicts may seem conceptually out of order. However, in this study, proportions of child-ended conflicts reflect a feature of dysfunctional parent-child conflicts that may exert indirect effects on each outcome through its association with another toxic feature of dysfunctional outcomes (i.e., conflict's length). In the absence of such a toxic mediating feature, the relationships of child-ended conflicts and outcomes may not hold. For example, high proportions of child-ended conflicts that are, in fact, short in duration, may not exert an indirect effect on child behavior problems because these children may be conflict avoidant, compliant, less resistant, etc. Such child characteristics may be linked with a tendency to end conflicts, but to also do it quickly, which *prevents* them from falling into coercive traps that may strengthen with time, appear in other contexts, and lead to problem behaviors.

Children's and Parents' Perceptions of the "Hot Topic" Issue as Unresolved

When predicting parents' perception of the issue as unresolved, the proportion of CE-conflicts was significantly positively associated with length of conflict, $B = 1.80$, $SE = .59$, $p < .01$, and length of conflict had a significant positive association with parents' perception of the issue as unresolved, $B = .19$, $SE = .04$, $p < .001$. The mean bootstrap estimate for CE was .40, $SE = .14$, with a 95% CI between .12 and .68. Since zero was not in the CI, this indicates a significant indirect effect of CE on parents' perception of the issue as unresolved through length of conflict. Dyads with higher proportion of CE conflicts had longer conflicts, which in turn were associated with stronger parental perceptions of the issue as unresolved.

Similarly, length of conflict significantly mediated the link between proportion of CE conflicts and children's perception of the issue as unresolved. CE was significantly associated with length of conflict, $B = 1.74$, $SE = .59$, $p < .01$, which in turn significantly predicted children's perception of the issue as unresolved, $B = .10$, $SE = .04$, $p < .01$. The mean bootstrap estimate for the indirect effect of CE on children's perception of the issue as unresolved was .18 ($SE = .10$) with a 95% CI between .04 and .43.

Child Behavior Problems

When predicting children's oppositional defiant behaviors, CE had a significant effect on length of conflict, $B = 1.60$, $SE = .61$, $p < .01$, and length of conflict significantly predicted children's oppositional defiant behaviors, $B = .04$, $SE = .02$, $p < .05$. The mean bootstrap estimate for the indirect effect of CE on children's oppositional defiant

behaviors was .08 (*SE* = .04) with a 95% CI between .02 and .19. Zero was not in the CI, indicating that there is a significant indirect effect from CE to children's oppositional defiant behaviors through length of conflict. In other words, dyads with relatively high proportions of CE conflicts had longer conflicts, which in turn were associated with more child oppositional defiant behaviors. However, in the path model testing children's conduct disorder behaviors, length of conflict was not associated with children's conduct disorder behaviors, *B* = .01, *SE* = .02, *p* > .05. In addition, the mean bootstrap estimate for the indirect effect of CE on children's conduct disorder behaviors was .01 (*SE* = .03) with a 95% CI between -.03 and .9. The fact that zero was included in the CI indicated that there was no significant indirect effect of CE on children's conduct disorder behaviors through length of conflict.

Discussion

Although past research has identified dysfunctional parent-child conflicts as a risk factor for adolescents' well-being and for parent-adolescents relationships, little is known about the specific features that define conflict as dysfunctional. The present study was designed to identify patterns of parent-adolescent conflict that interfere with conflict resolution and are linked with adolescents' problem behavior. Although attempts to characterize family conflicts by who starts and ends them have been made in the past (Vuchinich, 1987), these conflict characteristics have not been linked with child and family outcomes. Moreover, increases of expressed negative emotion, although known to be associated with conflict, have never been used as the sole determinant of the presence of a conflict. Thus, key innovations of this study were the use of sequential analysis to identify parent-child conflicts from observed interactions, the operationalization of conflict as episodic escalations of negative emotion, and the examination of key structural features of conflict, namely who started them, who ended them, and how long the conflicts lasted. The extent to which observed emotional conflicts are ended by children as opposed to parents emerged as a key factor in linking conflict with both success at resolving discussions of hot topics and with adolescents' behavior problems.

By defining conflicts as instances of mutual elevated negative emotion, we supplemented the past literature that relied mainly on self-reports of conflict frequency and conflict resolution style. Although the role played by emotion in conflict escalation and de-escalation has long been recognized by scholars who study family relationships and conflict management (Gottman, 1994; Patterson, 1982), to the best of our knowledge this study is the first to devote attention to the role of negative emotion as a marker of conflict episodes.

Parents' and Children's Roles in Starting and Ending Conflicts: Predicting Length of Conflict

We focused our attention on the length of the longest conflict, which served as a marker of dysfunctional parent-adolescent conflict, as well as on who started and who ended the observed negative emotion exchanges that defined conflicts, something that, to our knowledge, has only been done once before (Vuchinich, 1987), and then only descriptively. We found that who initiated the conflict did not seem to be a distinguishing feature of dysfunctional parent-child conflicts. In other words, having more conflicts started by parents or by adolescents was not predictive of either the proximal or distal outcomes. Although a high proportion of parent-started conflicts could constitute nattering, whereas a high proportion of child-started conflicts could be a sign of oppositional defiant behavior, these proportions were not linked with either set of outcomes in the present study. It may be that because the presence of conflict is normative in parent-adolescent interactions (Steinberg, 2001), who starts the conflicts is not important for the proximal and distal outcomes examined here.

Instead, how long the conflicts were and who eventually ended them were the characteristics of conflicts most linked with the resolution of conflicts and with adolescent problem behavior. The higher proportion of a dyad's conflicts that were child-ended, the longer a dyad's longest conflict was. In other words, more child-ended conflicts were associated with parents and adolescents spending a greater proportion of the observed time in a conflict state. These results provide insight into how, on a moment-to-moment basis, dysregulation of emotion might lead to longer and more conflictual parent-child interactions such as coercive cycles. When parents allow conflicts to escalate and refrain from ending them, it may place children at risk for internalizing maladaptive forms of conflict management.

A possible explanation for why proportions of child-ended conflict were associated with negative emotion reciprocity involves the goals a parent has when interacting with his or her child, and their associations with emotion and behavior. Parents' emotions during parent-child interactions have been associated with different parenting behaviors. Specifically, anger had been positively linked to power assertion and negatively linked to reasoning and responsiveness (Dix, Ruble, & Zambarano, 1989). Dix (1991) argued that parents' emotions are associated with the goals that the parents desire to promote in a given situation. Child-centered goals reflect a parent's desire to promote the child's well-being or to promote a close relationship. Achieving such goals during a conflict would require the parent to maintain neutral or positive emotions in order to present explanations rationally and clearly. Parent-centered goals, on the other hand, reflect the parent's desire for the child's compliance, and might lead to parental negative emotions when the child's actual behavior deviates from the parent's desired behavior (Hastings & Grusec,

1998). When parents' goals are not being met in a conflict with their children, they will likely prolong the conflict in order to achieve their goals to the point where children are the ones who finally end the conflict. Children are in turn motivated to end the conflict, perhaps by complying with parent requests, in order to reduce their parents' negative affect. Such a pattern is an example of a coercive cycle (Patterson, 1986), and it thus may be parents' parent-centered goals that start such coercive cycles.

Child-Ended Conflicts Predicting Perceptions of the Conflict as Unresolved: The Mediating Role of Length of Conflict

We next examined whether conflict length mediated the relationship between the extent to which a dyad's conflicts were child-ended and parents' and children's perceived resolution of the "hot topics". A higher proportion of child-ended conflicts was predictive of both parents' and children's subjective feelings that the conflictual discussion did not end productively. The analyses demonstrate significant mediational relationships with child-ended conflicts, suggesting that more parent-child conflicts ended by the child were associated with longer bouts of reciprocated negative emotion, which in turn were associated with parents' and children's perceptions of the conflict as unresolved. These results support Gottman's (1994) idea of an "absorbing state," such that some dyads' difficulty in de-escalating negative exchanges of emotion is a key component of dysfunctional conflict resolution. That is, dyads that demonstrated longer conflict episodes were generally less satisfied with the way they resolved the "hot topic" they were discussing. It is also possible that because children are less adept negotiators than parents and are still developing emotional and behavioral regulation skills, leaving the task of ending a conflict to a child might result in a longer conflict with no beneficial solution. Although the mediator in these analyses was the longest conflict a dyad had, regardless of who started or ended it, it is possible that in families where child-ended conflicts frequently occur, patterns of long reciprocations of negative emotion may generalize to other conflict types as well. In other words, lengthy reciprocations of negative emotion may eventually occur in all types of parent-child conflicts, both those ended by the child and those ended by the parent.

Alternatively, in regard to children's perceptions of the conflict as unresolved, social exchange theory (Kelley & Thibaut, 1978) might provide an explanation for why children are inclined to resolve conflicts with parents, and yet are not pleased with the solution. For children, it might be important to resolve conflicts with parents because it is in their best interest to maintain the rewards from the parent-child relationship (e.g., attention, resources, and privileges). By focusing on winning a conflict at all costs, children might be at risk for a subsequent

loss of rewards. The costs of ineffective conflict resolution might be larger for children than for parents, making children likely to seek conflict resolution with parents.

The Mediating Role of Length of Conflict: Predicting Child Behavior Problems

A similar pattern of results was found for the development of children's behavior problems. Child-ended conflicts were positively associated with the development of children's behavior problems. Specifically, the higher proportion of times that children were the ones to end a conflict, the more oppositional defiant symptoms they exhibited as reported by their teachers. However, this pattern was not found for children's conduct disorder symptoms. Past research has shown that both oppositional defiant and conduct disorder behaviors are related to parental punitive and aggressive behavior, to parental negative problem-solving orientation, and to conflictual parent-child relationships (Jaffee & D'Zurilla, 2003). Our failure to find associations with conduct disorder behaviors might suggest that the dysfunctional emotional behaviors observed in this study are not the underlying causes for children's conduct disorder behaviors. Conduct disorder might be the result of more severe risk factors, such as poor parental monitoring, harsh parenting, or witnessing violence. Oppositional defiant behaviors, on the other hand, reflect a more emotionally-guided disobedience that might arise as a result of maladaptive emotional processes between a parent and a child, such as those described by theories of coercive family processes (Patterson, 1982).

Also noteworthy is the fact that the relationships between parent–child conflict and adolescents' behavior problems held even after controlling for their negative emotionality. Controlling for children's general tendencies for negative emotionality in each analysis allowed us to have greater confidence that their observed negative emotion was, in fact, a response to an ongoing or escalating conflict with the parent rather than the expression of an underlying temperament.

Finally, these mediated relationships are consistent with the idea that parents who consistently reciprocate their child's negative emotions demonstrate poor emotion regulation. It may be that this poor ability to effectively regulate negative emotion transfers from parents to children through modeling and emotion socialization. Indeed, it has been proposed that children growing up in family environments with poor emotion socialization might have fewer chances to learn how to effectively regulate their own negative emotions in other social contexts (Eisenberg et al., 1995). As suggested in the present study, family-level difficulty in emotion regulation might result in the development of children's behavior problems.

A variety of processes might account for the mediation by conflict length in the relationship between child-ended conflicts and child oppositional behavior. It may be that parents' negative emotions elicit children's resistance and negative emotion, which lead to coercive family interactions and poor emotion regulation. Successfully maintaining cooperative social interaction requires that parents' negative emotion be maintained at an optimal level (Eisenberg et al., 1998). The reactions of parents can escalate or de-escalate children's negative emotions as the interaction proceeds. Parents who react to negative child behaviors with negative emotion can escalate the levels of negative emotion experienced by their children. When a child experiences negative emotion, the parent has a key role in reducing the child's negative emotion and promoting the child's positive emotion. When parents maintain rather than reduce children's negative emotions, children might fail to develop emotion regulation skills (Morris et al., 2007). In fact, individuals who are punished for the expression of negative emotion learn to suppress their expression of the emotion, but paradoxically experience heightened negative reactivity in emotional contexts (Lynch, Robins, Morse, & Krause, 2001).

Study Strengths and Limitations

The present study has several important strengths. One strength is the delineation of the complex nature of parent-child conflict. By employing sequential methods to investigate these conflicts at a microanalytic level, we were able to examine dynamic features of parent-child emotional communication that play a part in child behavior and family processes. Another strength is that, unlike in most existing research, conflict was observed rather than reported, and was defined by the levels and synchronicity of the negative emotion expressed by both dyad members. Additionally, we used teachers' reports of child behavior problems in order to minimize shared method variance.

In addition, our findings have implications for practice. Clinicians working with parents and adolescents should pay attention to the different conflict patterns that parents and adolescents exhibit because these conflicts may affect children's behavior problems and the way the conflict is resolved. These results highlight the need for parent-adolescent conflict management and treatment programs that emphasize compromise and encourage parents to take the initiative in ending conflicts. The present study also has several limitations. An important limitation is that although our sequential analyses looked at lagged relationships between parent and adolescent affect over a 6-minute period, our outcomes were reported at or near the same time as the observation. Thus, the associations reported are correlational and cross-sectional in nature. Ultimately, the mediated associations of parent-ended and child-ended conflicts with child and family processes will need to be replicated with longitudinal data. Longitudinal

data would also allow for the examination of whether dysfunctional patterns of interactions are, to some extent, child-driven, such that children with greater behavior problems elicit more negative emotion from parents. An examination of these possibly bidirectional influences between child behavior problems and parent-child conflict would be best tested with longitudinal data (Cole & Maxwell, 2003). While a longitudinal approach has been taken with average parent and adolescent negative affect across multiple waves (Kim, Conger, Lorenz, & Elder, 2001), such a method for identifying negative reciprocity does not capture the moment-to-moment affect dependency that characterizes intimate relationships. We would argue that, instead, a longitudinal study that examines changes in moment-to-moment negative reciprocity within time and how the nature of reciprocity changes over the course of child and adolescent development (e.g., are parents and adolescents less likely to reciprocate negativity during interactions as children age?) could identify what constitutes the normative pattern of change in micro-level negative reciprocity as children make the transition to young adulthood and possibly identify points for intervention. Finally, the conflictual nature of our observed discussions was predetermined by the research design (i.e., parents and children were asked to discuss topics they previously reported they disagree about), and the conflict arising during these discussion did not evolve naturally. Observing naturally occurring parent-child conflicts would require extended periods of observation that were not feasible in the present study. Observing families in natural settings would reveal how conflict is initiated, sustained, and ended in the process of parent-child interactions and how these patterns predict later parent-child relationships and child adjustment.

Conclusion

The current study represents an important step in the understanding of negative emotion in parent-adolescent conflicts. Operationalizing parent-adolescent conflicts as episodic escalations of negative emotions allowed us to determine that when adolescents were the ones to end the conflict, they were reported by their teachers as having more behavior problems, and both the adolescents and their parents were likely to be less satisfied with how their conflictual discussion was resolved. Furthermore, the factor that seemed to drive these associations is the length of the parent-adolescent conflict, which was determined by negative emotion reciprocity. Results from this study provided additional support for theories of coercive family processes (Patterson, 1982) and documented links between aspects of parent-adolescent conflict and both proximal and distal outcomes. Moreover, these results indicate that parent-adolescent conflicts are not equally detrimental for adolescents' problem behaviors or for effective conflict resolution. It had been proposed that merely the emotional intensity of the conflict may help

distinguish functional from dysfunctional parent-adolescent conflicts (Steinberg &Silk, 2001). Our findings support this proposal by using negative emotion to operationalize conflict and all of its related features (i.e., who started and ended it, and how long it lasted). When handled with less negative emotion, and when efforts to end the conflict are being made by the parent, parent-adolescents conflicts can provide adolescents with the opportunity to learn how to reach a compromise by learning to negotiate their needs and desires, to assert their preferences while understanding those of others, and to manage negative emotion in conflict situations.

References

Achenbach, T.M. (1991). *Manual for the Child Behavior Checklist/4–18 and 1991 profile*. Burlington, VT: Department of Psychiatry, University of Vermont.

Achenbach, T.M., Dumenci, L., & Rescorla, L.A. (2003). DSM-oriented and empirically based approaches to constructing scales from the same item pools. *Journal of Clinical Child & Adolescent Psychology*, *32,* 328–340.

Arnett, J. (1999) Adolescent storm and stress, reconsidered. *American Psychologist, 54,* 317–26.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Branje, S. J. T., van Doorn, M., & Van der Valk, I. (2008). Parent–adolescent conflict, conflict resolution, and adolescent adjustment. *Journal of Applied Developmental Psychology, 30,* 195-204.

Carson, J. L., & Parke, R. D. (1996). Reciprocal negative affect in parent–child interactions and children's peer competency. *Child Development*, *67,* 2217– 2226.

Cacioppo, J. T., & Gardner, W. L. (1999). Emotion. *Annual Review of Psychology, 50,* 191-214.

Cole, D. A., & Maxwell, S. E. (2003). Testing meditational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112,* 558–577.

Collins, W. A., & Laursen, B. (2004). Parent-adolescent relationships and influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 331–361). Hoboken, NJ: Wiley.

Cummings, E.M., Ballard, M., & El-Sheikh, M. (1991). Responses of children and adolescents to interadult anger as a function of gender, age, and mode of expression. *Merrill-Palmer Quarterly, 37,* 543-560.

Dix, T. H. (1991). The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin*, *110*, 3– 25.

Dix, T. H., Ruble, D. N., & Zambarano, R. J. (1989). Mothers' implicit theories of discipline: Child effects, parent effects, and the attribution process. *Child Development*, *60*, 1373– 1391.

Dodge, K. (1989). Coordinating response to aversive stimuli: Introduction to a special section on the development of

emotion regulation. *Developmental Psychology, 25,* 339-342.

Dodge, K. A., Coie, J. D., & Lynam, D. (2006). Aggression and antisocial behavior in youth. In W. Damon & R. M. Lerner (Series Ed.) and N. Eisenberg (Vol. Ed.*), Handbook of child psychology. Vol. 3. Social, emotional, and personality development* (6th ed.). New York: Wiley.

Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry, 9,* 241–273.

Eisenberg, N., Fabes, R. A., Guthrie, I. K., Murphy, B. C., Maszk, P., Holmgren, R., & Suh, K. (1996). The relations of regulation and emotionality to problem behavior in elementary school children. *Development and Psychopathology, 8,* 141–162.

Eisenberg, N., Fabes, R. A., Guthrie, I. K., & Reiser M. (2000). Dispositional emotionality and regulation: Their role in predicting quality of social functioning. *Journal of Personality and Social Psychology, 78,* 136–157.

Eisenberg, N., Fabes, R. A., Murphy, B., Maszk, P., Smith, M., & Karbon, M. (1995). The role of emotionality and regulations in children's social functioning: A longitudinal study. *Child Development, 66,* 1360-1384.

Eisenberg, N., Hofer, C., Spinrad, T., Gershoff, E., Valiente, C., Losoya, S. L., Zhou, Q., Cumberland, A., Liew, J., Reiser, M., & Maxon, E. (2008). Understanding parent-adolescent conflict discussions: Concurrent and across-time prediction from youths' dispositions and parenting. *Monographs of the Society for Research in Child Development, 73* (Serial No. 290, No. 2), 1-160.

Eisenberg, N., Zhou, Q., Spinrad, T. L., Valiente, C., Fabes, R. A., & Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child Development, 76,* 1055–1071.

Erikson, E. H. *Identity: Youth in crisis.* New York: W. W. Norton and Co., 1968.

Gottman, J. M. (1994). What predicts divorce? Hillsdale, NJ: Lawrence Erlbaum.

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology, 10,* 243–268.

Gottman, J. M., Katz, L. F., & Hooven, C. (1997). *Meta-emotion: How families communicate.* Mahwah, New Jersey: Lawrence Erlbaum Associates Inc.

Hastings, P. D., & Grusec, J. E. (1998). Parenting goals as organizers of responses to parent child disagreement. *Developmental Psychology, 34,* 465–479.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millenium. *Communication Monographs, 76,* 408–420.

Izard, C. E., Huebner, R. R., Risser, D., McGinnes, G. C., & Dougherty, L. M. (1980). The young infant's ability to produce discrete emotion expressions. *Developmental Psychology, 16,* 132–140.

Jaffee, W. B., & D'Zurilla, T. J. (2003). Adolescent problem solving, parent problem solving, and externalizing behavior in adolescents. *Behavior Therapy, 34,* 295-311.

Kelley, H. H., & Thibaut, J. W. (1978).*Interpersonal relations: A theory of interdependence.* New York: John Wiley.

Kim K. J., Conger R. D., Lorenz F. O., Elder G. H. Jr (2001). Parent-adolescent reciprocity in negative affect and its relation to early adult social development. *Developmental Psychology, 37,* 775–790.

Kohlberg, L. 1969. Stage and sequence: The cognitive-developmental approach to socialization. In D. A. Goslin (Ed.), *Handbook of socialization and research* (pp. 347-480). Chicago: Rand McNally.

Kriesberg, L. (2007). *Constructive conflicts: From escalation to resolution* (3rd ed.). New York: Rowman and Littlefield Publishers.

Larsen, R. J. & Diener E. (1987). Affect intensity as an individual difference characteristic: A review. *Journal of Research in Personality, 21,* 1–39.

Laursen, B., Coy, K. C., & Collins, W.A. (1998) Reconsidering changes in parent–child conflict across adolescence: A meta-analysis. *Child Development, 69,* 817–832.

Laursen, B., & Collins, W. A. (2009). Parent–child relationships during adolescence. In R. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology: Vol. 2. Contextual influences on adolescent development* (3rd ed., pp. 3–42). New York: Wiley.

Leung, D. W., & Slep, A. M. S. (2006). Predicting inept discipline: The role of parental depressive symptoms, anger, and attributions. *Journal of Consulting and Clinical Psychology, 74,* 524–534.

Lindahl & Markman (1990). Communication and negative affect regulation in the family. In E. A. Blechman (Ed.), *Emotions and the family* (pp. 99 115). Lawrence Erlbaum.

Lynch, T. R., Robins, C. J., Morse, J. Q., & Krause,E. D. (2001). A mediational model relating affect intensity, emotional inhibition, and psychological distress. *Behavior Therapy, 32,* 519–536.

Maynard, D. W. (1985). How children start arguments. *Language in Society, 14,* 1-29.

Morris A. S., Silk J. S., Steinberg L., Myers S. S., & Robinson L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16*, 361–388.

Patterson, G.R. (1980). Mothers: The unacknowledged victims. *Monograph of the Society for Research in Child Development, 45* (5, whole No. 186).

Patterson, G. R. (1982). *A social learning approach: Vol. 3. Coercive family process*. Eugene, OR: Castalia Publishing.

Patterson, G. R. (1986). Performance models for antisocial boys. *American Psychologist, 41,* 432–444.

Patterson, G. R. (2002). The early development of coercive family process. In J. B. Reid, G. R. Patterson, & J. Snyder (Eds.), *Antisocial behavior in children and adolescents* (pp. 25-44). Washington, DC: American Psychological Association.

Piaget, J. (1965). The moral judgement of the child (M. Gabain, Trans.). New York: Free Press. (Original work published 1932).

Pinquart, M., & Silbereisen, R. K. (2002). Changes in adolescents' and mothers' autonomy and connectedness in conflict discussions: An observation study. *Journal of Adolescence, 25,* 509–522.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers, 36,* 717-731.

Prinz, R. J., Foster, S. L., Kent, R. N., & O'Leary, K. D. (1979). Multivariate assessment of conflict in distressed and nondistressed mother–adolescent dyads. *Journal of Applied Behavior Analysis, 12,* 691–700.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68-78.

Schultz, D., Izard, C. E., Ackerman, B. P., & Youngstrom, E. A. (2001). Emotion knowledge in economically-disadvantaged children: Self-regulatory antecedents and relations to social maladjustment. *Development and Psychopathology, 13,* 53–67.

Smetana, J.G. (2011). Adolescents' social reasoning and relationships with parents: Conflicts and coordinations within and across domains. In E. Amsel & J. Smetana (Eds.), *Adolescent vulnerabilities and opportunities: Constructivist and developmental perspectives.* (pp. 139-158). New York: Cambridge University Press.

Smetana, J. G., Campione-Barr, N., Metzger, A. (2006). Adolescent development in interpersonal and societal contexts. *Annual Review of Psychology, 57,* 255–284.

Steinberg, L. (2001). We know some things: Parent–adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence, 11,* 1−19.

Steinberg, L. & Silk, J. (2002). Parenting adolescents. In: Bornstein, M., editor. *Handbook of parenting: Volume 1. Children and parenting (2nd Ed.).* Mahwah, NJ: Erlbaum; p. 103-133.

Stringaris, A., Zavos, H., Leibenluft, E., Maughan, B., & Eley, T.C. (2012). Adolescent irritability: Phenotypic associations and genetic links with depressed mood. *American Journal of Psychiatry, 169,* 47–54.

Stubbs, J., Crosby, L., Forgatch, M. S., & Capaldi, D. M. (1998) Family and Peer Process Code: A synthesis of three Oregon Social Learning Center Behavior Codes. Eugene, OR: Social Learning Center.

Tackett, J. L., Krueger, R. F., Sawyer, M. G., & Graetz, B. W. (2003). Subfactors of *DSM–IV* conduct disorder: Evidence and connections with syndromes from the Child Behavior Checklist. *Journal of Abnormal Child Psychology, 31,* 647–654.

Tucker, C. J., McHale, S. M., & Crouter, A. C. (2003). Conflict resolution: Links with adolescents' family relationships and individual well-being. *Journal of Family Issues, 24,* 715−736.

Vuchinich, S. (1987). Starting and stopping spontaneous family conflicts. *Journal of Marriage and the Family, 49,* 591–601.

Zeman, J., Cassano, M., Perry-Parrish, C., & Stegall, S. (2006). Emotion regulation in children and adolescents. *Journal of Developmental & Behavioral Pediatrics, 27,* 155−168.

Table 1. Bivariate correlations among the four conflict types, length of conflict, perceptions of the conflict as unresolved, and children's behavior problems.

	Mean	SD	1	2	3	4	5	6	7	8	9
1 *% PSCE conflicts*	.28	.33									
2 *% PSPE conflicts*	.65	.36	-.27**								
3 *% CSPE conflicts*	.18	.34	.02	-.15							
4 *% CSCE conflicts*	.41	.46	.09	.30**	-.75**						
5 Length of conflict	3.34	2.12	.24**	.04	.10	.21*					
6 Parent's perception of conflict as unresolved	2.64	1.00	.12	.11	.09	.05	.38**				
7 Child's perception of conflict as unresolved	2.30	.88	.02	.10	.13	-.07	.23**	.50**			
8 Oppositional defiant behaviors	1.63	.65	.10	.02	.04	.09	.26**	-.01	.11		
9 Conduct disorder behaviors	1.32	.49	.07	-.02	.01	.08	.18*	-.07	.05	.89**	

Note: PSCE = parent started, child ended; PSPE = parent started, parent ended;
CSPE = child started, parent ended; CSCE = child started, child ended. *N* = 138. * *p* < .05, ** *p* <.01.

Table 2: Length of longest conflict predicting outcomes, while controlling for proportions of child-ended conflicts.

	Child Report – Perception of Conflictual Issues as Unresolved			Parent Report – Perception of Conflictual Issues as Unresolved			Oppositional Defiant Behaviors			Conduct Disorder Behaviors		
	β	b	SE	β	b	SE	β	b	SE	β	b	SE
Length of longest conflict	.23***	.10	.04	.36***	.17	.04	.25***	.08	.03	.17*	.04	.02
	$F(3, 129) = 3.12*$			$F(3, 132) = 7.46***$			$F(3, 126) = 3.13*$			$F(3, 125) = 1.36$		

$N = 138$. $* p < .05$, $** p < .01$, $p < .001$.

Table 3: Conflict length as a mediator between proportion of conflicts that were child-ended and perceptions of the "hot" issue as unresolved and with child behavior problems.

	Issue Unresolved – Parent Report			Issue Unresolved – Child Report		
	B		*SE*	*B*		*SE*
CE predicting conflict length	1.80**		0.59	1.74**		0.59
Conflict length predicting outcomes, controlling for CE	0.19***		0.04	0.10**		0.04
CE predicting outcomes, controlling for conflict length	0.08		0.27	-0.46		0.25
	Bootstrap Effect (SE)	95% CI LL	UL	Bootstrap Effect (SE)	95% CI LL	UL
Indirect effect of CE to outcome through conflict length	0.40 (0.14)	**0.12**	**0.68**	0.18 (0.10)	**0.04**	**0.43**
	Child Oppositional Defiant Behaviors			Child Conduct Disorder Behaviors		
	B		*SE*	*B*		*SE*
CE predicting conflict length	1.60**		0.61	1.56*		0.61
Conflict length predicting outcomes, controlling for CE	0.04*		0.02	0.01		0.02
CE predicting outcomes, controlling for conflict length	0.14		0.14	0.09		0.12
	Bootstrap Effect (SE)	95% CI LL	UL	Bootstrap Effect (SE)	95% CI LL	UL
Indirect effect of CE to outcome through conflict length	0.08 (0.04)	**0.02**	**0.19**	0.01 (0.03)	-0.03	0.09

Note: Confidence intervals indicating significant mediation are bolded. CE = proportion of conflicts that were child ended. * $p < .05$, ** $p < .01$, *** $p < .001$.