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A path modeling approach to understanding family conflict: Reciprocal patterns of parent coercion and adolescent avoidance

Darby E. Saxbe, Ph.D, Michelle R. Ramos, Ph.D, Adele C. Timmons, M.A., Aubrey R.
Rodriguez, M.A., and Gayla Margolin, Ph.D

University of Southern California

Abstract

Conflict between parents and adolescents involves reciprocal exchanges in which family members influence and shape each other's behavior. This study uses multilevel path analysis to examine interrelations in observed behavior during 15-minute conflict discussions conducted by 103 family triads, looking specifically at parent coercive and youth avoidant behaviors. We also explore the moderating roles of parents' past aggressive family conflict behavior on parents' responses to youth behavior. Discussions were coded in three-minute segments. Analyses used time-lagged codes so that a family member's behavior in one segment predicted another family member's behavior in the following segment. The fully saturated cross-lagged model tested all possible paths (parents' behavior predicting parents' and youths' subsequent behavior, and vice versa). Parents' coercive behavior was associated with more avoidant youth behavior in the following segment when controlling for youths' prior avoidant behavior. The opposite direction of effects also emerged: mothers became more coercive when youth were more avoidant in a prior segment. Fathers' coercive behavior was not associated with youths' prior behavior and, with both parents in the same model, father and youth behavior were no longer associated; however, fathers' coercive behavior predicted more mother coercive behavior in the following segment. Mothers who had behaved more aggressively during family conflict over two waves of data collection became more coercive when youths were more avoidant, although parents' history of aggressive family conflict behavior did not moderate father-to-youth or youth-to-parent paths.

Keywords

Family conflict; path modeling; adolescent; parent; demand-withdraw

Adolescence is a time of growing individuation, as youth shift social allegiances from the family to the peer group and begin to define their own educational, occupational and personal goals. At the same time, most adolescents remain in the family home, under parents' authority. The push and pull of independence and autonomy may lead to friction, making disagreements with parents a natural and perhaps inevitable feature of adolescence.

Family conflict, particularly between adolescents and their mothers, is normative in this context (Laursen & Collins, 1994).

Family systems researchers, who study families' interdependent patterns of interaction, have sought to understand how families manage this normative process. For example, what specific behaviors act to defuse or to perpetuate conflict? Coercive Family Process theory (Patterson, 1982) helps to explain the development of antisocial behavior in youth through quotidian family interactions, such as parenting practices that permit frequent daily reinforcements of coercive child behavior. For example, escape-conditioning contingencies may occur in which youth use aversive behavior to end intrusions by other family members. In such an interaction, a youth may react to a parent's demand by ignoring or refusing it, which can escalate over time (with reinforcement) into more aggressive youth behavior. According to this framework, family social interactions are structured in terms of "conditional probabilities" (Patterson, 1982), such that each family member's behavior informs the behavior of the other family members in measureable ways.

Such patterns of influence may lend themselves well to time-lagged and to path analysis models that allow for the exploration of reciprocal family behaviors and the testing of temporal causality or even bidirectional influence. Additionally, research on family environments has increasingly focused on short-term, everyday interactions, using assessment of daily or even momentary stressors through experience-sampling and observational designs. Such research helps to illustrate how small-scale "allostatic processes," such as parents' and childrens' management of, and recovery from, conflict, accumulate into larger outcomes with consequences for children (Repetti, Robles, & Reynolds, 2011). For example, a study of kindergarteners interacting with parents in two one-hour sessions used time-hazard analyses to predict latency of children's anger from parental behavior, finding that when parents had more negative and critical responses to their children, children had reduced latency to anger in subsequent exchanges (Snyder, Stoolmiller, Wilson, Yamamoto, 2002). Several recent studies have examined parent-adolescent interactions in "real time" or using time-lagged designs to tease out the sequence and patterning of effects. For example, Morelen & Suveg (2012) found reciprocal patterns of interaction between parents and youth: parents became more supportive in emotion discussions after children showed more adaptive emotion regulation, and children showed more adaptive emotion regulation in response to supportive parenting. There is evidenced that observed behavior, as measured in the lab, can generalize to outside family characteristics. For example, parent-child interactions characterized by greater rigidity were predictive of kindergarteners' subsequent externalizing and internalizing behaviors (Hollenstein, Granic, Stoolmiller, & Snyder, 2004). In another study, improvement in children's externalizing symptoms after an intervention was associated with parent-child behavior (specifically emotional flexibility) exhibited during a laboratory-based discussion (Granic, O'Hara, Pepler, & Lewis, 2007).

While young children may respond with anger or acting out in the face of family conflict, adolescents may be more likely to take on the stereotypical role of sullen teen. As such, the dynamics of families with adolescents may take on demand-withdraw patterns, which have been described in a literature mainly focused on marital relationships (reviewed in Eldridge

& Christensen, 2002). Demand-withdraw dynamics are marked by reciprocal interactions in which one spouse escalates demands in response to the other partner's withdrawal, in turn elicited by the first partner's demands. While parent-child relationships differ from marital relationships in important ways, family conflict involving parents and adolescents may also exhibit these reciprocal or bidirectional patterns (Collins & Laursen, 2004). For example, a study of adolescent-parent dyads found positive associations between parents' and adolescents' demanding and withdrawing behavior during a audiotaped conflict discussion, with parent-demand and adolescent-withdraw behavior appearing most frequently (Caughlin & Ramey, 2005). The current study uses observational coding and explores whether parent coercive behavior predicts subsequent youth avoidant behavior when controlling for prior youth behavior, and vice versa. Avoidant behaviors, as operationalized within our coding scheme, might include ignoring the parent, avoiding eye contact, or mimicking the parents' speech in a mocking way. Importantly, coercive (demanding) parent and avoidant (withdrawing) youth behaviors may not occur solely within the parent-child dyad but may reflect responses to the overall family dynamic during conflict. For example, adolescents may behave avoidantly in response to conflict between parents, a response that appears to happen particularly often in more aggressive families (Garcia O'Hearn, Margolin, & John, 1997). Similarly, parents may react to frustrating child behavior by becoming not just more critical of the child but of their partner as well. Therefore, we test behaviors occurring not only within one parent-child dyad but across both dyads.

Parents' histories of aggressive conflict behavior may also be linked to the ways that families negotiate short-term conflict. In families where conflict becomes out-of-hand and even dangerous, family members may be more reactive to each other and less skilled at preventing escalation. Moreover, individuals might be sensitized to each other's aversive behavior. The current study examines the moderating role of parents' aggressive family conflict behavior over the previous several years, as assessed by the mother, father, and youth and aggregated over two domains (parent-child and marital) and two waves of data collection. Specifically, we explored whether parents' history of aggressive family conflict behavior was associated with increases in their own coercive behavior in the wake of children's aversive behavior, or with increases in children's avoidant behavior in the wake of parent coercive behavior.

Most observational studies of parent-child interaction focus on dyadic, typically mother-child, interactions. However, adolescents in two-parent households interact on a daily basis with both mothers and fathers, and often with both parents together. We report here on triadic (mother-father-youth) family discussions. Our analyses modeled father-child and mother-child influences separately, and then within a fully saturated triadic model that included all paths (mother-child, father-child, and parent-parent). Fathers are typically less directly involved in parenting than mothers in early childhood (McBride & Mills, 1993), and this discrepancy appears to continue into adolescence (Paulson & Sputa, 1996). A literature on "maternal gatekeeping" (Allen & Hawkins, 1999) suggests that some mothers may claim the parenting role within families by adjudicating fathers' contributions; consistent with this, some researchers have found father involvement to be shaped by mothers' attitudes, e.g. approval of, and confidence in, fathers' parenting practices (McBride & Rane, 1998). In other words, fathers may "parent" more through their involvement with mothers than

through direct influence on their children (Belsky, Youngblade, Rovine & Volling, 1991). Therefore, we expect that fathers' conflict behavior may be linked with mothers' but not necessarily directly with youths' behavior.

In keeping with evidence that adolescent-parent interactions may be likely to involve parent-demand, adolescent-withdraw sequences (Caughlin & Ramey, 2005), we focus specifically on critical/coercive parent behavior and on avoidant youth behavior. We take a micro-level approach, focusing on interactions observed during a brief (15-minute) family conflict discussion, and build on the previous literature by using multilevel path modeling with time-lagged variables, allowing us to test temporal causality and to examine bidirectional effects (parent to child; child to parent) within the same model. Path analysis was used because it allows for modeling all variables at all time points, statistically adjusting for levels of both the predictor and outcome at both time points (Buckholder & Harlow, 2003). So, for example, we can test whether mothers' coercive behavior at time t predicts adolescents' avoidant behavior at time $t + 1$, while controlling for adolescents' time t and mothers' $t + 1$ behaviors. In addition, path analysis allowed us to test bidirectional effects (e.g., mother coercive behavior to youth avoidant behavior; youth avoidant behavior to mother coercive behavior) within the same model.

Hypotheses

- 1) We hypothesize that parents and youth will show reciprocal interactions in which parent coercive behavior leads to greater subsequent adolescent avoidant behavior, and adolescent avoidant behavior leads to greater subsequent parental coercive behavior. We will compare the strength of parent-to-youth and youth-to-parent paths, for example whether mother-youth paths might be stronger than father-youth paths due to evidence that mothers are more involved in parenting. We will also test parent-parent paths (mother to father, father to mother).
- 2) We expect parents' histories of behaving aggressively during conflict will be associated with parents' and childrens' patterns of responding to their aversive behaviors, such that parents who have behaved more aggressively in the past will become more coercive when children are avoidant and their children become more avoidant when parents are coercive.

Methods

Participants

One hundred and two family triads consisting of a mother, father, and youth (306 individuals) participated in a laboratory-based family conflict discussion, with all procedures approved by the university's IRB. Families were drawn from a longitudinal study and recruited in two cohorts; the first cohort, 58 families, entered the study when the target child was 9–10 years of age, and participated in the conflict discussion task in their fourth wave of data collection (waves were scheduled 1–3 years apart). The second cohort, 44 families, enrolled when the target child was 12–13 years of age, and participated in the discussion as part of their second wave of data collection. Eligible families had lived together for the past 3 years and could complete measures in English; see Margolin, Vickerman, Oliver, &

Gordis (2010) for further details. The two cohorts did not differ in terms of youth age at the time of participation, gender, ethnicity, or family income, although families in the first cohort reported more past aggressive conflict behavior and fathers in the first cohort to showed more coercive behavior in the discussion. Cohort effects did not moderate any of this paper's results.

Participating youth included 51 girls and 51 boys, average age 15.31 ($SD = 0.77$, range = 13.68–18.58). The sample's ethnic composition reflected the diversity of urban Los Angeles, with 32.4% of the youth identifying as Hispanic/Latino; in addition, 8.8% identified as Asian, 17.6% as African-American, 31.4% as Caucasian-American, and 9.8% as multiracial or 'other.' Of 169 families invited to participate in the current wave, 140 contributed some data. Of these, 126 participated in the family discussion task. Seventeen families participated with only two members (e.g. the youth and one parent), and 7 families either consented to audio only or had videotaping problems that prevented behavioral coding of their discussion. The median combined family income was \$80,000 ($SD = \$66,705$), and 18.6% of families reported an income below \$40,000. Mothers' mean education level was 14.79 years ($SD = 2.72$) and fathers' mean education level was 15.09 years ($SD = 2.41$). Most (88%) of participating families contained two biological parents, but 11 participating families included a stepparent.

Procedures

Families visited the lab for a 3–4 hour visit. After parents gave informed consent and youth gave assent, each family member rated the amount of conflict that each of 33 common family conflict topics generated, with the option to write in additional topics. Three experimenters then conducted separate, simultaneous priming interviews with each of the family members, working from the questionnaires to identify topics of greatest concern and also with conflict across multiple family subsystems—parent-child and parent-parent. The experimenters met briefly to identify the three greatest areas of conflict for each family (with a focus on parenting or family-wide topics rather than marital topics since the child was present). Families were then seated together in a room and given 15 minutes to discuss at least one of the three identified topics, starting with the most contentious. Families were instructed to discuss the topic as they would at home, and to “make sure that each of you gets your point across.”

Behavioral coding—The triadic discussions were coded using the Triadic Global Coding System (Ramos, Rodriguez, & Margolin, 2009). A team of trained undergraduate and graduate student coders naïve to the goal of the study coded each videotaped interaction sample. Coders attended weekly training meetings and coded several pilot discussions. Coders viewed each 15-minute discussion three times, once for each dyad (e.g., mother-father, mother-youth, father-youth) with the dyad order counterbalanced for each coder. Segments were coded in 3-minute intervals; each discussion was coded by two coders and then codes were averaged. Coders rated the intensity/impact of a range of behaviors on a 4-point scale (0 = not at all; 1 = a little; 2 = moderate; and 3 = a lot). We then summed the two dyadic codes for each person to generate a total score of that person's behavior (for example, youths' withdrawn behavior reflected both their withdrawn behavior within the

youth-father and youth-mother dyads, while mothers' critical behavior reflected criticism within the mother-youth and mother-father dyads).

The current study examined mother and father coercive behavior, which was derived by summing four behavioral codes: 1) criticism of an idea or behavior, e.g. a youth's internet use; 2) criticism of a person (direct or implied rejection, antagonism, or resentment that communicates worthlessness of the youth, such as, "That means you're what, a coward?"); 3) lecturing; and 4) laying down the law, in which a parent states a set of demands for future behavior, without inviting discussion but only compliance from the youth ("Don't talk back to me! I'm the parent"). When we summed these four codes, inter-rater reliability reflected by Inter-Class Correlations (ICCs) was .93 for fathers' and .92 for mothers' coercive behavior (fathers' mean = 1.36, $SD = 1.53$, range = 0–10.50; mothers' mean = 1.81, $SD = 1.58$, range = 0–8.40).

We also assessed youth avoidant behavior, comprised of three codes: 1) withdrawal, e.g., the youth attempting to remove him/herself from conversation, such as hiding his/her face in a sweatshirt; 2) nonverbal dismissive gestures, e.g. pointing or scowling at the parent, or mimicking the parent in a mocking way; and 3) disregarding behavior, e.g. ignoring the parent's contribution to the discussion. When we summed the three codes within intervals, the ICC for youth behavior was .89 and the mean was 1.48 ($SD = 1.28$, range 0–4.60). These mean scores for parents and children suggests that at least one type of parent coercive or youth avoidant behavior occurred, with at least some impact or intensity, in most segments of the discussion.

Parents' history of aggressive conflict behavior—Our past parental aggression variable combined spousal aggression ratings (from the Domestic Conflict Index; Margolin, John, & Foo, 1998) and parent-child conflict ratings (from the Conflict Tactics Scale - Parent/Child; Straus, Hamby, & Finkelhor, 1998), over the concurrent wave and the prior wave of the study, reflecting each parents' conflict behavior over the previous several years. For each measure, we focused on a subset of items assessing particularly aversive and/or aggressive behavior that had occurred within the past year, such as shaking or slapping the child, twisting the spouse's arm, and shoving the spouse (see Margolin et al., 2010, for more details). The mother, father, and youth reported on these behaviors at each wave for each domain and for each parent: father-to-mother and mother-to-father spousal aggression and father-to-child and mother-to-child parenting aggression. We dichotomously coded the occurrence of aggression for each domain, such that if any behavior in a domain was endorsed by any reporter, that parent received a '1'; if not, a '0'. Maximizing across reporters helps adjust for under-reporting biases seen in family conflict studies (Margolin et al., 2010). We then summed dichotomous scores from the two waves (prior and concurrent) and domains (marital aggression and parent-child aggression) to create a composite score for each parent. The composite parent aggression variable had a possible (and actual) range of 0 (no aggression by that parent reported by any reporter in any wave) to 4 (aggression reported by at least one family member in both domains and both waves). Mothers' aggression history score averaged 1.41 ($SD = 1.22$) and fathers' averaged 1.08 ($SD = 1.21$).

Missing Data—Demographic and observational data were complete. Four families with missing data on one or more domains of conflict behavior were not included in moderation analyses; these families did not differ from other families in terms of demographics or observed conflict behavior. Missing data were estimated using full information maximum likelihood.

Analysis Plan

Hypotheses were tested using multilevel path analysis in Mplus Version 6 (Muthén & Muthén, 2012). To examine effects across time, we used the lagging approach described by Bolger, Davis, and Rafaeli (2003). For each variable of interest time-lagged scores from the five discussion segments (each score = three minutes of behavior) so that for each person we had scores for time t corresponding to segments 1, 2, 3, 4 of the discussion and then, on the same lines of the dataset, scores for time $t + 1$ corresponding to segments 2, 3, 4, and 5. Then, we used variables at t to predict outcomes at $t + 1$. Because we estimated fully saturated models, model fit was perfect in all analyses. All within-person variables were group-mean centered when testing cross-level interactions, consistent with recommendations for cross-sectional multilevel modeling analyses made by Enders and Tofighi (2007).

Results

In initial analyses, youth age, gender, and ethnicity/race were tested as moderators of each path and no significant effects emerged, so these variables were dropped from final models.

Hypothesis 1

We tested the hypothesis that parent coercive and youth avoidant behavior would be bidirectionally related to each other by first testing separate mother-youth and father-models and then testing a model with both parents included together.

In the first model, we estimated the fully saturated cross-lagged model with mother coercive behavior and youth avoidant behavior. Mother coercive behavior at t was positively associated with youth avoidant behavior at $t + 1$ and youth avoidant behavior at t was positively associated with mother coercive behavior at $t + 1$. Next, we examined the same model with fathers. Father coercive behavior at time t was positively associated with youth avoidant behavior at time $t + 1$, but youth avoidant behavior at time t was not associated with father coercive behavior at time $t + 1$. Both models are shown in Figure 1.

Next, we tested mother and father behavior in the same model, with results shown in Figure 2. The bidirectional effects between mother coercive behavior and youth avoidant behavior held, but father coercive behavior was not associated with youth avoidant behavior. However, a parent-parent effect emerged, such that fathers' coercive behavior at t predicted greater mother coercive behavior at $t + 1$.

Hypothesis 2

We predicted that parents' past aggressive family conflict behavior would be linked with their coercive responses to youth avoidance. We tested this moderator on the slope of youth

avoidance predicting subsequent parent coercive behavior in both parent-child models and in the full model. In the mother-youth model, mothers' past aggressive family conflict behavior moderated the slope of youth avoidance predicting mother coercive behavior, such that mothers who had behaved more aggressively in the recent past became more coercive in response to adolescent avoidance; $b = .18, t = 2.31, p = .02$. In the full model, this effect held for mothers, $b = 0.18, t = 2.34, p = .02$. Fathers' aggressive conflict behavior was not associated with father behavior in the father-youth only model, $b = .07, t = 1.40, p = .16$, or in the full model, and neither father nor mother history of aggressive conflict behavior moderated youths' avoidant responses to parents' coercive behavior ($b = .05, t = 1.18, p = .24$ within the mother-youth model; $b = .07, t = 1.40, p = .16$, within the father-youth model).

Discussion

This study used path modeling to examine families' observed behaviors during a conflict discussion including adolescents and their parents, and found evidence for reciprocal interactions in which adolescents' behavior influenced parents and parents' behavior influenced adolescents. Both mothers and fathers' coercive behavior led to more subsequent avoidant behavior from adolescents. However, only mothers exhibited more coercive behavior subsequent to adolescent avoidant behavior. This is one of the first demonstrations of parent demand following adolescent withdrawal, as contrasted with the more common withdrawal-following-demand sequence.

Within the full model including both parents, bidirectional associations between fathers' and youths' behaviors were not related. These results suggest that mothers and children may become locked in cyclical or reciprocal patterns of interaction, in which increases in one family member's aversive behavior predictably leads to increases in another individual's behavior. Fathers' associations with youth behavior appeared weaker, but fathers did appear to exert parenting influence via their wives, with fathers' negative behaviors predicting escalation of mothers' negative behaviors. This result is consistent with literature suggesting that mothers may have more direct involvement in childrearing and that fathers may exert influence in part through their relationship with wives (Belsky, Youngblade, Rovine & Volling, 1991; McBride & Rane, 1998). Base rate differences may help to explain the lack of a link between father and youth behavior in the full model; mothers' coercive behavior mean was 33% higher than fathers'. To our knowledge, this pattern (of fathers' exerting little direct influence on youth behavior when mothers' influence is included) has not been described before, and illustrates the importance of conducting research with triadic as well as dyadic family configurations.

Mothers' history of aggressive behavior during past family conflict was associated with their patterns of responding to their children's avoidant behavior, such that more aggressive mothers became more coercive when youth were avoidant. These results point to a mechanism by which conflict may escalate in distressed families through parents', specifically mothers', responses to children's negative behavior within short-term interactions. Other studies have shown distressed families' greater continuance of family tension and the difficulties in exiting conflict interactions (Margolin, Christensen, & John, 1996). Interventions targeting parents who behave aggressively might focus on interrupting

these patterns by helping parents learn to dampen these responses to children's aversive behaviors.

These results contribute to the literature both methodologically and theoretically. Methodologically, this is the first study to our knowledge to use a time-lagged path modeling approach to examine short-term sequences of observed interaction during triadic family conflict. Such an approach helps represent patterns of change over time by adjusting for each individual's previous levels of behavior, multiple possible directions of influence, and the nesting of individuals within families. Discussions included both parents and the youth, allowing us to explore father-child and parent-parent interactions, often missing from the parent-child interaction literature. Theoretically, this paper offers proof of concept that short-term (3-minute) sequences of interaction in the context of a brief family conflict are sufficient to detect patterns within families, and additionally that these patterns are reciprocal, with parents influencing adolescents and adolescents influencing parents (particularly mothers).

This paper is limited by its focus on a brief interaction that took place within a laboratory setting. We cannot assert that these results would generalize to spontaneous episodes of family conflict occurring in the home. Also, our separation of the discussion into three-minute segments is somewhat arbitrary, and shorter or longer sequences might have affected the patterns we report here. Coders worked on 3-minute segments because this interval was deemed sufficient to capture the full display of each behavior without requiring coders to track multiple occurrences of each behavior. Future studies might compare these 3-minute global coding intervals to more micro- or macro-level ratings. An additional limitation is that while the discussion was coded dyadically, we summed across dyads to generate total behavior scores for each family member, e.g. youth behavior was summed across the youth-father and youth-mother dyads, and mother behavior was summed across the mother-youth and mother-father dyads. We made this choice in order to simplify statistical models; because aversive behaviors appeared with fairly low frequency in many families; and to reflect our interest in the overall family climate and the triadic nature of the discussion. However, this limits the precision of our results, given that one parent's coercive behavior, for example, might not be directed at the youth but at the other parent. Arguably, this also makes the results more interesting and surprising, given that we found significant paths between parents' and children's behavior even when the behavior was not purely between that parent and that child. Our findings therefore support a spillover model in which aversive interactions between family members might affect not only subsequent interactions within a particular dyad but across the whole family.

In conclusion, these results suggest that families interact in meaningful and measurable ways, with parents', particularly mothers', coercive behavior and adolescents' avoidant behavior escalating through bidirectional, reciprocal patterns of influence. These patterns can be detected within a brief interaction but appear to be linked to important individual differences such as past maternal aggression. Future studies can help continue to map out family interaction patterns, contextualize them within the broader climate of the family, and link them with families' past and future well-being.

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Figure 1.

Fully saturated cross-lagged model with parent critical/coercive behavior at time t predicting youth avoidant behavior at time $t + 1$, as well as youth avoidant behavior at time t predicting critical parent critical/coercive behavior at time $t + 1$. Standardized path coefficients are shown. *Panel A* depicts mother-youth results. R^2 for mother critical/coercive behavior = .55. R^2 for youth avoidant behavior = .57. *Panel B* depicts father-youth. R^2 for father critical/coercive behavior = .60; R^2 for youth avoidant behavior = .60; $*p < .05$. $**p < .01$, $***p < .001$.

Figure 2.

Fully saturated cross-lagged model with mother and father critical/coercive behavior at time t predicting youth avoidant behavior at time $t + 1$, as well as youth avoidant behavior at time t predicting mother and father critical/coercive behavior at time $t + 1$. Standardized path coefficients are shown. *Panel A* depicts mother-youth results. R^2 for mother critical/coercive behavior = .56. R^2 for father critical/coercive behavior = .61; R^2 for youth avoidant behavior = .57; $*p < .05$. $**p < .01$, $***p < .001$.