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Ebb and Flow in Parent-Child Interactions: Shifts from Early through Middle Childhood

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Abstract

Objective—This study documents the strength of relations between key parent and child behaviors as they occur during typical encounters for both mothers and fathers and determines whether there were shifts in the strength of relations between parent and child behaviors during early and middle childhood.

Design—Multivariate multi-level modeling was used to examine associations between three parent behaviors (respect for autonomy, stimulation of development, hostility) and two child behaviors (agency, negativity) as they occurred in typical parent-child activities at four time points from 54 months through 5th grade for 817 families.

Results—For mothers and fathers, respect for autonomy and stimulation were associated with child agency. Paternal hostility was negatively associated with child agency, but for mothers the relation became more positive with age. Parental respect for autonomy and hostility were associated with child negativity for both mothers and fathers; however, for mothers, relations between autonomy support and child negativity became more positive, and relations between hostility and child negativity became less positive.

Conclusions—There are clear shifts in the strength of relations between some parenting behaviors and child behaviors from early to middle childhood, indicative of a changing dialectic as children become more independent and different dialectics for mothers and fathers. Parenting behavior links to child competence and adaptive behavior, and the findings may help resolve some uncertainties about relations between parental behavior and children's developmental trajectories.

INTRODUCTION

Although there is evidence that high quality parent-child interactions facilitate competence, behavioral adjustment, and health in children, there is surprisingly little documentation as

regards how tightly particular parent and child behaviors tend to be linked during real-time encounters, such as play activities or everyday family routines. The lack of attention to the strength of connection between specific parent behaviors and particular child behaviors that occur during everyday activities is surprising in that advancement in most sciences depends on careful documentation of the phenomena considered important to the science: when the phenomena occur, how often, under what circumstances, and the like. For parenting science, that almost certainly would include how often certain key parenting behaviors and certain key child behaviors co-occur. Developmental scientists have long argued that specific functional connections between actions in real-time social encounters help shape broader behavioral tendencies in children (Bornstein, 2015; Davidov & Grusec, 2006; Kochanska, Aksan, Prisco, & Adams, 2008; Wachs & Chan, 1986). The limited attention to documenting the strength of relations between particular parenting behaviors and particular child behaviors as they occur in real-time social encounters is particularly surprising in view of acknowledged limitations of both parent and child reports of parenting behavior (Barber, Xia, Olsen, McNelly, & Bose, 2012; Gonzales, Cauce, & Mason, 1996; Phares, Compas, & Howell, 1989; Taber, 2010; Tein, Roosa, & Michaels, 1994) and not infrequent findings about relations between parent behaviors and child “outcomes” that do not fully conform to expectations (Mattanah, 2001; Suchman, Rounsaville, DeCoste, & Luthar, 2007). Kunz and Grych (2013) have argued that observational methods may allow assessment of more subtle forms of parenting behavior than can be achieved using parent or child reports.

Behavioral scientists assume that if one sees a tight pairing of particular parent behaviors and particular child behaviors in common situations through time, the tight connection is likely to forecast relatively stable psychological tendencies in children (e.g., achievement orientation, aggressiveness, empathy, social competence; Joussemet, Landry, & Koestner, 2008). As an example, Attili, Vermigli, and Roazzi (2010, p. 24) argued “that social competence originates in certain characteristics of the parent-child relationship ” (i.e., when one party in the relationship tends to do X, the other party tends to do Y). Behavioral scientists contend that when patterns of interaction consistently transpire in parent-child encounters, they become converted to broader behavioral tendencies that involve other relationships and other conditions (Bowlby, 1969; Bornstein, 2013). This broad principle accepted, there is also general agreement that the strength of connection between certain caregiver behaviors and certain child behaviors is likely to be stronger during certain developmental periods. For example, mother-child attunement is considered especially powerful during infancy; so there is reason to suspect that maternal behaviors such as watchfulness, displays of affection, and signaling directed at a child would be at least moderately correlated with infant behavior that signals a need for attention and infant behavior that displays agency in satisfying the need. By comparison, as children develop capacities to meet their own needs, their growing feelings of autonomy may allow them more discretion in how they respond to the same parenting behaviors (Collins & Laursen, 2006). As Bornstein (2013) has argued, both the structure and the function of particular behavioral exchanges are likely to evolve over the course of childhood. Moreover, the structure and function of exchanges between caregivers and children is likely to vary depending on the nature of the caregiver-child relationship. Most obviously, they may vary

somewhat for mothers and fathers, given that mothers and fathers tend to play somewhat different caregiving roles vis a vis children (Paquette, 2004).

Newman, Hitchcock, and Newman (2015) advanced the argument that the process of theory development – and the capacity of theory to usefully inform research, policy, and practice – is strongest when scholars use a diverse array of data collection procedures, analytic procedures, and mixed methods for synthesizing research. According to Betz (2005), integrating what is known about functional relations between constructs is easier when one can document how particular constructs are connected in and through time across various contexts. In the service of trying to strengthen the overall nomological network pertaining to parent and child behavior, the purposes of this study were threefold: (1) to document the general strength of associations between 3 parenting behaviors and two child behaviors often examined in social science research at 4 time points during early and middle childhood; (2) to test a series of hypotheses about relations between parent and child behaviors and how the strength of those relations changes from early to middle childhood; and (3) to test the broad hypothesis that relations between parent and child behaviors varies for mothers and fathers.

In this study, we document how strongly three types of parenting behaviors generally regarded as important for children's development (autonomy support, cognitive stimulation, hostility) are associated with two types of child behaviors generally regarded as significant for competence and behavioral adjustment (agency, negativity; Grotevant & Cooper, 1986; Koepke & Denissen, 2012; Ryan & Deci, 2000). The study does not focus on relations between parenting behaviors and particular child “outcomes” (i.e., relatively stable behavioral tendencies) but on relations between particular parenting behaviors and particular child behaviors that research suggests are implicated in an array of child outcomes. If we are able to shed light on how strongly connected these particular behaviors tend to be during commonplace parent-child interactions, how the strength of association between particular parent and child behaviors during ordinary activities shifts over the course of early and middle childhood, and how the strength of relations between particular types of parent and child behaviors varies for mother-child and father-child relationships, it will hopefully be easier for social scientists to formulate more accurate accounts of how parent and child behaviors in everyday situations promote or hinder various aspects of children's development and it may provide insights into how parent and child relationships are re-negotiated as children age. Should clear patterns emerge, they might help guide new research and further development of theories about parenting and child development.

Developmental Issues

There is both theory and research to offer guidance for at least broad hypotheses pertaining to how strongly specific types of parental behavior at a given period in the life course are associated with specific child behaviors at the same period. For example, Self Determination Theory (SDT) postulates that humans have three basic psychological needs: autonomy, competence, and relatedness (Ryan & Deci, 2000). In their discussion of SDT and how it explains key aspects of relationships and changes in individual behavioral tendencies, La Guardia and Patrick (2008) contended that “One of the most important demonstrations for

the theory is to effectively model the dynamics of need fulfillment between partners, both in the moment and as it unfolds across time (p. 203).” During infancy, when children are highly dependent on caregivers to fulfill basic needs for survival, relatedness needs are strongly vested in a core set of caregivers. In effect, there is theoretical support for the idea that there are reasonably robust relations between parenting behaviors, such as supportive presence and respect for autonomy, and offspring behaviors, such as agency early in life, especially as regards mothers (Biringen, 2000; Bowlby, 1969; Joussemet et al., 2008; Kochanska, et al., 2008; Lovas, 2005; Mahler, Pine, & Bergman, 1973). The finding that maternal autonomy support at 54 months had a strong relation to child academic performance in kindergarten and first grade suggests that there might be a reasonably tight connection between maternal autonomy support and child agency in everyday circumstances (Martin, Ryan, & Brooks-Gunn, 2010); but research on the strength of connection between maternal autonomy support and child agency in such encounters is lacking. However, as it is less clear whether a relatively tight yoking of parental respect for autonomy and child agency persists beyond early childhood, albeit there is indirect support that such relations may persist even into late adolescence (Niemic, Lynch, Vansteenkiste, Bernstein, Deci, & Ryan, 2006; Soenens, Vansteenkiste, Lens, Luyckx, Goosens, Beyers, & Ryan, 2007).

In their seminal review, Collins and Russell (1991) made the point the parent-child relationships are constantly being re-organized “prompted by pressures on both parents and children to adapt to pronounced physical, behavioral, and social changes in offspring” (p. 102). Social Relational Theory (SRT), notions about stage-environment fit, and the transactional model of human development speak to the idea that there is an on-going dialectic in parent-child relationships and that the relationship is re-negotiated at various points in the life course (Cabrera, Fitzgerald, Bradley, & Roggman, 2014; Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & MacIver, 1993; Kuczynski & Parkin, 2009; Sameroff, 2009; Steinberg, 2001). These dialectical transactions can lead to dynamic shifts in the behavioral tendencies of both parties. Thus, one is likely to observe gradual shifts and even discontinuities in typical patterns of parent-child interaction in everyday exchanges as children move from infancy through adolescence. More specifically for purposes of this study, one is likely to see shifts in the strength of association between behavioral expressions of agency on the part of children and parental efforts to guide or direct children's behavior. As they gradually become more individuated and assume more control over their own actions, children are more likely to display resistance to control by others (Barrera, Blummer, & Soenksen, 2011; Blos, 1967; Joussemet et al., 2008). By the same token, parents also have autonomy, relatedness, and competence needs; and their ego-involvement in the actions of their offspring might well move them to enacting behavioral control in situations that threaten those needs, such as when a child is non-compliant or does not stay on task (Joussemet et al., 2008). Even though shifts in parent behaviors, such as demandingness or toughness, and child behaviors, such as agency, as children get older seem reasonable and consistent with theory, there is very limited documentation of changes in patterns of particular behaviors as they occur in situations with similar affordances across childhood.

SDT supports the idea that parents' expression of hostility and use of psychological control tend to undermine children's need for relatedness, autonomy, and competence (Grusec &

Davidov, 2010; Ryan & Deci, 2000; Soenens & Vansteenkiste, 2010), with empirical support stronger for certain situations and certain ages than others (Denham & Grout, 1992; Easterbrooks, Bureau, & Lyons-Ruth, 2012). There is general support for the idea that parental hostility would be strongly connected to child negativity early in life; especially in the case of mothers because they typically spend more time directly caring for children (Bornstein, 2015; Bugental & Grusec, 2006; Lorber & Egeland, 2011). However, the impact of negative parental behavior on child behavior and adaptive functioning appears complex. For example, some studies with younger children have shown that a low-to-moderate level of maternal anger (contrasted to an extremely low level) is associated with more positive emotional balance for children during the preschool years (Denham & Grout, 1992). Thus, hostility or negativity as expressed during everyday exchanges may not begin having a strong adverse impact on child autonomy until it reaches a sustained moderate to high level, with lower levels sometimes having a facilitative function in promoting focused action on the part of children. One of the difficulties in interpreting findings from some studies of parental hostility or strictness is that they do not always control for other facets of parental behavior, even though research and theory suggest an intricate interplay (Alsheikh, Parameswaran & Elhoweris, 2010; Gecas & Schwalbe, 1986), one that may be different for mothers and fathers (Barber, Xia, Olsen, McNeely, & Bose, 2012; Mattanah, 2001). Thus, careful documentation of how other aspects of parenting interplay with parental hostility through time for both mothers and fathers would seem useful in clarifying functional relations between parental hostility and child adaptive behavior.

According to Baumrind (1991) children's short-term and long-term responsiveness to parental anger and hostility depends on the parent's overall responsiveness to the child. Baumrind (2013) argued that the joining of parental power assertion (which can sometimes take the form of curt or strict behaviors) with high parental responsiveness can help promote competence and agency in offspring; albeit, findings are mixed (Dallaire, Pineda, Cole, Ciesla, Jacquez, LaGrange, & Bruce, 2006; Radziszewska, Richardson, Dent, & Flay, 1996). In sum, in the context of parental warmth and autonomy support, modest levels of parental toughness or firmness during a normal daily activity may actually increase the likelihood of agentic behavior on the part of a child. Likewise, low-to-moderate levels of hostility on the part of parents may not automatically trigger negative responses from a child, especially as children become more autonomous and are not as dependent on parental emotional support to fulfill their needs for relatedness and competence (La Guardia & Patrick, 2008). Baumrind's contention that the "effect" of parental expression of power (including behaviors that might be construed as being somewhat hostile) on child agency depends on how supportively the parent also behaves during those encounters makes clear the importance of taking account of each when examining relations with child behavior. It is also consistent with Bornstein's (2013) argument that the function of any behavior can vary according to context. As mentioned earlier, Bornstein also makes the point that the function of any particular caregiving behavior can change over time and vary depending on the nature of the caregiver-child relationship. Thus, it is important to examine father-child as well as mother-child interactions both in and through time.

Over the past century a vast amount of evidence has accumulated on relations between exposure to stimulation and the development of competence (Bradley, 2009). A half century

ago Kagan (1964) concluded that the importance of stimulation for competence development was one of the most solidly established findings in the field of psychology. As there is a dynamic interplay between the development of competence and the development of a sense of agency (or self-efficacy), having opportunities to encounter meaningful stimulation toward various contemporaneous and long-term goals would seem necessary to promote agentic behavior (Bandura, 2001). However, as Bandura makes clear in his social cognitive theory, merely encountering lots of stimulation is not sufficient to assure the development of agency or to guarantee one will act in an agentic fashion on a particular occasion. Other conditions must also be met (e.g., positive emotional arousal, useful guidance, meaningful structure, elimination of distractions, instructive motivational persuasion, allowance for self-directed engagement). During infancy, children are highly dependent on others to structure circumstances so they can effectively engage their environments; but as children develop competence, their dependence on others tends to decrease. Thus, the “value” of stimulation provided by others is likely to depend on the other conditions that must be met to foster a sense of agency. When parents and children are engaged in a common activity, sometimes the child will need more direction, guidance, or information to help the child act in an agentic manner. In most ordinary situations where parents and children are engaged in common activity, the requirements for guidance, direction and information tend not to be high; but some information and guidance can often help the child engage the task competently and succeed in accomplishing whatever goal is present. According to Wegner's theory of apparent mental causation (2002), several conditions would need to be met to assure that stimulation from parent during joint action would enable a child to act in an agentic manner. Critically, the stimulation offered by parents would have to be clearly connected to the goals of the activity, and the stimulation would also have to be offered in such a manner that the child would understand how the information was connected to goal attainment. In sum, having meaningful stimulation from parents in an encounter could, under some circumstances, promote agentic behavior in children; but whether children act in an agentic fashion likely depends on many other factors as well. To this point, there has been almost no research on how parent stimulation offered during joint activity connects with agentic behavior or goal attainment.

Parent Gender

In their review of developmental issues connected with parent-child relationships, Collins and Russell (1991) presented evidence that father-child relationships have a different dynamic than is the case with mother-child relationships. Paquette (2004) contended that fathers and children construct a somewhat different kind of relationship than is true of mothers and children. According to his line of argument, fathers are primed to engage their children in playful interactions that improve self-regulatory competence and that empower children to productively engage others in the environment and complete critical daily tasks. Although this line of argument has some empirical support (Grossmann, Grossmann, Fremmer-Bombik, Kindler, Sheuerer-Englisch, & Zimmerman, 2002; Paquette & Dumont, 2013), it does not precisely inform hypotheses pertaining to strength of relations between particular father and child behaviors from early childhood onward. If, as Bornstein (2013) contended, infants are especially primed to attend to behaviors of their primary caregiver (most often mother), associations between paternal behaviors and child behaviors as they

occur in ordinary encounters may be weaker than those observed for mothers. The study by Martin, Ryan, and Brooks-Gunn (2010) cited earlier affords a second finding that is potentially significant in this regard. Specifically, while maternal autonomy support at 54 months was rather strongly connected to early school performance, father autonomy support generally was not. Perhaps, consistent with Paquette (2004), the nature of the father-child relationship is different leading to a less tight connection between paternal autonomy support and child agency early on. Nonetheless, as children get older paternal actions that support autonomy and competence may well increase the likelihood a child will act in an agentic manner (the reverse pathway may be true as well), an association that may strengthen somewhat as father-child interactions include more goal-oriented activities. In effect, the increase could be part of an emerging dialectic that more tightly aligns father and child behavior connected to agency (Kucyzynski et al., 2009). To date, there is limited research on relations between paternal behavior and child agency; but there is indirect support in the form of evidence showing variations in how maternal and paternal behavior early in life connect to child outcomes associated with agency (MacDonald & Parke, 1984; Pancsofar & Vernon-Feagans, 2006; Rowe, Coker, & Pan, 2004; Tamis-LeMonda et al., 2004). Such evidence suggests that parental stimulation on the part of both mothers and fathers might promote child agency. However, studies of parental impacts on children's language generally have targeted a particular form of stimulation that would seem directly connected to the development of language competence; so, it is hard to predict how varied forms of stimulation might support children's agentic behavior as enacted toward a diversity of goals (Pancsofar & Vernon-Feagans, 2006).

As stated earlier, as children grow they become increasingly emotionally and socially independent. Increasing emotional independence means children tend to become less focused on a single source to meet their needs (Byrd-Craven, Auer, Granger, & Massey, 2012). Fathers may increasingly help children to meet a broad spectrum of needs via play, guidance, and provision of opportunities. In their review, Collins and Russell (1991) noted that the asymmetry of interactions between mothers and children versus those between fathers and children changes as children move into middle childhood and adolescence. They also make the point that individuation from mothers may become more conflictual as children approach adolescence. Interesting in this regard is the rather curious set of findings presented by Barber, Stoltz, and Olsen (2005). For adolescents, paternal support for autonomy was relatively more important as regards social initiative, whereas maternal behavioral control was relatively more important as regards antisocial behavior. It suggests that the nature of exchanges between mothers and adolescents versus fathers and adolescents in everyday encounters may be somewhat different.

SRT stipulates that both parents and children are agents in the dyadic relationship, with gradual movement toward equality as children age. Each party interprets the meaning of the other's actions and the affordances of the situation from his or her own perspective and resists threats to their own autonomy (Kucyzynski et al., 2009). Identity control theory suggests that mother's sense of who she is in relation to her children may be more often threatened by her child's efforts to assert authority than is probably the case with fathers (Koepke & Denissen, 2012), especially given that children appear less likely to challenge their fathers (Collins & Russell, 1991). Thus, mothers may be more apt to react negatively to

incidences of non-compliance and more apt to reassert their position as the one in authority in a situation where both parent and child are engaged in an activity. Asserting power during an exchange with an older child does not mean that a mother automatically withdraws support as well. Thus, the effect of maternal assertive behaviors during an encounter with a child will depend on the supportiveness that is also displayed during the encounter (Baumrind, 2013). In effect, the natural tensions that exist in a parent-child relationship can result in counter-intuitive, seemingly contradictory sets of interactions. Indeed, Grusec and Davidov (2010) made the point that what “occurs in one domain of interaction can certainly be affected by processes in another” (p. 704). For this reason, they recommend that studies of relations between any given domain of parental behavior and children's development be done considering co-occurring forms of parent and child behavior. Accordingly, we controlled for all other forms of parent and child behavior when examining relations between each parent and each child form of behavior.

Trying to predict how members of a dyad will behave in a given situation or how tightly the behavior of one will be yoked to the behavior of another can be difficult in that different types of situations or settings have different affordances (Jenkins, 2008). Goals vary from one situation to another and the conditions needed to accomplish the goals also vary. Using conceptual arguments advanced by Grusec and Davidov (2010) pertaining to socialization, ideas on fathering advanced by Paquette (2004) and Lewis and Lamb (2010), ideas about differences in the character of mother-child versus father-child relationships advanced by Collins and Russell (1991), self-determination theory (Joussemet et al., 2008; La Guardia & Patrick, 2008; Soenens & Vansteenkiste, 2010), social relational theory (Kuczynski et al, 2009), social cognitive theory (Bandura, 2001), and the notion of environmental affordances (Jenkins, 2008), we will test the following hypotheses: (1) there is positive relation between parental support for autonomy and child agency, (2) the relation between paternal autonomy support and child agency strengthens during middle childhood, (3) there is a significant but small relation between parental stimulation and child agency, more so when children are younger and in need of assistance, (4) at very low to moderately low levels, there is likely to be little relation between parental expressions of hostility and children's agentic behavior, (5) parental hostility is associated with children's negativity, especially when children are young and in need of relational support, and (6) associations between parent and child behavior vary somewhat for mothers and fathers as a consequence of a somewhat different quality in mother-child versus father-child relationships.

METHOD

Participants

Data came from the NICHD Study of Early Child Care and Youth Development (SECCYD), a prospective longitudinal study of 1,364 children enrolled at birth in 1991 from hospitals near 10 data collection sites in the United States. Recruited families had a healthy newborn and varied by socioeconomic level, sociocultural background, and family composition (NICHD Early Child Care Research Network, 2001).

The sample consisted of 817 families for whom mother-child and father-child observational data were available at 54 months ($M = 54.71$, $SD = 1.00$) and in the spring of school Grades

1, 3, and 5. Data collections for the NICHD SECCYD moved from an age based protocol prior to school entry to a school year based protocol after children entered kindergarten. In the U.S., children are eligible for kindergarten at age 5. Therefore, most children are between 6.5 and 7.5 years old during the spring of Grade 1 (M age = 83.78 months, SD = 3.66). Accordingly, they are between 8.5 and 9.5 years old in the spring of Grade 3 (M = 107.87 months, SD = 3.72) and between 10.5 and 11.5 years old in Grade 5 (M = 131.81 months, SD = 4.01). Data were available for 425 families at all four waves, and 167, 128, and 109 families for any three, two, or one of the waves, respectively. Fifty-one percent of children were male, and 12% ethnic-minority. Compared to the overall NICHD SECCYD sample, the sample used for the current study was more likely to be European American, more highly educated, and have higher incomes. Approximately half of both mothers and fathers in the sample held at least a Bachelor's degree, and 82% of households had an income-to-needs ratio above 2.0.

Procedures

Parent-child interaction—Mothers' and fathers' parenting behaviors (respect for autonomy, stimulation of cognitive development, hostility) and children's behaviors (agency and negativity) were assessed during 15-min videotaped mother-child and father-child observations. At the 54-month home visit, dyadic father-child interactions involved two activities: constructing a stacked series of chutes and ramps together using Marbleworks and playing with a set of jungle animal families and props. The Grade 1 father-child activities included drawing a sailboat together using an Etch-A-Sketch with the father controlling one knob and the child controlling the other, a geometric block activity requiring the child to match block patterns with the father's help as needed, and playing a Slap-Jack card game. At Grade 3, the first activity was a discussion task in which father and child were to discuss their views of different rules chosen randomly regarding what children and parents should do, and the second activity involved sorting and sequencing three sets of cards with each illustrating a story (e.g., a haircut, a birthday party). At Grade 5, the first activity was a discussion task in which father and child discussed issues where parent and child might disagree (e.g., homework, chores, watching TV). The second activity was a building activity (the Tower of Toothpicks). It included Model Magic, 100 toothpicks, 4 tongue depressors, 4 rubber bands, and a ruler. During this task, father and child had 7 min to construct a tower. Similar activities were videotaped with mothers and children at 54 months and in Grades 1, 3, and 5 during laboratory visits. At 54 months, the activities for mothers and children included completing a maze using an Etch-A-Sketch, building a series of identical towers from blocks of varying shapes and sizes, and playing together with six hand puppets. During the Grade 1 assessment, the interaction tasks included working together to draw a picture of a house and a tree using an Etch-A-Sketch (with the mother controlling one knob and the child the other), a patterned block activity that involved using colored blocks of different parquet shapes to fill in geometric frames, and a card game. At Grade 3, mothers and children engaged in the same discussion task used with fathers but with a different set of rules followed by an errand-planning task in which the child determined with mother the best route around a town map to accomplish 11 errands (e.g., return book to library). At Grade 5, mothers and children engaged in the same discussion task used with fathers. The second activity was a problem-solving task that involved construction of a bungee jump for

an egg. It included frame supplied by the data collectors, an egg, panty hose, 40 pennies, a ruler, scissors, paper towels, pages from a newspaper, masking tape, and a plastic storage box.

Observational coding schemes—Coding of all videotapes from the 10 sites occurred at a central location. Parenting behaviors (respect for autonomy, stimulation of cognitive development, hostility) were coded using a 7-point Likert scale (1 = *very low* to 7 = *very high*). At each of the four time points, the same operational definition for each construct was used to guide the coding. All coding was done at a central location, under the supervision of one of the measure's developers. Reliability estimates for parenting behaviors, via calculation of the intra-class correlation (ICC) coefficient, were .79, .74, and .71, for respect for autonomy support, stimulation and hostility respectively. Child behaviors (agency, negativity) were also coded using 7-point scales. The ICC coefficients for child agency and negativity were .82 and .77 respectively.

Time—The coding of time ranged from 0 to 3, where 0 corresponds to age 54 months (the first wave examined in the current study). Times 1, 2, and 3 represent 1st, 3rd, and 5th Grades respectively.

Covariates

Level 1 covariates—At every wave, mothers reported who lived at home, their employment status and family income. Both mothers and fathers reported their relationship satisfaction.

Level 2 covariates—During the 1 month home interview, mothers reported their age, educational attainment, and ethnicity; the ethnicity of their child's father; and their child's ethnicity and gender.

Data Analysis

Multivariate multilevel modeling (Bolger & Shrout, 2007; Kenny, Kashy, & Cook, 2006) was used to investigate the associations between child and parent behaviors over time. We used multivariate multilevel modeling to account for residual dependency, which arises from the nesting structure of the data. More specifically, the data structure for these analyses were nested in two ways: the first nesting structure was due to the fact that we were using child behaviors from repeated observations, and the second nesting structure was due to the fact that child regulatory behaviors were assessed twice at each wave (once in the mother-child observation and another in the father-child observation).

Each model had two levels: level 1 (within families) and level 2 (between families). The level 1 equation modeled child behaviors during mother-child and father-child observations *simultaneously* as a function of time, parenting behaviors, the interaction of parenting behaviors and time, controlling for level 1 covariates. To account for dependency between child behaviors, negativity was also included as a level 1 covariate in each analysis involving child agency as the dependent variable. Likewise, child agency was used as a level 1 covariate in each analysis involving child negativity as the dependent variable. All

parenting and child behavior variables were within-person centered (Raudenbush & Bryk, 2002). The level 2 equation included the level 2 covariates. All analyses were modeled using the MIXED procedure in SAS (v9.2, 2003). We first examined the research questions related to basic relations between each parent and child behaviors using the two-intercept model (see Kenny et al., 2006 for details). Next, we used the interaction model to examine the difference in the effects of parenting behaviors across time between mothers and fathers. The results below are reported in that order.

The exact level 1 equation for two-intercept model was specified as follows:

$$Y_{ijk} = (Mother_{imk}) * (b_{0m} + b_{1m}Time_{ik} + b_{2m}PB_{imk} + b_{4m}PB_{imk} * Time_{ik} + b_{7m}COV_{ik} + e_{imk}) \\ + (Father_{ifk}) * (b_{0f} + b_{1f}Time_{ik} + b_{2f}PB_{ifk} + b_{4f}PB_{ifk} * Time_{ik} + b_{7f}COV_{ik} + e_{ifk})$$

Y_{ijk} is the child behavior for child i for parent j ($j=m$ is mother-child observation; $j=f$ is father-child observation) on wave k , PB_{imk} are the three parenting behaviors of the mother of child i at k^{th} wave, PB_{ifk} are the three parenting behaviors of the father of child i at k^{th} wave, COV are the level 1 covariates, and e_{ijk} are the residual components. For each model of child behavior, the random effects of the three parenting qualities were tested using the nested comparison of likelihood ratio (Singer & Willett, 2003). Degrees of freedom were based on Satterthwaite estimations.

RESULTS

As expected, both mothers and fathers generally showed moderate to high levels of respect for autonomy (M s = 5.0 to 5.5 on the 7-point scale), generally moderate levels of stimulation (M s = 3.9 to 5.0), and very low levels of hostility, with almost all parents rated in the very low to moderately low range (M s = 1.2 to 1.6). The distribution for hostility was highly positively skewed with SD s ranging from 0.6 to 0.9. Child agency tended to be moderate (means ranged from 4.6 to 5.4); and child negativity was low (M s = 1.3 to 1.8). For negativity, few scores of 7 were recorded and the variability was low (SD s = 0.7 to 1.1).

Child Agency

Maternal behavior—Table 1 summarizes results for child agency. Consistent with hypotheses 1 and 3, mothers' respect for autonomy ($b_{2m} = .38$, $t(937) = 8.66$, $p < .01$) and stimulation of cognitive development ($b_{3m} = .11$, $t(937) = 3.33$, $p < .01$) during the observations at 54 months were associated with child agentic behavior during mother-child observations. More specifically, mothers' displaying higher levels of respect for the child's autonomy and stimulation of cognitive development had children who displayed more agency during the dyadic observation tasks. However, contrary to hypothesis 4, maternal hostility was not significantly related to child agency.

Paternal behavior—Fathers' respect for autonomy ($b_{2f} = .24$, $t(937) = 5.06$, $p < .01$), stimulation ($b_{3f} = .17$, $t(937) = 4.90$, $p < .01$), and hostility ($b_{4f} = -.19$, $t(937) = -2.57$, $p = .01$) at 54 months were associated with child agentic behavior during father-child observations. Fathers who displayed more respect for autonomy and stimulation of cognitive

development had children rated higher in agentic behavior, whereas fathers with higher observed levels of hostility had children with lower scores on agency at 54 months. These findings pertaining to fathers are consistent with hypotheses 1, 3, and 4.

Interactions—Interactions of parenting behavior and time represent the degree to which relations between parenting behavior and child agency changed across time (see Figures 1, 2 & 3). Consistent with hypothesis 3, the interaction of mothers' hostility and time ($b_{7m} = .10$, $t(937) = 2.59$, $p = .01$) was significantly related to children's agency, indicating that the effect of mothers' hostility on agency increased by 0.10 unit each wave (see hypothesis 4). The interaction of fathers' stimulation and time ($b_{6f} = -.04$, $t(937) = -1.86$, $p = .06$) was marginally significant and negatively related to children's agency during father-child observations; the strength of relation between fathers' stimulation and children's agency decreased by 0.04 unit each wave. With respect to hypothesis 6, the difference between the strength of relations between the three parenting behaviors and child agency across time for mothers and fathers were examined as 3-way interactions, which were not significant. Last, the random effect of respect for autonomy was significant (random effect = 0.02, $\chi^2(1) = 4.6$, $p = .03$), suggesting that the association between parents' respect for autonomy and child agency differs across families.

Child Negativity

Maternal behavior—Table 2 summarizes results for child negativity (see also Figures 4, 5, & 6). Consistent with hypotheses 5 and 6, mothers' respect for autonomy ($b_{2m} = -.14$, $t(937) = -3.54$, $p < .01$) and hostility ($b_{4m} = .48$, $t(937) = 7.36$, $p < .01$) were associated with child negative behavior during mother-child observations at 54 months. Mothers' with greater respect for autonomy had children who displayed less negativity during mother-child observations; however, mothers' with greater hostility had children who displayed more negativity during mother-child observations.

Paternal behavior—Fathers' respect for autonomy ($b_{2f} = -.11$, $t(937) = -3.38$, $p < .01$) and hostility ($b_{4f} = .41$, $t(937) = 6.80$, $p < .01$) were related to child negative behavior during father-child observations at 54 months. Like the results pertaining to mothers, fathers who displayed more respect for child autonomy had children who displayed lower negativity, and fathers' who displayed more hostility had children who displayed higher negativity during father-child observations (see hypotheses 5 and 6).

Interactions—Interactions of mothers' respect for autonomy and time ($b_{5m} = .10$, $t(937) = 4.64$, $p < .01$), and hostility and time ($b_{7m} = -.09$, $t(937) = -2.50$, $p = .01$) were significantly related to child negativity. The association between mothers' respect for autonomy and negativity increased by 0.10 units each wave, and the association between mothers' hostility and child negativity decreased by 0.09 units each wave. Interactions of fathers' parenting behaviors and time were not significantly associated with child negativity. As stated in hypothesis 7, the difference between the interaction effects of respect for autonomy and time for mothers and fathers were statistically significant, which is captured as a 3-way interaction of parenting behavior, time, and parent (3-way interaction = -0.08 , $t(3896) = -2.25$, $p = .02$) as well as the difference between the interaction effects of hostility, time,

and parent (3-way interaction = 0.11, $t(3893) = 2.41$, $p = .02$). Figures 4 and 6, respectively, visually represent these interaction effects. In addition, the random effect of hostility was significant (random effect = .27, $\chi^2(1) = 182.9$, $p < .01$), suggesting that the relation between parent hostility and child negativity differs across families.

DISCUSSION

The power of parents to promote well-being for their children rests in having sufficient resources and in engaging in patterns of interaction that move children toward competent and caring adulthood. In this study, we observed 3 types of parenting behaviors (autonomy support, stimulation, hostility) and 2 types of child behaviors (agency, negativity) that have often been used in studies of parent-child relationships. The focus on parental autonomy support and child agentic behavior seemed particularly useful in light of propositions set forth in Self Determination Theory (Ryan & Deci, 2000) and Social Cognitive Theory (Bandura, 2001). We documented the strength of association between each type of parenting behavior and each type of child behavior for both mother-child and father-child interactions at 54 months, 1st grade, 3rd grade, and 5th grade based on arguments that relationships between mothers and children and between fathers and children may be distinctive in some respects (Pacquette, 2004) and that there is an ongoing dialectic in parent-child relationships that may result on shifts in functional relations between particular types of parent and child behaviors (Bornstein, 2013; Kuczynski et al., 2009). This is one of very few studies in which the same behaviors have been followed over such an extended period for both mothers and fathers with so many controls, thus allowing the documentation of shifts in mother-child and father-child interaction as children become more autonomous. We found considerable variation in strength of association between the 3 parent and 2 child behaviors. Consistent with hypothesis 6, we also found shifts in the level of association between some parent and child behaviors over time, and some variation in the patterns observed for fathers and the children versus mothers and the children. Many of the observed developmental shifts in strength of association between particular parent and child behaviors were expected (Eccles et al, 1993; Jacob & Johnson, 1997; Koepke & Denissen, 2012; Lewis & Lamb, 2010; Lovas, 2008; Sakadi, Kristiannsson, Oberklaid, & Bremberg, 2008) – but not all, as will be discussed later in this section. Overall, the primary contribution of this study lies in its documentation of normative patterns of association between key parent and child behaviors as they occur as part of parent and child involvement in common situations, as these patterns have implications for the accuracy of theories pertaining to parenting and to policies and programs aimed at improving parental behavior. As Newman, Hitchcock, and Newman (2015) argued, documentation of this sort offers a useful complement to findings from studies that use parent and child reports and that examine relations between parenting practices and child characteristics, as they are all part of a broader nomological network connecting theory to research, policy and practice.

In Western societies (and increasingly elsewhere) there is considerable value accorded to individual autonomy and self-directedness. Research has generally shown that when parents and other social partners evidence respect for a child's autonomy, it leads to greater self-regulation and a stronger sense of agency in social interactions (Zimmer-Gembeck & Collins, 2003). However, many of the studies have relied on reports of parental behavior and

reports of child behavior, leaving some scholars to worry that “sole reliance on self-report instruments....may have led to an overestimation of some of the relations (Soenens et al., 2007, p. 644).” Our findings pertaining to connections between observed parent and child behavior would seem to offer some relief from this worry. Specifically, in keeping with hypothesis 1 and consistent with SDT, we found that respect for autonomy on the part of mothers and fathers was strongly associated with child agentic behavior during the observed episodes from age 54 months to 5th grade, with mothers’ respect for autonomy showing a slightly stronger relation early on. We also found support for hypothesis 2 (i.e., that the relation between paternal autonomy support and child agency would increase over time). To some degree the strengthening association between paternal autonomy support and child agency observed in this study may help to explain the observed relation between paternal autonomy support and increasing self-reliance in boys from Grade 1 to Grade 3 observed by the NICHD Study of Early Child Care Research Network (2008). However, the analyses we performed do not make clear direction of causality. It could be that fathers offer more autonomy support to children as children demonstrate greater self-control and self-direction.

As well, we found some support for the hypothesis 6: notably that there would be differences in the relation between parental autonomy support and child agency for mothers and fathers. This hypothesized differential, favoring mothers early on, is consistent with the idea that mothers tend to be somewhat more attuned to children's idiosyncratic proclivities in early childhood than is the case for fathers (Bornstein, 2013). Fathers, by contrast, tend to be a bit more challenging during interactions with their young children (Paquette, 2004). Finding a differential between maternal and paternal autonomy support with respect to child agentic behavior at 54 months in the kind of exchanges observed in this study could explain the observed difference (favoring mothers) in relations between maternal and paternal supportiveness at 54 months and child academic competence in first grade by Martin, Ryan, and Brooks-Gunn (2010). Davidson and Snow (1996) also found evidence of this differential in their observational study of 5-year-olds’ interactions with fathers and mothers, an age very similar to our first observational period. In effect, the lower correlation between paternal autonomy support and child agency at 54 months may represent a dyad not yet fully in sync as regards the development of agency, a circumstance that seems to largely correct itself with time. Important in this regard is the argument that parents and children are both agents in a relationship that is constantly developing.

As parents appraise the actions of their offspring with respect to particular circumstances, they tend to respond in accordance with their judgment about the effectiveness and appropriateness of the child's actions (Kuczynski & Parkin, 2009). Thus, when children act in a more agentic fashion, it likely increases the probability parents will react to support their autonomy as that would help fulfill the parents’ own needs for relatedness and competence (La Guardia & Patrick, 2008). In our study, we did not test for bi-directionality per se; but the findings are consistent with such a relation.

Cognitive stimulation on the part of parents was positively associated with children's agentic behaviors (hypothesis 3), with fathers’ efforts to stimulate slowly diminishing in their relation to child manifest agency in ordinary activities over time. This latter finding offers some additional support for hypothesis 6. The modest association between parental efforts to

stimulate children during the observed encounters and agentic behavior on the part of children during those encounters was not surprising. According to Social Cognitive Theory, agentic behavior in a given situation reflects all of the affordances present as well as the actor's personal dispositions regarding goal accomplishment. Given that we controlled for parental autonomy support, the small residual relation between parental stimulation and child agency seems reasonable, particularly because the tasks presented to the dyad were structured to be age appropriate for the child, thus not requiring a high level of direct parental assistance. In effect, some of the stimulation offered by parents may not have met conditions that prompt agentic behavior; that is, the information offered may not have been clearly and consistently connected to accomplishing task goals (Wegner, 2002). Had the tasks observed been more challenging, carefully directed stimulation by parents may have been more strongly associated with children's agentic behavior (perhaps proactively, perhaps reactively). The reason for the small diminishment in strength of relation between child agency and paternal stimulation from early to middle childhood is unclear, as there was not much change in mean level of observed paternal stimulation or child agentic behavior over time. In contrast to the mother-relationship, the dialectics of the father-child relationship from early to middle childhood seem to move from one where stimulation is modestly associated with child agency to one where other behaviors (e.g., more direct support of autonomy) are more prominent (it is useful to recall that the children were about 11 years old in the spring of Grade 5). As Figures 1 and 2 show, the trends for autonomy support and stimulation on the part of fathers move in the opposite directions as regards child agency.

Parental hostility showed a complex pattern of association with observed child agency, a pattern not fully consistent with hypothesis 4. To interpret the findings requires consideration of the fact that parents rarely manifested a high level of hostility toward their children. Specifically, on a 7-point scale the mean level of hostility ranged from 1.2 to 1.6, with 1 = *very low*, 2 = *low*, 3 = *moderately low*; and very few parents scored out of 1-3 range. From the perspective of SDT, efforts to exert hostile control over a child's behavior should work against the child's development of autonomy (Joussemet et al., 2008). Finding that fathers' hostility was negatively associated with child agency at age 54 months corresponds to this idea. By contrast, there was no main effect for maternal hostility at age 54 months, a finding consistent with hypothesis 4. Rather, there was an interaction of hostility and time, with maternal hostility showing an increasingly positive association to child agency from preschool to 5th grade. In some respects, the findings for mothers would seem to comport with Baumrind's (2013) contention about parental power assertion; that is, low levels of power assertion (toughness, demandingness) may facilitate goal-directed behavior in children so long as it is accompanied by supportiveness. In our analysis we controlled for parental autonomy support, which was generally manifest at much higher levels than the levels of hostility observed. Similarly, in SDT a critical distinction is made between psychological control (generally considered inimical to children's development) and behavioral control (which can sometimes have a positive effect). Having a mother who expressed a low level of hostility (as contrasted with none) may not undermine an older child's personal needs for relatedness or autonomy given that older children have typically developed a reasonable level of personal autonomy and get more of their needs met from others as well. It would seem particularly unlikely if the mother continued to display

generally positive support for the older child's autonomy (as was the case in most of the parent-child interactions observed during this study). In the context of general autonomy support, a modest level of expressed displeasure at inappropriate behavior may benefit children's agency during a particular encounter or activity (i.e., keep them on track). If so, our findings may explain why maternal behavioral control might be instrumental in reducing antisocial behavior (Stolz et al., 2005). Grusec and Davidov (2010) made essentially the same point in their review of socialization research.

In their review, Zimmer-Gembeck and Collins (2003) pointed to the curvilinear relation between parental behavioral control and children's adjustment often observed in studies of parenting. Given that mothers' respect for autonomy showed a strong relation with child agency, the increasingly positive relation between maternal hostility (generally low level) and child agency may represent ways mothers were attempting to exert some behavioral control over their children during the interactions (in the spring of Grade 5 children were about 11 years old and, thus, were likely to act in a more assertive, independent manner). As Grolnick and colleagues (2007) showed, when mothers are in situations that involve evaluations of their performance, they are likely to exert more behavioral control; but that does not keep them from continuing to show supportive behavior nor does it reduce goal-connected behavior in their children. Considered from the parental side of the parent-child dyad, if a child (feeling independent and agentic) were to act on his or her own proclivities to deal with what a situation presents by way of opportunities and demands without deferring to the leadership of mother, it might provoke at least mild hostility on the part of the mother. Indeed, identity control theory suggests that a mother's identification with the role of "person in command" in the parent-child relationship could lead to her negative reactions when the child asserts a high level of autonomy, even when the actions of the child are not detrimental to the goal at hand per se (Koepke & Denissen, 2012; Steinberg, 2001). According to SRT, components within a relationship system often operate in contradictory fashion, "opposing each other while remaining mutually necessary parts of the system" (Valsiner, 1989, p. 67). In that regard, findings from a recent study on maternal sensitivity are interesting. Specifically, Wang and colleagues (2013) found a small overall decline in maternal sensitivity from early childhood to early adolescence, a pattern that was largely child driven. In our study, there was a rather strong negative association between maternal autonomy support and maternal hostility ($r \sim .6$) during early childhood, but the association was weaker in middle childhood ($r \sim .5$), suggesting some degree of uncoupling of the two behaviors over time. In some respects our finding that the relation between maternal hostility and child agency became more positive with time is not altogether new; that is, Collins and Russell (1991) noted that mothers and adolescent offspring are more often observed in contentious exchanges than is the case for fathers and adolescents. This developmental shift is worthy of more research.

Negativity on the part of children typically does not bode well for children's long-term success and adjustment (Dishion & Patterson, 2006). Consistent with hypothesis 5 and the coercion model, child negativity was positively associated with parental hostility and negatively associated with parental expressions of respect for autonomy. However, for mothers the association between parental hostility and child negativity grew weaker over

time, albeit the association remained positive (about .25). By contrast, there was no shift in patterns for fathers and children – but the association between parental hostility and child negativity was not as strong at 54 months for fathers as it was for mothers. These differences would seem to support hypothesis 6. Specifically, relations between parent and child behavior may be different as regards mothers and fathers due to distinctions in the more general ways they engage offspring (Collins & Russell, 1991; Paquette, 2004).

We offered no hypothesis regarding associations between parental respect for autonomy and child negativity. For both mothers and fathers the relation was slightly negative when children were 54 months old; but there was a slight upward trend over time. As Figure 4 shows, the trend was a little more pronounced for mothers in that relations shifted from slightly negative at age 54 months to slightly positive by Grade 5. Consistent with ideas pertaining to individuation and propositions from Social Relational Theory (SRT), children may become increasingly comfortable in expressing some form of disagreement or negativity during exchanges with a generally supportive partner (Keopke & Denissen, 2012; Kucsyński & Parkin, 2009; Steinberg, 2001). In effect, parental support for autonomy may “allow” some oppositional behavior to occur; and greater independence may promote such behavior. In a study of students in Grades 3 to 6, Grolnick, Ryan, and Deci (1991) found that, when children perceived higher levels of autonomy support from their parents, they also felt that they had greater relative autonomy themselves. That said, as stated above, the findings could also reflect changes in how mothers respond to child negativity. SRT stipulates that both parties in a relationship may alter how they respond to the behavior of the other. As children age, mothers may not find it worthwhile to react to small manifestations of negativity on the part of their children as this may not seriously undermine the mother's own needs for relatedness or autonomy. Those who study the dynamics of interpersonal relationships make note of the fact that feelings of closeness in relationships do not stand in opposition to accepting the separateness of the other in a dyad (Ben-Ari, 2011). These possibilities accepted, two things are important to bear in mind with respect to the findings. First, children expressed very little negative behavior during the interactions (toward mothers the mean scores ranged from 1.8 on a 7-point scale at 54 months to 1.7 at Grade 5). Second, a small positive association *remained* at Grade 5; it was just smaller than the association observed at 54 months. Our findings do not show a concomitant diminution in relations between father and child behaviors over this same period, perhaps attesting to a somewhat different character of father-child relationships (Kuczynski & Parkin, 2009; Paquette, 2004).

Transactional models of family processes stipulate that parents and children are engaged in an ongoing dialectic in which the behavior of each influences the behavior of the other, a dialectic which increasingly reflects bi-directional influences as children become more competent and autonomous from infancy onward (Joussemet et al., 2008; Kuczynski & Parkin, 2009; Sameroff, 2009). Research suggests an evolving dialectic that may be different for mother-child and father-child relationships (Barco, 2012; Bogels & Perotti, 2011; Paquette, 2004). Generally speaking, the findings from this study lend support to all of these propositions. Furthermore, because of the wide diversity of contextual covariates used and because in looking at relations between each specific parent and child behavior we

controlled for the other behaviors observed during the same encounters, the findings offer important new information on the development of parent-child relationships during early and middle childhood.

Parental behavior is instrumental in determining children's competence and adjustment, but relations are complex. They vary with cultural, socioeconomic, family, and parental factors; and they reflect reciprocal processes between parent and child (Sameroff, 2009). It was not the purpose of this study to examine reciprocal processes as they evolve over time between parents and children as Dishion and Patterson (1999) did in trying to understand coercive processes that result in antisocial behavior. Rather, our study aimed at revealing some of the complexity in normative patterns of association between several parent and child behaviors as they occur in ordinary situations for both mothers and fathers at different points in early and middle childhood. In reviewing the findings, it is important to bear in mind that “in the moment” transactions do not directly translate into children's broader behavior patterns. How negative or agentic a child behaves depends on the affordances of particular situations and others who are in the setting – the same is true for parents' behavior. That granted, most theories of environment-development relations stipulate that the interplay between parent and child (or other actors) in everyday encounters gradually shapes the course of development. The stronger the association between particular parent and child behaviors as they occur “in time”, the greater the likely impact on development (Lerner, Rothbaum, Boulos, & Catellino, 2002).

What is important to recall is that the associations we reported about each parental behavior and each child behavior were highly conditioned. They occurred in the context of brief observations, with controls on family circumstances and all the other forms of parent and child behavior coded, as recommended by Grusec and Davidov (2010). Had different controls been used, somewhat different findings may have emerged. Although these highly specific relations are critical to understand from a scientific and practical point of view, real-world action patterns for any given child reflect a diverse array of “in the moment” and historic factors (Peck, 2007). In that regard, the findings pertaining to parental stimulation appear interesting. We found, as hypothesized, a small (but consistent) relation between parental stimulation and child agentic behavior, even with parental autonomy support controlled. Thus, in activities such as those observed (none was highly demanding), it is possible that some guidance and information on the part of the parent may have enabled the child to act with more agency.

Despite the fact that the sample used in the NICHD Study of Early Child Care and Youth Development is larger and more diverse than samples used in most studies of parent-child interaction (particularly the number of fathers involved), and despite the fact that care was taken to use measures of parent-child interaction that allowed for examining similar parent and child behaviors over the long extent of time covered (54 months to 5th grade), the study has limitations. First, the sample does not fully represent all subgroups in the population. The families studied were somewhat more affluent, better educated, and more stable than the population at large, and there were few members of some ethnic groups. Second, participating men were mostly biological fathers still living with their children. Thus, the findings may not represent non-residential or step fathers. Third, although the findings

suggest the possibility of causal influence (from both parent to child and/or child to parent), the study is not designed so that findings permit strong attributions pertaining to causality. Fourth, observations were made in a standard observational paradigm (NICHD Early Child Care Research Network, 2004) rather than in a diversity of natural situations; thus, the behaviors may not fully represent all typical patterns of interaction between parents and children. Fifth, we only examined 3 types of parenting and 2 types of child behaviors. The NICHD Study of Early Child Care and Youth Development data set contains additional parent and child behaviors, but most were not available at all 4 data points and some were highly correlated with those included here. For the future, a better understanding of how parental behavior is implicated in children's development and how parent-child relationships evolve will derive from studies of normative linkages in additional types of behavior for diverse groups and at multiple ages.

IMPLICATIONS FOR PRACTICE, APPLICATION, AND POLICY

Findings from this study suggest ways that parents can support children's movement toward competence and healthy adjustment. The findings would also appear to offer information that could be useful in fostering and maintaining positive parent-child relationships. When the Maternal Infant and Early Childhood Home Visitation Program was authorized by Congress in 2010, it provided further testimony as to the importance citizens of the United States attach to high quality parenting (other nations have invested in similar efforts). As part of the legislation, there are funds to support research aimed at better understanding what constitutes "good parenting". But the interest in supporting good parenting does not end in early childhood. For example, the Office of Juvenile Justice and Delinquency Prevention funds programs designed to reduce parenting practices that increase risk for youth and adolescents (e.g., notably the emphasis on reducing hostility and violence that is part of the Safe Start program) (Office of Juvenile Justice and Delinquency Prevention, 2000). Critical to the success of such efforts is having a knowledge base that precisely informs how parenting practices are implicated in the development of children, and that starts with information about how parent behavior with offspring in ordinary encounters connects with the behavior of the children themselves. Theoretically, the pattern of proximal connections observed between parent and child behavior during everyday encounters should show predictable relations with more distal relations observed between patterns of parenting and child characteristics over time. If they do not, it calls theories into question and makes applications to practice more uncertain. Findings from this study would seem a step in this direction. Specifically, the findings demonstrate that some types of parenting behavior (notably, autonomy support) seem to be fairly consistently connected to a type of child behavior (i.e., agency) that typically bodes well for developing competence and avoiding trouble; and they corroborate findings from studies showing connections between child perceptions of parental behavior and children's own developmental trajectories.

Study findings would also seem to have implications for parent education programs in that that they indicate that presumably productive pattern of connections between parent and child behavior can be a bit different for mothers and fathers. Thus, approaches based on research with mothers may not be well suited to improving parenting practices for fathers. In general, the findings suggest that there is perhaps more nuance in the functional relations

between other behaviors (e.g., parental expressions of hostility) than some would think. Such complex findings suggest that revisions may be needed in theories that are not inclusive in their consideration of the multiple aspects of parenting behavior. The difference observed in mother-child versus father-child interactions offers suggestions for constructing parenting programs that might involve some differences in approach to fathers and mothers; and the findings overall suggest the value of attending more holistically to the multiple aspects of parenting behavior as the impact of one type of behavior appears to often be conditioned by the presence of other types of behavior. The failure to observe strong impacts of some parenting programs may devolve from not having this more holistic focus. Thus, there is need for more studies of connections between multiple forms of parenting behavior and multiple forms of child behavior as they occur in the diverse situations that parents and children find themselves.

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Figure 1.
Parent Respect for Autonomy and Child Agency

Figure 2.
Parent Stimulation and Child Agency

Figure 3.
Parent Hostility and Child Agency

Figure 4.
Parent Respect for Autonomy and Child Negativity

Figure 5.
Parent Stimulation and Child Negativity

Figure 6.
Parent Hostility and Child Negativity

TABLE 1**Multivariate Multilevel Analysis Results for Child Agency**

	Mother		Father		Difference	
	<i>γ</i>	<i>se</i>	<i>γ</i>	<i>se</i>	<i>T</i>	<i>se</i>
Fixed Effects						
Intercept	2.98 ***	0.36	3.45 ***	0.36	0.47 ***	0.04
Time	0.30 ***	0.02	0.09 ***	0.02	-0.21 ***	0.03
Respect for Autonomy	0.38 ***	0.04	0.24 ***	0.05	-0.14 *	0.06
Stimulation	0.11 ***	0.03	0.17 ***	0.03	0.06	0.05
Hostility	0.03	0.06	-0.19 *	0.07	-0.22 *	0.10
Time*Respect for Autonomy	0.00	0.02	0.04	0.03	0.04	0.04
Time*Stimulation	-0.01	0.02	-0.04+	0.02	-0.03	0.03
Time*Hostility	0.10 *	0.04	0.08	0.05	-0.02	0.06

Note: The difference values were computed via an intercept multivariate multilevel model and reflect whether the difference between the effects for mothers and fathers was statistically significant. .

*** $p < .01$.

* $p < .05$.

*** $p < .001$.

TABLE 2**Multivariate Multilevel Analysis Results for Child Negativity**

	Mother		Father		Difference	
	<i>γ</i>	<i>se</i>	<i>γ</i>	<i>se</i>	<i>Γ</i>	<i>se</i>
Fixed Effects						
Intercept	1.67***	0.28	1.28***	0.28	-0.39***	0.04
Time	-0.15***	0.02	-0.05***	0.01	0.10***	0.02
Respect for Autonomy	-0.14***	0.04	-0.11***	0.03	0.03	0.05
Stimulation	-0.01	0.03	-0.02	0.02	0.01	0.04
Hostility	0.48***	0.06	0.41***	0.06	-0.07	0.07
Time*Respect for Autonomy	0.10***	0.02	0.02	0.02	-0.08*	0.03
Time*Stimulation	0.00	0.02	0.01	0.01	0.01	0.02
Time*Hostility	-0.09*	0.04	0.02	0.04	0.11*	0.05

Note. The difference values were computed via an intercept multivariate multilevel model and reflect whether the difference between the effects for mothers and fathers was statistically significant.

** $p < .01$.

* $p < .05$.

*** $p < .001$.