

Relationship Tension and Contextual Stress as Factors Promoting Discontinuity in
Parenting Quality Across Time

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Dedication

“Everything is both simpler than we can imagine, and more complicated than we can conceive.”

-Goethe

Abstract

The study of dynamic predictors of discontinuity in parenting quality over time has been largely absent from the literature on the etiology of parenting. Yet ecological and family systems theories predict that parenting should be impacted by changes in the familial and extra-familial context in which the parent-child relationship develops. The present study examined the effects of change in life stress and change in romantic relationship quality, and the interaction between the two, on change in observed parenting quality over time. Participants ($N = 168$), drawn from a 34-year longitudinal study of risk and adaptation, were observed in mother-child interactions when the children were 24 months, 42 months, and 13 years old. Parents also reported their experiences of life stress and romantic relationship tension across this time period. Path models were used to examine change in observed parenting quality over time as a result of changes in romantic relationship quality, changes in extra-familial life stress, and the interaction between the two. While results were generally not consistent with hypotheses, significant interactions between relationship quality and life stress, and significant gender differences, emerged consistently across models. This highlights the need for future studies to examine the effects of multiple contextual variables on discontinuity in parenting, and the ways in which these contextual factors interact to predict change in parenting. It also emphasizes the importance of studying the etiology of both father-child and mother-child relationships and the mechanisms underlying change in opposite-sex and same-sex parent-child relationships. Finally, results illustrate the methodological and theoretical complexity of studying the dynamic nature of parent-child relationships and the ways in which they change over time.

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Relationship Tension and Contextual Stress as Factors Promoting Discontinuity in Parenting Quality Across Time

The parent-child relationship has long been acknowledged as an extremely important influence on child development and as such has consistently been a topic of interest in the field of developmental psychology (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). However, most of the research exploring the parent-child relationship has been directed at understanding how parents and parenting behaviors shape the development of their children; much less research exists on the determinants of parenting behaviors themselves. Despite the relative lack of attention to the predictors of parenting, a literature on the etiology of parenting has been emerging over the last 20 years (Belsky & Jaffee, 2006; Belsky, 1984).

Theoretical emphasis on the contextual embeddedness of child development (e.g. Bronfenbrenner, 1979; 1986), the development of the relationship perspective (Reis, Collins, & Berscheid, 2000), and family systems theory (Cox & Paley 1997) all served to highlight the importance of understanding the parent-child relationship as an immediate context of child development. These perspectives also emphasized the importance of the larger familial and extra-familial contexts in which children and parents spend much of their time (Belsky & Jaffee, 2006). Together, these views led to research on the ways in which familial relationships and extra-familial contextual factors impact the development of the parent-child relationship. Other related veins of research on the etiology of parenting examined the intergenerational transmission of child abuse, focusing on both the developmental history and current circumstances that promote abusive behaviors on the part of parents (see Belsky & Jaffee, 2006 for a

review). Similarly, research exploring the intergenerational continuity of positive parenting behaviors highlighted the importance of a developmental approach to understanding the etiology of multiple elements of parenting behaviors (e.g. Lieberman, Padrón, Van Horn, & Harris, 2005; Kovan, Chung, & Sroufe, 2009).

While substantial gains have been made in identifying and understanding predictors of parenting quality, the vast majority of research on the etiology of parenting implicitly conceptualizes parenting as a static construct rather than a dynamic, developmental outcome (Holden & Miller, 1999). Exploring continuity and discontinuity in development has long been considered one of the core goals of developmental science (Lewis, 1999) and to go beyond mere description of developmental trends and gain understanding of the processes underlying developmental phenomena, it is necessary to understand the factors predicting continuity and change in those phenomena. Yet, the large majority of studies on the determinants of parenting measured parenting variables at only one time point (Belsky & Jaffee, 2006). This practice reflects the implicit assumption that parenting is largely stable and static, and that parenting exerts a consistent influence on the child over time. Holden and Miller observed that “invariant views of child rearing and families are appealing in that they provide a parsimonious model of parenting. Methodologically, it is also far more convenient for researchers to embrace such a view” (1999, p. 233). As a result, research has focused primarily on the origins of parenting behavior, while the circumstances surrounding change in parenting over time have been neglected (Holden & Miller, 1999).

Despite methodological conceptualizations of parenting as a static phenomenon, parenting is a dynamic, developmental process, involving a diverse array of behaviors. Parenting behaviors range from providing physical necessities such as food, shelter and clothing; providing emotional security and support and emotional regulation for the child; and providing limits on the child's behavior and discipline should those limits be exceeded. The primary goal of effective parenting is to promote the child's ability to successfully navigate his or her salient developmental tasks, and ultimately, to foster the development of an individual who is a functioning and productive member of the society in which he resides. The behaviors a parent displays towards her child both influence, and are influenced by, both changes and existing behavior patterns in the child, the family, and extra-familial contexts (Cox & Paley, 1997). Thus, competent parenting is not one set of skills, but a set of diverse, yet interrelated, behaviors and intentions that must *change appropriately* in response to the familial and extra-familial context as well as the maturation of the child (Collins & Madsen, 2003). Research exploring mechanisms of continuity and change in parenting is necessary to further illuminate the processes underlying what is clearly a very complicated developmental phenomenon.

Studying continuity and discontinuity in parenting, however, can be methodologically quite challenging. Darling & Steinberg (1993) differentiate between parenting practices and parenting styles. Parenting practices are the discrete behaviors that a parent exhibits in their parental role (e.g. hugging the child, attending parent-teacher conferences, giving time-outs), while parenting styles are the underlying meaning or intention behind their behaviors (Darling & Steinberg, 1993). The discrete

parenting behaviors that make up parent-child interactions are expected to change situationally and over time with the development of the child. For example, Hartup & Laursen (1991, as cited in Collins & Madsen, 2003) describe decreases in the frequency of ‘cuddling’ behaviors in early childhood as a result of the child’s physical growth, increased interest in the environment, and understanding that physical proximity is not necessarily necessary for emotional security to be achieved. Yet, even as cuddling decreases, parents may display their affection for the child through pats on the back, warm smiles, and verbal praise. As a result, despite changes in the frequency of cuddling behaviors, the parent-child relationship may actually be no less affectionate over time (Collins & Madsen, 2003). Indeed “relationships undergo developmental transformations in which interactions that were common in one developmental period disappear or become less frequent and appear to be replaced by functionally similar, but topographically different, interactions at later ages” (Collins & Madsen, 2003, p. 51). Thus, while the practices employed by parents in interaction with their children may change with development, and from situation to situation, the underlying function or organization of their behaviors may remain consistent.

This distinction between changes in parenting practices and parenting styles poses a challenge to the study of continuity and discontinuity in parenting. It is often difficult to differentiate true change in the underlying organization of parenting behavior, and change in the demands of the child or the situation that elicit behaviorally different, yet functionally equivalent, parenting behaviors. In their discussion of different types of continuity, Holden & Miller (1999) define functional equivalence as the idea that the function of a set of behaviors within a parent-child relationship may

remain the same, even as the behaviors themselves change. The coherence of the functional organization, or quality, of behaviors can display consistency, even as the expressed behaviors vary by context or with development (Sroufe, 1979). While the normative developmental changes that occur in parenting practices are descriptively quite interesting, functional change in the quality of the parent-child relationship would be expected to be especially important in understanding change in the functioning of the parent, child and family.

Predictors of Continuity and Discontinuity in Parenting Quality

As mentioned above, there is a relative paucity of work exploring continuity or discontinuity of parenting quality over time, and even fewer studies attempt to predict change in parenting across time (Holden & Miller, 1999). The vast majority of the currently available research describes mean-level change in parenting behaviors over time, usually as a function of child age, rather than focusing on predictors of individual differences in (dis)continuity (e.g. Bornstein & Tamis-LeMonda, 1990; Tamis-LeMonda & Bornstein, 1991; McNally, Eisenberg & Harris, 1991; Roberts, Block, & Block, 1984). For example, of the 56 studies included in Holden & Miller's (1999) meta-analysis of continuity over time, fewer than half examined predictors of continuity or discontinuity. The majority of those that did, as well as studies that have emerged since, focused on stable characteristics of the parent and child (e.g. gender) as potential predictors (e.g. Fagot & Gauvain, 1997; Forehand & Jones, 2002; Green, Gustafson & West, 1980; for exceptions see Clarke-Stewart & Hevey, 1981; Crockenberg & McCluskey, 1986; Kochanska, Kuczynski, & Maguire, 1989). While research exploring normative developmental change and the effects of relatively stable predictors is very

important, it is unlikely to illuminate processes underlying discontinuity in parenting, which are expected to be predicted by change in dynamic environmental or internal characteristics of the family system.

Given the relative scarcity of research on the topic of predicting continuity or discontinuity in parenting, it is necessary to discuss the much more abundant research on predictors of parenting in which parenting is measured statically. However, in doing this, it is important to remain extremely tentative in making the assumption that factors shown to predict parenting at one point in time, also exert an influence on the *change* in parenting over time (Fincham, Grych, & Osborne, 1994; McCurdy, 2005). For that to be the case, the predictor in question must in fact have a causal relationship with parenting such that change in the predictor will cause change in parenting. This is an assumption that most research on parenting, which is correlational in nature and often measures both parenting and the predictor of interest statically, cannot necessarily support.

Assumptions about the direction of the relationship between parenting and the predictor variable must be considered highly tentative, especially in studies that do not measure parenting longitudinally. While parenting and a variable of interest may covary, it is extremely difficult to determine the direction of effects if parenting is measured only once, even if the predictor is assessed prior to any measurement of parenting. In those instances it is impossible to rule out the possibility that parenting causes the “predictor” and simply remains relatively stable between the assessments. Without a measurement of parenting at both time points, it is impossible to determine the direction of effects. Of course, non-experimental studies in which predictor

variables—or even changes in a predictor variable—are associated with changes in parenting still must be interpreted tentatively, as third variables may still account for the relation between the two. However, slightly more confident statements can be made about the potential direction of the effect. It is critical to keep these limits of interpretation firmly in mind and to be cautious about assuming that static associations between parenting and predictors of interest will mirror relations between changes in parenting and changes in predictors.

Belsky's model (Belsky, 1984; Belsky & Jaffee, 2006) of the multiple determinants of parenting provides a useful organizational framework for the current research on predictors of parenting. Belsky proposes that the determinants of parenting can be sorted into parent personal characteristics and psychological resources (e.g. personality, psychopathology); child characteristics (e.g. temperament, behavior problems) and the parent's larger social (e.g. marital or romantic relationship influences), and work contexts. The current study will focus on the larger familial and extra-familial contexts that influence parenting, with emphasis on the ways in which parents' romantic relationships and extra-familial stress impact parenting.

Mechanisms of influence. Interestingly, the primary theories emerging to explain the links between extra-familial stress and parenting quality and the links between romantic relationship quality and parenting quality are remarkably similar. This may be in part because some researchers (e.g. Webster-Stratton, 1990) have conceptualized romantic-relationship quality, or more specifically romantic-relationship distress, conflict, and divorce, as an important sources of stress. Webster-Stratton (1990) differentiated this interparental stress from extra-familial stressors (e.g. low

socioeconomic status, unemployment, stressful life events, daily hassles) and proposed that stress in each domain should negatively impact the parent-child relationship. While this is a useful way of conceptualizing the similarities between intra-familial stress and extra-familial stress, it does not capture the full effects of romantic relationships, some of which can clearly be positive. Indeed, research has shown that positive aspects of romantic relationships can actually positively impact parenting (e.g. Leinonen, Solantaus, & Punamäki, 2002; Leinonen, Solantaus, & Punamäki, 2005; McCurdy, 2005). On the other hand, low levels of life stress, rather than promoting positive parenting, are expected to simply not have the negative impact that high levels of life stress have been shown to have. Thus theories of the impact of romantic relationships have to account for both positive and negative effects, while theories of life stress need only account for the potential negative impact. Despite these differences, in both literatures, two primary and somewhat overlapping theories have emerged explaining the link between both intra-parental and extra-familial context and the parent-child relationship: affective spillover, and stress and coping (Belsky & Jaffee, 2006; Almedia, Wethington, & Chandler, 1999; Easterbrook & Emde, 1988; Greenberger, O'Neil, & Nagel, 1994; Crouter & Bumpus, 2001).

Affective spillover. The central proposition of the spillover model is that affect, mood and behaviors emerging in the context of one relationship or setting are directly transferred to another relationship or setting (Almedia et al., 1999). Thus, affective interactions occurring within the context of the marital relationship would be expected to directly impact the emotional tone of the parents' relationship with their children (Engfer, 1988; Margolin 1981; Emde & Easterbrooks 1985; Erel & Burman, 1988).

There is quite a bit of research that that supports this hypothesis. For example, interparental hostility has been found to predict emotional withdrawal, greater hostility and intrusiveness with children (Lindahl, Clements & Markman, 1997; Lindahl & Malik, 1999; Katz & Gottman, 1996). As mentioned above, both positive and negative aspects of romantic relationships would be expected to “spill over”. In addition to frustration and conflict, feelings of love and satisfaction in the romantic relationship should promote affectively positive parent-child interactions. Easterbrooks & Emde (1988) found that marital harmony observed during the transition to parenthood predicted positive affect-sharing and physical affection in parent-child relationship in infancy, findings which have been interpreted as support for the emotional spillover hypothesis.

Because stressful events originating outside of a relationship context (e.g. being unable to pay bills) may not have an inherently affective component, proponents of a spillover perspective posit that stressful events themselves arouse negative emotions. For example, in their model of the impact of economic stress on family functioning, Conger and colleagues (Conger, Reuter & Elder, 1999; Conger & Conger, 2002) draw on Berkowitz’s (1989) frustration-aggression hypothesis which proposes that stressful events themselves lead to increased emotional arousal and negative affect which will in turn “spill over” to predict negative interactions in close relationships (as cited in Conger et al., 1999). As such, researchers supporting this model make the argument that negative affect occurring as a result of parents’ perception of an event as stressful, can still be considered a “spillover” hypothesis. Alternately, however, the argument could be made that whether or not negative affect is generated as a result of

experiencing a particular life events may in fact be a product of the parent's coping abilities and argue that this sort of research should be evaluated in terms of a stress and coping model. Because of this and other conceptual and methodological difficulties, research supporting the stress and coping model is often quite difficult to differentiate from the spillover model (Belsky & Jaffee, 2006).

Stress and coping. The second most frequently proposed mechanism of influence, which focuses on stress and coping responses, hypothesizes that stress due to challenges in the romantic relationship or to extra-familial stressors overwhelm the coping abilities of the parent, leaving him or her lacking the energy and ability to interact positively with the child (Easterbrooks & Emde, 1988; Belsky 1984). Lazarus & Folkman (1984) describe psychological stress as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing” (p. 19). Thus, if the demands of the environment exceed parents' coping abilities, they will experience psychological stress, which in turn impacts their ability to engage effectively with the environment including within the parent-child relationship. While this mechanism of influence is considered distinct from the spillover model, the two are often quite difficult to differentiate, as described above. Findings similar to those supporting the affective spillover model are also used to support the stress and coping model. The primary challenge is that as feelings of stress emanating from negative romantic relationships or life circumstances may also result in displays of negative emotion (Belsky & Jaffee, 2006; Conger et al., 1999). However, support for the stress/coping model is provided by a diary study which found that both mothers and fathers are more

likely to have tense interactions with their children the day after a tense marital interaction (Almedia et al., 1999). Additionally, for fathers, other stressors emanating from work or home demands also predicted tense interactions with their children, especially if their wives worked full time (Almedia et al., 1999). This supports the idea that as numerous stressors accumulate, coping mechanisms are less likely to be employed effectively and there is more likely to be a negative impact on the parent-child relationship. The stress and coping model is further supported by Peterson & Hawley's (1998) findings that there seems to be a critical threshold as stressors accumulate, above which they begin to impact family functioning and parenting attitudes. They found that individuals with fewer than three stressors reported better family functioning (Peterson & Hawley, 1998), while a simple linear relation between stress and family functioning would have provided better support for a spillover model. Other research indicates that stressful experiences may not simply lead to more affectively negative interactions, but may impact the parent-child relationship in different ways. For example, many studies have shown that marital conflict reduces parent's ability to recognize and respond to children's emotional needs (Fincham et al., 1994; Fauber, Forehand, Thomas & Weirson, 1990; Goldberger & Easterbrooks, 1984; Margolin, 1988; Dickstein & Parke, 1988; Howes & Markman, 1989; Valiente, Lemery, Chalfant, & Reiser, 2007). While a spillover model cannot necessarily account for the observed lack of parental receptiveness, these findings can be explained by the stress and coping hypothesis in that the parent's ability to attend to the emotional needs of their child may be compromised by their own preoccupation with stressful circumstances.

Regardless of whether the effects of extra-familial and intra-parental stressors can be accounted for primarily by the spillover model, the stress and coping model, or perhaps most likely, a combination of both, substantial research supports the strong impact these contextual factors have on the parent-child relationship.

Life stress as a predictor parenting quality. Stressful life events have been shown repeatedly to be associated with negative outcomes in areas of personal functioning as well as in the quality of close relationships including romantic relationships and parent-child relationships (Conger, Reuter, & Elder, 1999; Aneshensel, 1992; Cohan & Bradbury 1997; Conger, Lorenz, Elder, Simons, & Ge, 1993; Coyne & Downey, 1991; Hammen, 1991; Karney & Bradbury, 1995; Pearlin, 1989; Turner, Wheaton, & Loyd, 1995). Contextual stress, operationalized in a variety of ways, has been shown to both undermine positive aspects of parenting and also to increase the likelihood of engaging in negative parenting behaviors. For example, high levels of stress predicted lower levels of parental sensitivity, less warmth and responsiveness, fewer authoritative interactions, and decreased parental involvement (Pianta & Egeland, 1990; Conger, Korenz, Elder, & Simons, 1993; Simons, Beaman, Conger, & Chao, 1990; Simons, Lorenz, Conger, & Wu, 1992; Bonds, Gondoli, Sturge-Apple, & Salem, 2002; Gondoli & Silverberg, 1997; Leinonen et al., 2002). In addition to undermining positive aspects of parenting, experiences of contextual stress also predict higher levels of irritability in interactions with children, more hostile interactions, and the use of negative control tactics (Webster-Stratton, 1990, 1988; Crnic, Gaze, & Hoffman, 2005; Pianta & Egeland, 1990; Hashima & Amato, 1994;

Leinonen et al., 2002; Belsky et al., 1996; Bolger et al., 1989; Deater-Deckard & Scarr, 1996; McBride & Mills, 1994).

Research on the effects of extra-familial stressors on the parent-child relationship is diverse, but has largely fallen into several major categories: Poverty and socioeconomic hardship, work stress and role overload, and finally and most generally, major life events. As research on the effects of major life events is the most broad, and often includes work and socioeconomic challenges, it will be discussed first. Major life event approaches have been useful for identifying families at risk for problematic outcomes (Crnic et al., 1993; Crnic & Greenberg, 1990; Pianta & Egeland, 1990). Webster-Stratton (1990) found that mothers who reported high levels of stress from major life events were more controlling, punitive, and at risk for becoming abusive than those who has lower levels of life stress. Crnic et al. (2005) found that life stress predicted conflict in the parent-child relationship, but was not associated with dyadic pleasure in interacting. In a high-risk sample, Pianta & Egeland (1990) observed that mothers who experienced high levels of life stress showed less sensitivity and cooperation while engaging in caretaking and play activities with their 6-month old infant. They also found that earlier cumulative life stress predicted less supportive, more controlling and more hostile behavior between mothers and their daughters when the children were three-and-a-half (Pianta & Egeland, 1990). In general, parents experiencing high levels of stressful life events are at risk for disrupted parenting that is both more negative and less positive than parenting provided by individuals who have experienced fewer stressful life events.

A large body of literature has focused on the negative impact of socioeconomic strain on parenting and the family system. Poverty has been consistently linked to lower levels of maternal responsiveness (e.g. Bradley & Corwyn, 2003; Grant et al., 2003; Magnuson & Duncan, 2002; McLoyd, 1998). This is likely in part because adults living in poverty experience relatively more negative life events, which result in increases in stressful circumstances (Baum, 1999; Belle, 1984; Makosk, 1982). Lower-income individuals also may have smaller and less effective support networks and fewer resources upon which to draw in times of need (Cochran, Lerner, Riley, Gunnarson, & Henderson, 1990; House, Umberson, & Landis, 1988; Whelan, 1993; Schoon & Parsons, 2002; Voydanoff & Donnelly, 1998). Economic strain has been shown to have a negative impact on families even if they are not living in poverty. Parents who are experiencing financial distress engage in less effective, supportive and warm parenting behaviors in interactions with their children (Conger, Korenz, Elder, & Simons, 1993; Simons et al., 1990; Simons et al., 1992), are more likely to engage in harsh discipline and unsupportive parenting interactions (Hashima & Amato, 1994), and experience more perceived role-strain and lower levels of perceived parental control (Hilton & Desrochers, 2000).

For parents who are working, work experiences and conditions may also be sources of stress and impact the functioning of the parent-child relationship. There is much evidence to support the link between work stress and generalized feelings of stress (Crouter, Bumpus, Maguire, & McHale, 1999; Barnett & Brennan, 1997; Barnett, Marshall, Raudenbush, & Brennan, 1993; Galambos, Sears, Almeida, & Kolaric, 1995; Kandel, Davies, & Raveis, 1985). Repetti & Wood (1997) found that mothers acted

more behaviorally and emotionally withdrawn from their children upon reunion after a separation on days when they reported heavier workloads or more interpersonal stress at work. Parents who are exposed to chronically high levels of job stress also appear to be less involved and more controlling with their children (Repetti & Wood, 1997; Daniels & Moos, 1988; Grossman, Pollack, & Golding, 1988; Piotrkowski & Katz, 1983; Repetti, 1987).

When considering the impact on families, work stress may be especially detrimental to the parent-child relationship when it leads to feelings of role strain or role overload, defined by Crouter et al. (1999) as “the overwhelming feeling that it is difficult to accomplish everything that one needs to accomplish” (p. 1454). For example, Crouter, et al. (1999) found that the effects of work pressure on parent-adolescent conflict were mediated by perceptions of role-overload and when parents experience higher levels of work pressure and role overload, parent-adolescent conflict increases.

Stressful circumstances, including major life events, financial strain and work stress have all been shown repeatedly to have a negative impact on the parent-child relationship. Some evidence clearly indicates a role for negative emotion (e.g. Conger et al., 1993) while other studies seem to indicate an important role for perceived stress and coping mechanisms (e.g. Repetti & Wood, 1997). Regardless, extra-familial stress is associated with both personal functioning and functioning in important relationships, including the parent-child relationship and is therefore a likely candidate for predicting change in the parent-child relationship.

Romantic relationship quality as a predictor of parenting. A sizeable literature now documents that both negative and positive aspects of the marital relationship impact the quality of the parent-child relationship (e.g. Erel & Burman, 1995; Krishnakumar & Buehler, 2000; Brody, Pellegrini, & Sigel, 1986; Frosch, Mangelsdorf, & McHale, 2000; Gerard, Krishnakumar, & Buehler, 2006; Goldberg & Easterbrooks, 1984; Grych, 2002). For example, Heinicke (1984) and Cowan & Cowan (2000) both found that marital adjustment measured before birth predicted parental responsiveness in infancy and early childhood. High levels of unresolved conflict in the romantic relationship, as opposed to conflict that is effectively negotiated, is also related to disruptions in the parent-child relationships (Fincham et al., 1994; Buehler & Gerard, 2002; Fauber et al., 1990; Gable, Belsky, & Crnic 1994; Krishnakumar & Buehler, 2006; Fauber & Long 1991; Buehler & Gerard, 2002; Webster-Stratton & Hammond, 1999). Fincham et al., (1994) proposed that marital conflict disrupts parental discipline, diminishes the affective quality of parent-child interactions and increases parent-child aggression. Indeed, inter-parental conflict has been found to be associated with harsh discipline, increased levels of hostility and coercion, (Buehler & Gerard, 2002; Fauber, Forehand, Thomas, & Wierson, 1990; Fincham et al., 1994; Gable, Belsky, & Crnic, 1992), low parental acceptance, parental inconsistency (Krishnakumar & Buehler, 2006; Fauber et al., 1990; Fauber & Long, 1991), maternal rejection, and low parental involvement and emotional responsivity (Buehler & Gerard, 2002; Webster-Stratton & Hammond, 1999).

Moderators of marital quality and parenting quality

Several studies have suggested that there may be a stronger association between marital quality and fathering than between marital quality and mothering, perhaps due to the fact that motherhood is a more clearly socially defined role than fatherhood (e.g. Cowan & Cowan, 1992; Belsky, Youngblade, Rovine, & Volling, 1991; Goldberg & Easterbrooks, 1984; Volling & Belsky, 1991). However, in a meta-analysis Erel & Burman (1995) failed to find evidence that parent gender moderated the effect of the marital relationship on the parent-child relationship. A different meta-analysis (Krishnakumar & Buehler, 2002) found a moderating effect of parent gender for studies focused on interparental conflict but not marital quality overall. Additional research suggests that there is an especially strong relation between destructive forms of marital conflict (e.g. displays of contempt and disgust) and negative fathering behaviors (e.g. Lindahl & Malik, 1999). Further, some research suggests that it is important to consider both parent and child gender and that marital dysfunction may be especially detrimental for cross-gender parent-child relationships (father-daughter and mother-son) (Kerig, Cowan, & Cowan, 1993).

As with extra-familial stress, romantic relationship quality provides an excellent candidate for predicting change in parenting quality over time. In fact, relative to other areas of research on predictors of parenting, more literature is available exploring the effects of change in the romantic relationship subsystem on change in the parent-child subsystem. The most directly relevant studies of the effects of marital quality on change in parenting quality come from studies of parenting interventions that incorporate a marital component. While the majority of these studies show that adding a marital component enhances the efficacy of the intervention non changing child behavior (e.g.

Cowan & Cowan, 2002), change in parenting behavior itself is often not directly assessed. Few intervention studies have examined the effects of marital interventions on parenting itself, thus leaving open the possibility that the increased effectiveness of the intervention resulted from a direct effect of the marital intervention on the child. One exception is a study by Dadds, Schwarts, & Sanders (1987) that implemented a parenting intervention for families with children with conduct disorder. They found that adding a marital intervention component aimed at increasing partner support to their parenting intervention decreased the level of maternal aversive behaviors in interaction with the child relative to the group who did not receive the marital intervention (Dadds et al., 1987). Cowan, Cowan, Ablow, Johnson, & Measelle (2005) compared marital-focused intervention groups with parenting-focused intervention groups. They found that both types of interventions were effective in changing the target relationship (marital and parenting, respectively). They also found that, while the parenting intervention group showed changes in parenting but not the marital relationship, the marital intervention group showed improvement in both the marital relationship and the parent-child relationship (Cowan et al., 2005). These findings suggest a directional effect in which changes in marriage influence changes in parenting, but changes in parenting don't necessarily influence the marital relationship. Clearly the romantic relationship provides a very likely candidate for predicting change in the parent-child relationship and this relation requires further exploration.

Interactions of life stress and romantic relationship quality. While the impact of extra-familial life stress and intra-parental relationship stress on parenting have been discussed independently of each other thus far, a family systems perspective

would hypothesize that extra-familial stress impacting the parent and parent-child relationship would also have an impact on the parent's romantic relationship. Stressors such as negative life events and economic hardship may also have a direct impact on the parent's relationship partner as well as the parent herself and thereby influence the romantic relationship through both individuals involved. Indeed, substantial evidence has underscored the interrelatedness of romantic relationship functioning and extra-familial stress. Feelings of job stress and role strain have been shown to relate to both individual and partner feelings of stress (especially for wives when husbands are experiencing job stress) which in turn has been linked to poorer marital relationships (Bolger, DeLongis, Kessler, & Wethington, 1989; Crouter et al., 1999; Jones & Fletcher, 1993; Westman, 2001; Westman & Etzion, 1995; Barling & McEwan, 1992; Matthews et al., 1997; Sears & Galambos, 1992). Partner's work stress may also influence the parent-child relationship independently of the target parent's own work stress. For example, in a study exploring the effects of work stress on two-parent families, Crouter and colleagues (1999) found that fathers' work stress influenced not only his own perceived role overload, but also the perceived role overload of his wife. Mothers' perceived role overload in turn resulted in more hostile and less responsive interactions with their adolescent children (Crouter et al., 1999; Crouter & Bumpus, 2001). Thus, role overload influenced the family system through the marital subsystem and the parent-child subsystem and the interrelation between the two.

Conger and colleagues have done excellent work exploring how extra-familial stress impacts both the marital family subsystem as well as the parent-child subsystem. This family process model of economic strain focuses on the mediational role that

relationship processes have in linking economic strain with parenting quality (Conger & Conger, 2002; Conger, Reuter, & Conger, 2000; Conger, Conger, Elder, Lorenz, Simons, & Whitbeck, 1992; Conger, Reuter, & Elder, 1999). They propose a “spillover” model in which economic stress predicts emotional distress for both husbands and wives, which in turn leads to increases in marital conflict, and negatively impacts the quality of parenting provided by both parents. While much accumulated evidence supports this model, the methodological limitations of the available studies make it impossible to conclude that there is a causal, directional link from economic strain to parental emotional distress to romantic relationship problems. Emotional distress may instead emerge from romantic relationship strain or from the combination of romantic relationship strain and economic stress. For example, Coyl, Roggman, & Newland (2002) found that economic stress was correlated with relationship stress, and that both relationship stress and economic stress predicted maternal depression, which in turn predicted negative parenting interactions with their infants. In this study, economic stress also directly influenced negative parenting interactions. This methodological limitation is important because it leaves open the possibility that other mechanisms account for the link between extra-familial stress and romantic relationship quality and parenting quality. Clearly, the interaction between these variables is complicated and may not be explained by a simple unidirectional mediational model.

Following the idea that Conger’s mediational model may not fully encompass the interrelations between extra-familial stress, romantic relationship functioning and parenting, some have suggested that an interaction model may be more appropriate. For example, Leinonen et al. (2002) used Conger & colleagues’ Family Stress Model

(Conger & Elder, 1994) to examine the paths between economic hardship, parental psychopathology, romantic relationship functioning and the quality of parenting. They found the expected pathways between economic hardship, emotional distress and psychological dysfunction, marital distress and finally parenting quality. However, they also tested whether the reported quality of marital interactions moderated the effect of economic hardship on parenting quality. They found that economic hardship was associated with less self-reported punitive parenting for both mothers and fathers, if the parents perceived marital interactions to be warm and supportive (Leinonen et al., 2002). For fathers, economic hardship was associated with less non-authoritative parenting (child reported) if the father perceived their marital relationship to be positive (Leinonen et al., 2002). While Leinonen et al. (2002) interpreted this moderation in terms of a buffering effect of the romantic relationship on the relation between economic hardship and parenting quality, it is equally correct and plausible to interpret the interaction in terms of life stress moderating the effect of marital quality on parenting quality. Their results could be interpreted as supporting the idea that the quality of marital interactions have little impact on punitive parenting in the context of low economic hardship, but poor quality marital interactions greatly increase the risk of punitive parenting when the parent is also struggling with the stress of high levels of economic hardship. This would be consistent with a stress-and-coping perspective in which the combination of intra- and extra-familial stressors overload the parent's coping capacities and result in a stronger impact of stress on the parent-child relationship.

While the link between extra-familial stress, romantic relationship strain, and parenting quality has been clearly established, the impact of *change* in stressful circumstances on *change* in parenting has very rarely been tested. Only one study was identified that met these criteria. McCurdy (2005) found that increased financial stress led to increases in punitive parenting attitudes, while increases in support from romantic partner and other close relationship partners predicted decreases in punitive parental attitudes. Unfortunately, they did not explore the interrelatedness of extra-familial stress and partner support. While this study does have the methodological limitation of relying solely on parent report for all variables, thus leaving open the possibility that their findings can be accounted for by shared method variance (McCurdy, 2005), it clearly advances the literature on predictors of parenting by exploring dynamic predictors of change in parenting.

Current Hypotheses

The current study proposes to examine dynamic predictors of change in parenting quality over time. More specifically, change in romantic relationship tension over time, change in life stress over time, and the relation between the two, will be used to predict change in parenting quality. Research exploring change in parenting as a function of dynamic predictors will add substantially to the literature on determinants of parenting by addressing some of the limitations of the current literature that treats parenting as a static variable. In addition, examining the effects of both extra-familial life stress and intra-parental romantic relationship tension as predictors of parenting simultaneously will allow examination of the ways in which those two variables may interact to predict change in parenting. Though it is not possible to directly test competing spillover and

stress and coping models against each other using these data, if it is found that life stress moderates the relation between relationship tension and parenting quality, such that relationship tension has a stronger impact on parenting in the context of extra-familial life stress, support for the stress and coping theory of influence would be provided. To examine these relations, the following questions will be addressed:

1. Is change in parenting across time predicted by change in romantic relationship tension across time?
2. Is change in parenting across time predicted by change in life stress across time?
3. Does life stress moderate the relation between romantic relationship functioning and parenting such that there is a stronger relation between romantic relationship functioning and parenting in the context of higher life stress?

Method

Participants

Participants in the current study were drawn from the Minnesota Longitudinal Study of Parents and Children, a prospective and ongoing longitudinal study of mothers and their firstborn children. The original sample consisted of 267 primiparous women who were recruited during their third trimester of pregnancy through public health clinics in Minneapolis, Minnesota (Egeland & Sroufe, 1981). All of the mothers in this high-risk sample qualified for public assistance for prenatal care and delivery (i.e., mothers' incomes were below the federal poverty level) and the sample was representative of the urban poor population in Minneapolis in 1977. At the time of delivery, the majority of mothers were single (61%), and had less than a high school

education (59%). Mothers ranged in age from 12 to 34 years ($M = 20.52$, $SD = 3.63$) and approximately half were teenagers. The current study includes data from a subsample of mothers ($N = 168$) who participated in at least two of the three observational parenting assessments when their child was 24 months, 42 months, or 13 years of age. Families for whom different caregivers were observed over time (e.g. father, foster mother, or grandparent was the primary caregiver at one time point) were removed from the data set ($N = 15$).

Procedures & Measures

Parenting quality. The quality of the mother's parenting was assessed based on observational coding at three time points: 24 months, 42 months, and 13 years (156 months).

24-month assessment. When the child was 24 months of age, mothers and children were observed in the laboratory, participating in a series of tool problem tasks developed by Matas, Arend & Sroufe (1978). The four problem-solving tasks become increasingly complex and are designed to be too difficult for the child to complete on his or her own. As such, they required the parent to provide support, assistance and structuring for successful completion of the task. In the first task, the child was required to push a prize out from between two parallel plastic plates using a stick. In the second task, the child again used the stick to retrieve a prize, but this time from the middle of a clear plastic tube. The third task used the same tube, but required the child must to put two shorter sticks together end-to-end to make a stick long enough to retrieve the prize. The final task involved weighing down the end of a lever with a block in order to lift the prize through a hole in a large plastic box.

42-month assessment. When the child was 42 months of age, mothers and children were again observed in laboratory-based interaction tasks. As before, the dyad was presented with a series of four tasks that require the parent to facilitate a successful experience (based on Block & Block, 1980; see Erickson, Sroufe & Egeland, 1985 for a full description). The first task involved putting together copies of a wooden target block from 44 smaller blocks of various shapes. The second task required the child to think of and name objects that have wheels for a total of three minutes. The third task involved sorting tiles into a matrix according to their shape, size and color. Finally, the child had to use an Etch-a-Sketch to trace a maze drawn on the screen of the Etch-a-Sketch.

13-year assessment. In early adolescence, mothers and their children returned to the lab to engage in a series of four collaborative tasks. As before, successful completion of these tasks required the parent to structure the task and support the child. The first task involved the dyad designing an anti-smoking campaign. They then completed two increasingly difficult puzzles in which the parent was blindfolded and the child had to direct the parent's movements in order to complete the puzzle. The pair then discussed the potential results of two imaginary events. Finally, the two collaborated to complete a Q-sort task in which they sorted descriptor cards into a matrix describing the ideal person (Sroufe, 1991).

At each of the three assessment periods, independent, reliable coders rated the mothers' behavior in the videotaped interaction based on several qualitative 7-point scales (Coder reliabilities were calculated at each time point and can be found in Table 1). Ratings of maternal supportive presence, quality of instruction and hostility were

chosen a-priori for inclusion in this study because they were expected to be most relevant to the construct of maternal sensitivity and because they were measured repeatedly at each time point.

Maternal supportive presence. Supportive presence assesses the mothers' ability to be emotionally supportive and involved with their children, as well as their ability to serve as a secure base in times of frustration or distress. Parents scoring high on this scale respond appropriately and sensitively to the child's distress or frustration and also show genuine pleasure in the child's success.

Maternal quality of assistance. Quality of assistance measures the mother's ability to offer minimal assistance and structuring of the tasks necessary for the children to successfully work toward completion of the task and ultimately to see the connection between their actions and the solution. Parents must provide clues and information in a timely and clear manner, as well as pace the clues to align with the child's understanding and attention. Parents who simply take the task over from the child, or tell the child how to complete the task without allowing the child to attempt it first, receive lower scores on this scale because they do not allow the child to adequately engage with the task and ultimately understand the solution.

Maternal hostility. Hostility is designed to measure the parent's expression of rejection, dismissal or derogation of the child. Parents showing hostility may mock or laugh at the child's difficulty, blame the child for mistakes, or show other signs of contempt or disapproval. Maternal hostility was reverse-coded to be consistent in valence with the other positive indicators of parenting quality such that a 7 on the hostility scale indicates low hostility, while a 1 indicates very high hostility.

As the child's developmental capabilities changed dramatically over the 11-year time span during which parenting was assessed, it was necessary to modify the behavioral indicators of the parenting constructs assessed (See Appendix 1 for scales used at each time point). For example, a young child who becomes very frustrated by the task may require that the parent provide physical closeness as a means of support, and an encouraging statement in the absence of physical presence would not be enough to alleviate the child's distress. On the other hand, an adolescent who has dramatically better emotional and behavioral regulation capabilities may simply need the parent to provide a sense of psychological presence and support through an encouraging statement. Similarly, individual children of the same age may have very different needs depending on their own frustration tolerance and emotional state on that particular day. The qualitative nature of these scales emphasizes the functional nature of the parent's behavior in the context of the particular interaction between parent and child. The magnitude, frequency or discrete supportive behaviors is less critical than whether these behaviors are timely and fully meets the emotional needs of the child, whatever they are. Thus, while the scales are slightly different across the various ages, there is *functional equivalence* in the scales across time.

For each time point, the three parenting variables were factor analyzed using principle component analysis. Analyses confirmed a one-factor solution at each time point and loadings for each parenting construct were similar across age, indicating that the individual parenting scales related similarly to each other across time (see Table 2 for factor loadings and Table 3 for descriptive statistics). A composite parenting quality variable was then calculated at each age by multiplying each variable by its factor

loading and then summing the three products.

Life Events Survey. Life stress was assessed at several time points using the Life Events Survey, an interview measure based on the Life Events Inventory developed by Cochrane & Robertson (1973) and modified to increase relevance for a low SES population (See Appendix 2 for a representative Life Events Inventory assessment and coding scheme). The scale was modified several times over the years it was used and for the current analyses, only items that were repeated across assessments completed at ages 12 months, 18 months, 30 months, 42 months, grade 3, and grade 6 were included. In addition, some items probed for stress emanating from the mother's romantic relationships (e.g. "Has there been an increase in the number of arguments between you and your partner?"). Because the parent's relationship tension was assessed separately and independent predictors were required for the following analyses, all items that were identified as being relevant to the Marital/Relationship Conflict subscale identified by Pianta (1986) as well as any other items that were identified as possibly relating to relationship tension (e.g. "has your partner moved in or out of your residence") were eliminated from the scales (See Table 4 and Table 5 for items included and items excluded from the current analyses).

Responses to the remaining 25 items were rated at each time point based on the severity and the amount of disruption caused by the experience and a total score was calculated at each time point by summing the ratings for each item. Life stress scores used in the current analyses were computed by averaging the scores at the two time points immediately preceding the parent-child assessments at 24, 42 months and 13 years. Individuals who only had one assessment available during a given time period

retained the score of the time point that was available. Life stress in infancy (indexed as 15 months) was calculated as the average of Life stress scores given at 12 and 18 months. Life stress in toddlerhood (indexed as 36 months) was calculated as the average of life stress scores received at 30 and 42 months, and childhood life stress (indexed as 114 months) was calculated as the average of life stress scores received at the grade 3 and grade 6 assessments. See Table 3 for descriptive statistics for each time point.

Romantic relationship tension. Romantic relationship tension was coded at several time points based on interviews conducted with the mother. The 5-point relationship tension scale was designed to assess the degree of tension existing in the mother's primary romantic (Hyatt, 1986). Tension is defined as the degree of hostility, conflict, discord and/or disharmony existing between the mother and her mate. Tension was coded regardless of whether it was described as acute or chronic, restricted in area or prevalent across the whole relationship, obvious or subtle, or active (e.g. fighting) or passive (e.g. emotional uninvolved or lack of concern). Four trained coders scored relationship tension based on all available interview data. Ten percent of the sample was scored by two raters and reliabilities on the tension scale ranged from .94 to .97 across the 8 assessment periods. See Appendix 3 for the Relationship Tension Scale. As with the life stress variables, relationship tension scores were computed by averaging the scores at the two time points immediately preceding the parent-child assessments at 24, 42 months and 13 years. Individuals who only had one assessment available during a given time period retained the score that was available. Relationship tension in infancy (indexed as 15 months) was calculated as the average of relationship tension scores given at 12 and 18 months. Relationship tension in toddlerhood (indexed

as 36 months) was calculated as the average of relationship tension scores received at 30 and 42 months, and childhood life stress (indexed as 59 months) was calculated as the average of life stress scores received at 54 and 64 month assessments. See Table 3 for variable descriptive statistics at each time point.

Data Analysis Plan

Initial Data Analysis and Descriptive Statistics

The rate of missing cases ranged from 0% to 15% across variables (with a mean of 6% missing ($SD = .0544$)). The majority of subject attrition occurred within the first year of life, prior to the first assessment included in these analyses. Of the original 267 children, 168 (63%) had parenting assessments completed at least two time points and had relevant data on other variables of interest. There were no significant differences between the 168 participants in these analyses and the 99 individuals who were not included in the analyses, except that moms who were included in the analyses had approximately 6 months more educational experience when their children were born ($t(256) = -2.028, p < .05$) and were slightly more likely to be white ($\chi^2(1) = 7.271, p < .01$) than moms who were not included.

Previous studies indicate that child sex, maternal age, maternal education and intelligence, and race/ethnicity may be important covariates in analyses exploring the effects of relationship and extra-familial stress on parenting (Goodman et al., 1993; Beautrais, Fergusson & Shannon, 1982; Bee et al., 1982; Feeley et al 2005; Ragozin, Basham, Crnic, Greenberg & Robinson, 1982; Murray, Harrell, Brody, Chen, Simons, Black et al., 2008). Initial analyses were conducted to see whether any of these demographic variables (race/ethnicity, maternal age, intelligence and education level)

predicted change in any of the variables of interest. Maternal age and education level at birth were not correlated with change in any of the variables of interest. In addition, mothers' intelligence, measured when the child was 48 months old using the Wechsler Adult Intelligence Scale (Wechsler, 1955), was not associated with any of the outcomes of interest. Race (dichotomized as white/non-white) was associated with differences in change in life stress across both time periods, however, comparisons of the model fit for constrained and unconstrained models across white/non-white categories did not indicate a significant difference, so race was not included as a covariate in any of the analyses reported below. Potential sex differences emerged in differential patterns of correlations between variables of interest and will be examined by comparing model fit of models in which path weights are constrained to be equal or allowed to vary for males and females. If significant sex differences emerge, the model will be run separately for males and females. Descriptive statistics for each variable and correlations between the variables at each time point can be found in Table 3 and Table 6.

Planned Hypothesis Testing

Simple linear growth curves will be conducted to determine whether there is significant linear change in parenting quality, life stress, and relationship tension. If these initial growth curves indicate that significant change exists, two separate cross-domain growth curve models relating parenting slope to will be fit.

To test the hypothesis that change in relationship quality is predicted by change in relationship quality (Question 1) a cross-domain growth curve model will be fit to explore the relation between change in parenting quality and change in relationship

tension (see Figure 1). It is hypothesized that there will be a significant negative relation between linear slope in parenting and linear slope in relationship tension. Thus, as relationship tension increases, it is expected that parenting quality will decrease. To test the hypothesis that linear change in parenting quality over time will be predicted by linear change in life stress over time (Question 2) a second cross-domain growth curve will be fit to explore the relation between change in parenting quality and change in life stress (see Figure 2). It is hypothesized that there will be a significant negative relation between linear slope in parenting and linear slope in life stress.

To test the hypothesis that relationship quality may exert more of an influence on parenting quality in the context of high stress (Question 3), a moderated cross-domain growth curve model will be fit exploring whether life stress moderates the relation between change in parenting quality and change in relationship tension. It is expected that there will be a stronger relation between parenting quality and relationship tension in the context of high life stress because stressful circumstances should tax the parents' regulatory and coping capacity and have a stronger impact on the parent-child relationship. Model fit for the predicted model will be compared to the nested non-moderated model.

Results

Before the initial hypotheses could be tested, it was necessary to determine whether there was significant change over time in the three variables of interest: parenting quality, romantic relationship tension, and life stress. In order to predict change in one variable from change in a second variable, significant growth must exist in each of the variables of interest. Univariate linear growth curves were fit for each variable. Because parenting, the outcome variable of interest, was measured at only three time points, there were only enough degrees of freedom to estimate linear growth (Fitzmaurice, Laird & Ware, 2004). While quadratic (non-linear) slopes could have been estimated for life stress and relationship tension because they were each measured at least 4 time points, linear slopes were fit in order to be consistent with the model for parenting and because there were no specific hypotheses related to the effects of non-linear growth in the predictor variables. Linear growth curves were fit using the statistical program R, version 2.11.1 (R Development Core Team, 2010) and R statistical package lme4 (Bates & Maechler, 2010). See Table 7 for results of the linear growth curves in parenting quality, romantic relationship tension, and life stress. Fitting linear growth curves to parenting quality, relationship tension, and life stress indicated the presence of significant group-level linear change (fixed effects) in parenting and life stress over time, but no significant linear change in relationship tension.

Because the hypotheses of interest were focused on how individual growth in one variable might predict individual growth in another, less on group-level mean change across time, I was especially interested in whether there were significant random effects (individual variation) in the predicted slopes. While there were significant

random intercepts for each variable, indicating individual variation in the initial starting point, no significant random effects were found for parenting or relationship tension slope. Life stress did appear to demonstrate significant individual variation in slope across time.

While the linear growth curve models did not indicate significant individual variation in change over time, in comparing the actual observed variables to the estimated growth lines for participants across time, there did seem to be quite a bit of individual variation that was not being captured by the estimated linear slopes (See figures 3, 4, and 5). In fact, there appeared to be a non-linear trend in the observed parenting variables over time, such that participants tend to show increases in parenting quality across 24-42 months, followed by decreases between 42 months and 13 years. As mentioned above, it was not possible to estimate non-linear parenting slopes with only three time points. Therefore, to explore this individual variation in slope and to retain the possibility that change in parenting between 24 and 42 months may be different than change between 42 months and 13 years, it was decided that calculated slopes between each time point would be used as outcome and predictor variables. Thus, for each participant, slopes were calculated between T1 and T2 (described below as the first time interval) and between T2 and T3 (described below as the second time interval) for each of the variables of interest ($\text{Slope} = (X_2 - X_1) / (T_2 - T_1)$). For ease of discussion below, the time interval to which a particular slope refers will be identified as a subscript. So for example the parenting slope between 24 and 42 months will be identified as “parenting slope₂₄₋₄₂.” Because the slopes were correlated with the initial level of each variable, initial levels were included in each model as well.

All further models are path models and were conducted using AMOS 17.0 (Arbuckle, 2008) which uses the Full Information Maximum Likelihood (FIML) estimation method for dealing with missing data. The FIML estimation method does not delete cases with data missing from particular waves of data collection or missing individual variables from within waves of data collection. All available information for all participants is used to calculate estimates which has been shown to avoid potential problems with biased parameter estimates (Wothke & Arbuckle, 1996)

Romantic Relationship Tension and Parenting Quality

To address the first question, a path model was fit to test whether change in parenting was related to change in romantic relationship tension across either the first or second time interval (See Figure 6 for model and standardized path weights). Contrary to hypotheses, there were no significant paths between relationship tension slopes and parenting slopes across either the first or second time interval. As would be expected from the apparent non-linear trend in the data, parenting slope₂₄₋₄₂ predicted parenting slope₄₂₋₁₅₆ such that increases in parenting slope₂₄₋₄₂ predicted decreases in parenting slope₄₂₋₁₅₆. Similar patterns were found for relationship tension across the two time intervals. Model fit statistics indicated that the proposed model was a poor fit for the data. Typically, a well fitting model should have a non-significant χ^2 -test (though moderate to large sample sizes often inflate the χ^2 statistic into significance despite an adequate model fit) and should show a normed χ^2 test (χ^2 / df) falling below 5. A Root Mean Square Error of Approximation (RMSEA) of $\leq .05$ indicates very close fit, while RMSEA $\leq .10$ indicates a reasonable model fit. The Comparative Fit Index (CFI) $> .9$ indicates a reasonable fit. For the current model, $\chi^2(8) = 58.577, p < .000$, and the

normed $\chi^2 = 7.322$, both of which do not indicate a good fit. RMSEA = .195 and the CFI = .69 also suggesting a very poor fit for the data.

To test whether there were sex differences in the model, multi-group analyses were conducted using the AMOS multiple group procedure (Arbuckle, 2008). Model fit was similar regardless of whether the paths weights were constrained to be the same or were allowed to vary freely for boys and girls ($p = .634$), indicating that there were no significant sex differences in the model parameters.

It was rather unexpected that change in romantic relationship tension did not predict change in parenting quality over time. Because this is a high-risk sample with high family instability, follow-up analyses were conducted to see if change in the stability of the parents' romantic relationship predicted change in parenting quality. As with relationship tension, however, no significant results were found. To address the possibility that the relationship tension variable itself was lacking validity in some way, further follow-up analyses were conducted in which items from the Life Events Scale that pertained to romantic relationship quality were composited with the relationship tension variable. This composite will be referred to as "relationship stress" to differentiate it from the relationship tension variable used in previous analyses. Unfortunately, because the Life Events Scale version used at the 12 and 18 month assessments did not include several of the items pertaining to romantic relationship quality, use of this composite did not allow exploration of *change* in romantic relationship stress across the first time interval because the variables were not identical across time. However, change across the second time interval could be addressed and

the impact of initial level of romantic relationship stress at 15 months could be explored.

Romantic Relationship Stress and Parenting Quality. Romantic relationship stress composites were created by factor analyzing the relationship tension variables that were relevant to each time point, along with the sum of the available relationship items from each assessment of life stress that was closest in time to the tension assessments (see Table 8 for factor loadings). As with the parenting factors, each variable was multiplied by the factor loading and the products were summed for each time period. A variable representing change in romantic relationship stress between T2 and T3 was computed in the same way slope variables were computed for the other constructs ($X3-X2/T3-T2$).

The romantic relationship stress composite was included in a model similar to that described in Figure 6. However relationship tension slope₁₅₋₃₆ was replaced with the romantic relationship stress composite from 15 months and relationship tension slope₃₆₋₅₉ was replaced with the relationship stress slope₃₆₋₅₉. Initial path estimates indicated that there was a marginally significant path between the romantic relationship stress at 15 months and parenting slope₂₄₋₄₂ in the direction expected ($\beta = -.142, p = .074$) and a significant relation between the romantic relationship stress at 15 months and parenting slope₄₂₋₁₅₆ ($\beta = .208, p = .029$). This relation was not in the expected direction. As before, parenting slope₂₄₋₄₂ predicted parenting slope₄₂₋₁₅₆ ($\beta = -.318, p = .000$), though romantic relationship stress at 15 months did not predict relationship stress slope₃₆₋₅₉ ($\beta = -.202, p = .103$).

Gender Differences. As with relationship tension, to test whether there were sex differences in the model, multi-group analyses were conducted using the AMOS multiple group procedure (Arbuckle, 2008). Results indicated that model fit was significantly better when the paths weights were allowed to vary freely for boys and girls than when they were constrained to be equal ($p = .000$), indicating that there were significant gender differences in the model parameters across the two groups. As such, the model was fit separately for boys and girls.

Boys. For boys, relationship stress at 15 months predicted relationship stress slope₃₆₋₅₉ ($\beta = -.371, p = .015$) such that higher levels of relationship stress at 15 months predicted decreases in relationship stress across the second time interval. As before parenting slope₂₄₋₄₂ negatively predicted parenting slope₄₂₋₁₅₆ ($\beta = -.271, p = .014$). The only indication that relationship stress related to change in parenting quality for boys was the marginally significant relation between relationship stress at 15 months and parenting slope₄₂₋₁₅₆, though this was not in the expected direction ($\beta = .260, p = .070$). No other paths were significant.

Girls. For girls, relationship stress at 15 months did not significantly predict relationship stress slope₃₆₋₅₉ ($\beta = -.042, p = .827$), though parenting slope₂₄₋₄₂ negatively predicted parenting slope₄₂₋₁₅₆ ($\beta = -.421, p = .000$). For girls, parenting stress at 15 months significantly predicted parenting slope₂₄₋₄₂ ($\beta = -.227, p = .046$) such that higher parenting stress at 15 months predicted decreases in parenting between 24 and 42 months. There was also a marginally significant relation between relationship stress slope₃₆₋₅₉ and parenting slope₄₂₋₁₅₆ ($\beta = -.253, p = .067$). This indicated that increases in

relationship stress predicted decreases in parenting quality over the second time interval, as was predicted. No other paths were significant.

While the lack of repeated measures of romantic relationship stress constituted a substantial limitation in that it is impossible to make claims about the effects of changes in relationship stress across toddlerhood, these analyses do provide some important insights. They suggest that the weakness of the relationship tension variable may be accounting for the lack of significant findings with respect to change in parenting. With the addition of Life Events Scale items related to relationship problems, there does appear to be some effect of relationship quality on change in parenting quality over time, though this seemed to be primarily the case for girls. For girls, higher levels of romantic relationship stress at 15 months predicted decreases in parenting across 24 to 42 months and increases in relationship stress across the second time interval predicted decreases in parenting quality over the same time interval.

Extra-Familial Life Stress and Parenting Quality

To address the second question, a second path model was fit to test whether change in parenting was related to change in life stress across either the first or second time interval (See Figure 7 for model and standardized path weights). As before, parenting slope₂₄₋₄₂ predicted parenting slope₄₂₋₁₅₆ and life stress slope₁₅₋₃₆ was associated with life stress slope₃₆₋₁₁₄ such that increases across the first time interval predicted decreases across the second time interval for both variables. There was a significant path between life stress slope₁₅₋₃₆ and parenting slope₂₄₋₄₂, but contrary to hypotheses, the path weight was positive indicating that increases in life stress slope₁₅₋₃₆ predicted increases in parenting slope₂₄₋₄₂. This is contrary to much of the literature on

the relation between life stress and parenting, which indicates that life stress has a detrimental impact on parenting (Crnic et al 1993; Crnic & Greenberg 1990; Pianta & Egeland, 1990). Model fit statistics again indicated poor fit for the data. For the current model, $\chi^2(8) = 61.703, p < .000$, and the normed $\chi^2 = 7.713$, both of which do not indicate a good fit. RMSEA = .200 and the CFI = .740, also suggesting a very poor fit for the data.

As with relationship tension, to test whether there were sex differences in the model, multi-group analyses were conducted. Results indicated that model fit was similar regardless of whether the paths weights were constrained to be the same across sex or were allowed to vary freely for boys and girls ($p = .312$), indicating that there were no significant sex differences in the model parameters across the two groups.

To explore the unexpected positive relation between life stress and parenting, further analyses were conducted. It is possible that there is a non-linear relation between change in life stress and change in parenting such that, in the context of low initial levels of life stress, low or moderate increases in life stress may have a positive impact on parenting, perhaps focusing parents on the family or forcing them to reevaluate parenting techniques or seek help. Indeed, Peterson & Hawley (1998) found evidence for a threshold above which life stress began to have a negative impact on parenting. While he did not find that stress below that level had a positive impact, it was still possible that a nonlinear relation might exist. To test whether there were differences in the relation between changes in life stress and changes in parenting depending on the initial level of life stress in the family, life stress in infancy was trichotomized into three categories: those falling below the 33rd percentile (low; N =

68), those between the 33rd and 66th percentile (medium, N = 53) and those falling above the 66th percentile (high, N =46) in life stress. Dividing the sample by standard deviation, as is perhaps more traditional, resulted in very small sample sizes in the high and low group leading to the possibility that null results in those groups were due to inadequate power. The same model identified in Figure 7, though not including the initial life stress variable, was fit separately for each group.

Interestingly, the positive path between life stress slope₁₅₋₃₆ and parenting slope₂₄₋₄₂ fell out of significance for the low and medium stress groups ($\beta = .127, p = .248$; and $\beta = .133, p = .248$ respectively), but was approaching significance for the high stress group ($\beta = .203, p = .096$). While the path was not significant for any of the groups, indicating that power may still be an issue and the effect may not be robust for the sample as a whole, it was closest to significance for the group with the most initial life stress. If the marginally significant result is interpreted, it is the families under the most stress for whom increases in life stress may result in increases in parenting. It is unclear why this might be, but it is possible that these families are more likely than families experiencing low or moderate initial levels of stress to reach a true crisis point, perhaps forcing them to seek outside help or bringing them to the attention of authorities who help them obtain needed services.

Life Stress by Romantic Relationship Tension Interactions and Parenting Quality

To test the final hypothesis, both life stress and romantic relationship tension were included in a model together, and two interaction terms were created. The first interaction term consisted of the product of relationship tension slope and life stress slope across the first time interval (identified below as “relationship tension slope₁₅₋

$_{36}X_{\text{life stress slope}}_{15-36}$). The second interaction term was the product of relationship tension slope and life stress slope across the second time interval (identified below as “relationship tension slope $_{36-59}X_{\text{life stress slope}}_{36-114}$ ”). Paths were created between relationship tension slope $_{15-36}X_{\text{life stress slope}}_{15-36}$ and both parenting slope $_{24-42}$ and parenting slope $_{42-156}$. An additional path was added between relationship tension slope $_{36-59}X_{\text{life stress slope}}_{36-114}$ and parenting slope $_{42-156}$. The second interaction term was not significantly related to parenting slope, but model fit indicated a better fit when it remained in the model, relative to a nested model in which only the first interaction term was included, so it was retained. Standardized path weights are presented in Figure 8.

The path estimates in the interaction model indicated patterns of interrelations between the variables that were very similar to the models fit separately for each variable. The positive relation between life stress slope $_{15-36}$ and parenting slope $_{24-42}$ remained significant and there were no relations between the relationship tension and parenting variables across either interval. There was a marginally significant path between the interaction term relationship tension slope $_{15-36} X$ life stress slope $_{15-36}$ and parenting slope $_{42-156}$. Model fit for the interaction model continued to indicate poor model fit, $\chi^2(39) = 183.103$, $p < .000$, and the normed $\chi^2 = 4.695$, RMSEA = .149, CFI = .588. However, when model fit was compared to a the nested model in which both predictors were present, but the interaction terms were excluded, model fit for the interaction model indicated slightly better fit on all indices (non-interaction model: $\chi^2(24) = 122.514$, $p < .000$, normed $\chi^2 = 5.105$, RMSEA = .157 and the CFI = .665). This

indicates that including the interaction terms significantly increases the model fit to the data.

Gender Differences. As before, to test whether there were sex differences in the model, multi-group analyses were conducted. Results indicated a better model fit when separate path weights were estimated for boys and girls than when path weights were constrained to be the same ($p < .000$). As such, separate models were fit for boys and girls. See path estimates and p-values for boys and girls separately in Table 9.

For boys, the significant positive path between life stress slope₁₅₋₃₆ and parenting slope₂₄₋₄₂ remained significant. However, the negative relation parenting slope₂₄₋₄₂ and parenting slope₄₂₋₁₅₆ was only approaching significance ($p = .061$). None of the other paths are significant, though the interaction term relationship tension slope₁₅₋₃₆ X life stress slope₁₅₋₃₆ approached significance for both parenting slope₂₄₋₄₂ and parenting slope₄₂₋₁₅₆ ($p < .077$ and $p < .085$, respectively). For girls, each of the slope variables across the first time interval remained significantly related to slope in the same variable across the second time interval, but the path between life stress slope₁₅₋₃₆ and parenting slope₂₄₋₄₂ was not significant for girls. There were also no significant interactions terms for girls.

Boys interaction interpretation. Because the interactions were closely approaching significance for boys, and because sample size was rather small when split by sex, it was decided that it was appropriate to interpret both marginally significant interactions. To aid in interpretation of the interaction term, the model was again fit using difference scores (X1-X2) instead of slopes. Because dividing the variables by the number of months elapsed (a constant) is a linear transformation, the model fit and

path significance remains equivalent across the slope and difference models.

Interpreting the interaction is slightly easier, however, because the outcome values will represent simply change in the quality of parenting across the two time points in question, not the change in quality divided by the change in time. For path estimates for boys, see Table 10.

Estimated values for change in parenting₂₄₋₄₂ were calculated as a function of combinations of “high” and “low” life stress difference scores and relationship tension difference scores across the first time interval, using the path estimates obtained in the path model. Values one standard deviation above and below the mean for each variable were substituted into the equation (See Table 11 for descriptive statistics on difference scores of interest). Because the variables in the equation were change scores, values ranged from low negative values, indicating greater decreases, to higher positive values, indicating greater increases. Thus, a low value on the life stress difference variable indicated not a low absolute level of life stress, but a greater decrease. Similarly, a high value on the life stress difference score indicated an increase in life stress.

Results showed that for families of boys, parenting₂₄₋₄₂ was likely to decrease slightly ($\Delta = -.0345$) only if the families experienced *both* increases in life stress *and* increases in tension. While the decrease in parenting quality was very small and could easily be characterized as no change across that time period, it is in contrast to the slight increase in parenting quality demonstrated by parents in the other groups across this same time point (Δ ranged from 1.129 to 1.653 for the other groups). In this model, neither increases in tension nor increases in life stress alone were enough to have a negative impact on parenting in families of boys. This may also help to explain the

presence of the significant positive main effect of change in life stress on change in parenting across this same time point. With the significant interaction in the model, the main effect of life stress is no longer interpretable by itself. See Figure 9 for a visual interpretation of the interaction.

To test the second significant interaction, the difference in parenting between 42 months and 13 years was calculated as a function of combinations of “high” and “low” life stress difference scores and relationship tension difference scores across the first time interval. As before, values one standard deviation above and below the mean for each variable were substituted into the equation. For the other variables in the model, which were included in the equation because they were loaded onto parenting slope₄₂₋₁₅₆ in the model but were not directly relevant to the interaction, the mean value of each variable was substituted into the equation (See Table 11 for descriptive statistics).

Results of this interaction were somewhat less easy to interpret. There was a decline in parenting quality for all groups between 42 months and 13 years. However, it seems as though families of boys experiencing either decreases in both life stress and relationship tension or increases in both life stress and relationship tension experienced a smaller decline in parenting across time ($\Delta = -1.752$ and $\Delta = -1.780$ respectively) than families for whom only life stress increased ($\Delta = -3.572$) or only relationship tension increased ($\Delta = -2.294$) while the other decreased. It seems as though having life stress and relationship tension change similarly, regardless of whether they were changing for the better or the worse, acted as something of a protective factor that limited the decline in parenting across the second time interval. It should be noted that the changes in

parenting for all groups are rather small and the difference between groups is also quite small. See Figure 10 for a visual interpretation of the interaction.

Life Stress by Romantic Relationship Stress Interactions and Parenting Quality

Because there appears to be limitations in the predictive power of the relationship tension variable when used by itself (as was shown in analyses using the relationship stress variable), an interaction model was fit also including both the extra-familial life stress and relationship stress variables, as well as the interaction between the two, in a model very similar to that shown in Figure 8. To test whether there were sex differences in the model, multi-group analyses were conducted. Results indicated there was a better model fit when separate path weights were estimated for boys and girls than when path weights were constrained to be the same ($p < .000$). As such, separate models were fit for boys and girls. See standardized path estimates and p -values for boys and girls separately in Table 12.

Boys. For boys, relationship stress at 15 months predicted parenting slope₄₂₋₁₅₆ such that higher levels of relationship stress at 15 months related to increases in parenting quality between 42 months and 13 years. With relationship stress in the model, change in life stress did not significantly predict change in parenting over either time interval for boys. The interaction between relationship stress₁₅ and life stress Δ_{15-36} was significantly associated with parenting slope₂₄₋₄₂. There was also a marginally significant interaction between relationship tension Δ_{36-59} and life stress Δ_{36-114} in predicting parenting Δ_{42-156} .

As before, the same model was fit using difference scores rather than slopes to assist in ease of interpretation of the interactions. First, the interaction between

relationship stress at 15 months and change in life stress across the first time interval in predicting parenting across the first time interval was explored. As before values for parenting between 24 and 42 months were calculated as a function of combinations of “high” and “low” life stress difference scores and level of relationship stress at 15, using the path estimates obtained in the path model. Values one standard deviation above and below the mean for each variable were substituted into the equation (See Table 13 for descriptive statistics on difference scores of interest).

Results indicated that for boys, all groups showed an increase in parenting quality across 24-42 months. In the context of increases in life stress, regardless of whether relationship stress at 15 months was high or low, parenting quality increased by approximately 2.5 points between 24 and 42 months. In the context of decreases in life stress, having low relationship stress at 15 months predicted an increase in parenting of only 1.31 points. Having high relationship stress in the context of decreases in life stress was the most detrimental, as parenting quality only increased by 0.27. This is counter to what would be expected as families who had increases in life stress, regardless of level of relationship stress, tended to show the greatest increase in parenting quality, while families who showed decreases in life stress, but had high relationship stress at 15 months were the most likely to not follow the normative pattern of increase during this time and remained relatively stable across this time period. For a visual representation of the interaction, see Figure 11.

The second (marginally) significant interaction, predicting change in parenting across the second time interval from the interaction of change in relationship stress and change in life stress across the second time interval, was interpreted in a similar way.

Results indicated that, for boys, parenting declined across childhood for all groups. However, in the context of increasing relationship stress, parenting declined by over 4 points regardless of whether extra-familial stress increased or decreased ($\Delta = -4.68$ and $\Delta = -4.28$ respectively). In the context of decreasing relationship stress but increasing extra-familial stress, parenting declined by slightly more than three points ($\Delta = -3.19$). Surprisingly, families who had decreasing life stress and decreasing relationship stress seemed to show the most dramatic decline in parenting quality ($\Delta = -5.80$). This seems to indicate that high relationship stress across childhood is a risk factor for declines in parenting, regardless of extra-familial stress, as is having decreases in life stress in the context of decreases in relationship stress. The group that seemed the most protected from parenting decline over this period had decreasing relationship stress in the context of increasing life stress. One could speculate that perhaps when life stress is increasing but relationship tension is low, families are more likely to pull together to combat the extra-familial stressors and this family cohesion helps parents maintain positive parenting. For a visual representation of the interaction and the equation used to interpret it, see Figure 12.

Girls. For girls, the relation between relationship stress at 15 months and parenting slope₂₄₋₄₂ was marginally significant, such that higher levels of relationship stress at 15 months predicted decreases in parenting quality between 24 and 42 years. This effect was in the expected direction. Relationship stress slope₃₆₋₅₉ also significantly predicted parenting slope₄₂₋₁₅₆ in the expected direction, such that increases in relationship stress predicted decreases in parenting quality over that time period. For girls, life stress slope₁₅₋₃₆ predicted parenting slope₄₂₋₁₅₆, such that increases in life stress

between 15 and 36 months predicted increases in parenting quality between 42 months and 156 months. Life stress slope₃₆₋₁₁₄ also had a marginally significant positive relation to parenting slope₄₂₋₁₅₆. This is different from the non-significant life stress findings for girls in the relationship tension model, the life stress model, and the life stress-relationship tension interaction model. The interaction between life stress slope₁₅₋₃₆ and relationship tension stress at 15 months was significantly associated with parenting slope₄₂₋₁₅₆ for girls, which renders the main effects between life stress slope₁₅₋₃₆ and parenting slope₄₂₋₁₅₆ uninterpretable, though the other life stress main effects remains interpretable. As with boys, the same model was fit using difference scores to aid in interpretation of the interaction.

In interpreting the interaction between relationship stress at 15 months and change in life stress between 15 and 36 months in predicting parenting Δ_{42-156} , it appears that both families experiencing low initial (15m.) relationship stress and decreases in life stress, and families experiencing high initial relationship stress and increases in life stress, show similar declines in parenting across childhood ($\Delta = -3.772$ and $\Delta = -3.477$, respectively). Families with high initial relationship tension, but declines in life stress showed the smallest decrease in parenting quality ($\Delta = -2.263$) while those with low initial levels of relationship tension and increases in life stress showed a slightly greater decrease ($\Delta = -2.724$). For families of girls, having an initially high level of relationship stress combined with increases in life stress or having an initially low level of relationship stress combined with a decrease in life stress appeared to be the most detrimental to parenting. See Figure 13 for a visual interpretation of the interaction and table 14 for relevant descriptive statistics for girls

Discussion

The presence of significant interactions between life stress and relationship quality (as measured by both the tension and stress variables) in predicting change in parenting highlight not only the importance of exploring multiple predictors of change in parenting, but also in exploring how those predictors interact with each other to determine change in parenting. Significant interactions between the two variables were found in all models. The interaction between change in life stress and change in relationship tension in predicting change in parenting between 24 and 42 months indicated that parents of boys who experience an increase in stress in both of these contextual domains are at risk for declines in parenting relative to parents who experience an increase in only one domain or who experience decreases in stress across both domains. This provides some support for the stress and coping model of influence because it indicates that increases in relationship tension are more likely to exert an influence in the context of increases in life stress than when life stress levels decrease.

Unfortunately, the apparent weakness of the relationship tension variables used in this study, and the rather different pattern of interaction effects that were found when the relationship stress variable was used, makes it challenging to know how to interpret the effect of change in relationship quality on change in parenting quality. The fact that these patterns varied for boys and girls further complicates interpretation of the results.

For boys, the model in which relationship tension is included appears to be more consistent with current research and theory on the expected relation between change in relationship tension, change in life stress and change in parenting quality. While the main effects of relationship tension were nonsignificant and the significant main effect

of life stress was not interpretable given the presence of the interaction, the interaction between change in life stress and change in relationship tension indicated that it was the combination of increases in life stress and increases in relationship tension that was most detrimental to parenting quality. On the other hand, results obtained when the relationship stress variable was used seem to more closely align with theory and research for families of girls. For girls, interpretable main effects of relationship stress at 15 months and the main effect of change in relationship stress across the second time interval on parenting were both in the expected direction, indicating that increases in relationship stress predicted decreases in parenting quality.

It is possible that the nature of the differences between the relationship stress and relationship tension variables can account for the apparent gender differences in the way these variables relate to parenting for families of boys and girls. Many of the life stress items relating to relationship quality seemed to reflect family system transitions and family chaos (e.g. physical fighting, heavy drinking, partner moving in and out of residence; see Table 4 for a full list). These indicators of relationship quality are somewhat different in nature than relationship tension, which does not necessarily involve family transitions or chaos. It is possible that this sort of family dysfunction influences girls in a different way than it influences boys. However, this is largely speculation and given the existing data, it is impossible to determine the reason for these gender differences.

It is somewhat unclear why there were no clear effects in the expected direction of extra-familial life stress on change in parenting for mothers of girls. There is evidence to suggest that boys are more vulnerable to stressful life events (Goodman et

al., 1993; Zaslow & Hayes, 1986) and this vulnerability appears to be partially mediated by parenting quality (Yates, Obradovic, Egeland, 2010). There is also some indication that the effects of stress seem to have an especially strong impact on parent interactions with children of the opposite sex (Kerig et al., 1993; Raikkonen, Pesonen, Heinonen, Komsu, Jarvenpaa, & Strandberg, 2006). Because this sample includes mothers only, it is possible that different patterns of effects would be found in father-daughter relationships. There is some precedence within this sample for findings that mother-son relationships seem to be especially highly influenced by contextual changes and changes in life stress while mother-daughter relationships have more often been found to be impacted by the mother's relationship quality (Sroufe, Egeland, Carlson & Collins, 2005) and this effect is replicated here, if the relationship stress results are considered. It is possible that different types of contextual predictors would be more effective in predicting change in parenting for mothers of girls.

It seems likely that the relationship tension variable was not an adequate assessment of romantic relationship quality for these families, as indicated by the quite distinct results obtained when the initial measure of relationship tension was supplemented by items from the Life Events Scale. Unfortunately, repeated assessments of many of the relevant Life Event Scale items were not available in infancy, so it was impossible to truly test whether change in relationship stress across early childhood predicted change in parenting quality. However, despite the limitations of the relationship stress models in addressing the hypotheses directly, they provided some evidence to support the idea that relationship stress is a predictor of change in parenting quality, and potential confirmation that the null results found when the

relationship tension variables were used are likely the result of measurement problems rather than true null results.

It is important to consider the methodological and theoretical limitations of the current study. One critical limitation is the inadequacy of the current study in addressing the mechanisms underlying the influence of context on the parent-child relationship. It was impossible to test and directly compare competing theoretical models given the current data. While there was some minor support for the stress and coping model, these analyses and the available data were not sufficient to rule out emotional spillover mechanisms or to determine whether there are circumstances under which different theoretical mechanisms are especially relevant. A true systematic exploration of these questions will require more solidly developed theoretical models, including explicit predictions about the results that would be expected if each model was confirmed, as well as results that could be obtained and would uniquely undermine the veracity of each model. While the current study does not meet these requirements, future research should be conducted to address these issues.

Another central methodological limitation is the availability of only three measures of parenting, which limited the ability to test for the presence of non-linear change in parenting. Indeed the linear growth models provided an exceptionally poor fit for the data and the apparent individual variation in change in parenting was largely undetectable when linear curves were fit. Having more frequent measures of parenting, particularly measures of parenting across childhood, would have substantially strengthened the ability to detect and predict change. While the path models and calculated slopes used in the current analyses are an appropriate alternative to growth

curve modeling, this technique requires that the slopes between the first and second time point, and second that third time point, be entered into the model separately. As there were no specific hypotheses relating to change across early childhood as opposed to change across middle childhood, this was perhaps a less parsimonious model than the proposed cross-domain growth curve models would have been. However, results indicated that change across early childhood and change across middle childhood were frequently associated with different predictors. Thus, the developmental complexity of change in parenting and the dynamic predictors of change may in fact be better captured by a path model approach.

Another clear limitation of the current study was the relatively small sample size. As sex differences were present in several of the models of interest, it was necessary to split the sample into even smaller groups, thus introducing the possibility that there was insufficient power to detect significant effects. For this reason, marginally significant results were interpreted, but caution must be employed in assuming these effects generalize to the population at large. Similarly, caution is warranted in accepting the null hypothesis where non-significant effects were found. In exploring dynamic predictors of discontinuity in parenting quality with independent sources of data, this study is the first of its kind and replication in other, larger samples is sorely needed.

The presence of sex differences in the patterns of predictors of discontinuity was quite interesting and again highlights the need for further research in this area. Change in parenting across time appeared to be predicted by different contextual factors for boys and girls, which brings up the possibility that child-effects are making significant

contributions to the quality of parenting over time. Indeed, research has shown that boys may be more susceptible to the effects of contextual stress and that this relation is not fully mediated by parenting quality (Yates et al., 2010). Thus, contextual stress may be impacting parenting both through the direct impact on the parent, and also indirectly through its impact on the child and subsequent child behavior (Yates et al., 2010; Anthony, Anthon, Glanville, Naiman, Wannders, & Shaffer, 2005; Crnic et al., 2005). There is also evidence that parent sex, and the interaction of parent sex and child sex, may be important moderators of the effects of contextual stressors on parenting. Fathering behavior has been shown to be sensitive to contextual stress effects (Elder et al., 1985) and there is some indication that fathering may be even more susceptible to environmental stressors than mothering (Almedia et al., 1999; Osborne & Fincham, 1996). Thus, in future work it will be necessary to examine change in fathering behavior as well as mothering and the potential for interactions based on both parent-sex and child sex.

Finally, as described above, it is quite challenging to confirm that longitudinal assessments of parenting quality are functionally equivalent over time. This is a challenge that must be considered in any longitudinal study of change over time, particularly when the time span in question encompasses dramatic developmental change in child abilities and needs. It was necessary to modify the interaction tasks and coding schemes used to assess parenting to maintain the developmental appropriateness of the assessments and the validity of the parenting construct over time. However, the possibility exists, and it is nearly impossible to disconfirm, that the observed change in parenting is an artifact of the differing demands of the assessments over time, rather

than true change in the quality of parenting itself. Given this challenge, the qualitative nature of the coding scheme used to assess parenting in this study provides a real strength. Because parenting is assessed on the basis of how well the parent met the needs of the child *given the challenges presented by the situation and apparent needs of the child in that particular context*, any variation in task demands across assessments is in some ways taken into account in the coding scheme itself. The ability of the parent to both identify and to meet the child's needs for structure and support when they are present, and to allow the child more autonomy and freedom when they are not, is indeed one of the hallmarks of parental sensitivity. The coding scheme used in this study is quite effective in capturing that flexibility on the part of the parent.

Conclusions

The current study is one of the very few available that attempts to examine discontinuity in parenting quality with dynamic predictors. While hypotheses were not fully confirmed, these results suggest two important issues for further attention. First, one cannot assume that results based on static predictors of static measures of parenting will generalize to questions about change in parenting. Given the limitations of the current study it is not possible to firmly accept the null hypothesis with respect to the unexpected non-significant findings. However, it is possible that variables that have been shown to predict static parenting may not, in fact, predict change in parenting over time (McCurdy, 2005). Despite the methodological challenges of looking at predictors of change in parenting measured dynamically, this approach adds significantly to the understanding of developmental processes and allows more assurance in confirming the

causal assumptions made in much of the literature about the direction and nature of relations that cannot be studied experimentally.

Second, these findings highlight the importance of exploring parenting as a dynamic developmental outcome, and the complexity of studying the parent-child relationship as an embedded relationship system. The very few studies that have examined continuity and discontinuity in parenting using dynamic predictors of parenting did not address how those dynamic predictors may interact across time (for an exception, see Yates et al., 2010). This study expands the current literature by including information about both intra-familial and extra-familial sources of tension separately and exploring how these separate contextual domains influence change in parenting.

The quality of parenting has long been considered an important predictor of child development, and has more recently become an outcome of interest in and of itself. However it is still very frequently conceptualized as stable and static, and little research has been done exploring the dynamic nature of parenting over time. This study provides evidence to support elements of Belsky's (1984) model of the determinants of parenting. Indeed, it provides some support for the assertion that extra-familial stress and romantic relationship strain act as actual 'determinants' of parenting, rather than mere correlates of parenting. It also highlights the need for theorists and researchers exploring the predictors of parenting to differentiate processes that lead to change in parenting and those that promote stability (McCurdy, 2005). Finally the results of this study emphasize the complexity of the parenting system as a dynamic, embedded system and confirm the need for more research exploring the nature of discontinuity in

parenting quality across time, as well as the need to explore multiple determinants of parenting independently and in interaction with each other.

References

- Almeida, D. M., Wethington, E., & Chandler, A. L. (1999). Daily transmission of tensions between marital dyads and parent-child dyads. *Journal of Marriage and Family, 61*, 49-61. doi:10.2307/353882
- Aneshensel, C. S. (1992). Social stress: Theory and research. *Annual Review of Sociology, 18*, 15-38. doi:10.1146/annurev.so.18.080192.000311
- Anthony, L. G., Anthon, B. J., Glanville, D. N., Naiman, D. Q., Wannders, C., & Shaffer, S. (2005). The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behavior problems in the classroom. *Infant and Child Development, 14*, 133-154. doi:10.1002/icd.385
- Arbuckle, J. (2008). *AMOS 17.0 user's guide*. Chicago, IL: SPSS Inc.
- Barling, J., & McEwan, K. E. (1992). Linking work experiences to facets of marital functioning. *Journal of Organizational Behavior, 13*, 573-583. doi:10.1002/job.4030130604
- Barnett, R. C., & Brennan, R. T. (1997). Change in job conditions, change in psychological distress, and gender: A longitudinal study of dual-earner couples. *Journal of Organizational Behavior, 18*, 253-274. doi:10.1002/(SICI)1099-1379(199705)18:3<253::AID-JOB800>3.0.CO;2-7

- Barnett, R. C., Marshall, N. L., Raudenbush, S. W., & Brennan, R. T. (1993). Gender and the relationship between job experiences and psychological distress: A study of dual-earner couples. *Journal of Personality and Social Psychology*, *64*, 794-806. doi:10.1037/0022-3514.64.5.794
- Bates, D., & Maechler, M. (2010). *lme4: Linear mixed-effects models using S4 classes*. R package version 0.999375-33. <http://CRAN.R-project.org/package=lme4>.
- Baum, A. (1999). Socioeconomic stress and chronic stress. In N. E. Adler, M. Marmot, G. McEwen & J. Stewart (Eds.), *Socioeconomic status and health in industrial nations* (pp. 131-144). New York, NY: New York Academy of Sciences.
- Beautrais, A. L., Fergusson, D. B., & Shannon, F. T. (1982). Family life events and behavioral problems in preschool aged children. *Pediatrics*, *70*, 774-779. doi:10.1016/S0002-7138(09)60396-4
- Bee, H. L., Barnard, K. E., Eyres, S. J., Gray, C. A., Hammond, M. A., & Speitz, A. L. et al. (1982). Prediction of IQ and language skill from perinatal status, child performance, family characteristics, and mother-infant interactions. *Child Development*, *53*, 1134-1156. doi:10.2307/1129003
- Belle, D. (1984). Inequality and mental health: Low income and minority women. In L. Walker (Ed.), *Women and mental health policy* (pp. 135-150). Los Angeles, CA: Sage.

- Belsky, J. (1984). *The determinants of parenting: A process model* Wiley-Blackwell.
doi:10.1111/1467-8624.ep7405453
- Belsky, J., & Jafee, S. (2006). The multiple determinants of parenting. *Developmental psychopathology: Vol. 3: Risk, disorder and adaptation* (2nd ed., pp. 35-85). New York: Wiley.
- Belsky, J., Woodworth, S., & Crnic, K. (1996). Troubled family interaction during toddlerhood. *Development and Psychopathology*, 8, 477-495.
doi:10.1017/S0954579400007227
- Belsky, J., Youngblade, L., Rovine, M., & Volling, B. (1991). Patterns of marital change and parent-child interaction. *Journal of Marriage and Family*, 53, 487-498.
doi:10.2307/352914
- Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W. A. Collins (Ed.), *Development of cognition, affect, and social relations: The Minnesota symposium on child psychology* (pp. 39-101). Hillsdale, NJ: Earlbaum.
- Bolger, N., DeLongis, A., Kessler, R. C., & Shilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology*, 57, 808-818. doi:10.1037/0022-3514.57.5.808

- Bolger, N., DeLongis, A., Kessler, R. C., & Wethington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and the Family*, *51*, 175-183.
doi:10.2307/352378
- Bonds, D. D., Gondoli, D. M., Sturge-Apple, M. L., & Salem, L. N. (2002). Parenting stress as a mediator of the relation between parenting support and optimal parenting. *Parenting: Science and Practice*, *2*, 409-435.
doi:10.1207/S15327922PAR0204_04
- Bornstein, M., & Tamis-LeMonda, C. S. (1989). Maternal responsiveness and cognitive development in children. In M. H. Bornstein (Ed.), *Maternal responsiveness: Characteristics and consequences* (pp. 49-61). San Francisco: Jossey-Bass.
- Bradley, R. H., & Corwyn, R. (2003). Socioeconomic status and child development. *Annual Review of Psychology*, *53*, 371-399.
doi:10.1146/annurev.psych.53.100901.135233
- Brody, G. H., Pillegrini, A. D., & Sigel, I. E. (1986). Marital quality and mother-child and father-child interactions with school-aged children. *Developmental Psychology*, *22*, 291-296. doi:10.1037/0012-1649.22.3.291
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

- Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*, 723-742. doi:10.1037/0012-1649.22.6.723
- Buehler, C., & Gerard, J. M. (2002). Marital conflict, ineffective parenting, and children's and adolescents' maladjustment. *Journal of Marriage and Family, 64*, 78-92. doi:10.1111/j.1741-3737.2002.00078.x
- Clarke-Stewart, K. A., & Hevey, C. M. (1981). Longitudinal relations in repeated observations of mother-child interaction from 1 to 2 1/2 years. *Developmental Psychology, 17*, 127-145. doi:10.1037/0012-1649.17.2.127
- Cochran, M., Larner, M., Riley, D., Gunnarson, L., & Henderson, C. (1990). *Extending families: The social networks of parents and their children*. New York: Cambridge University Press.
- Cochrane, R., & Robertson, A. (1973). The life events inventory: A measure of the relative severity of psycho-social stressors. *Journal of Psychosomatic Research, 17*, 135-139. doi:10.1016/0022-3999(73)90014-7
- Cohan, C. L., & Bradbury, T. N. (1997). Negative life events, marital interaction and the longitudinal course of newlywed marriage. *Journal of Personality and Social Psychology, 73*, 114-128. doi:10.1037/0022-3514.73.1.114

- Collins, W. A., Maccoby, E. E., Steinberg, L., Hetherington, E. M., & Bornstein, M. H. (2000). Contemporary research on parenting: The case for nature and nurture. *American Psychologist, 55*, 218-232. doi:10.1037/0003-066X.55.2.218
- Collins, W. A., & Madsen, S. D. (2003). Developmental change in parenting interactions. In L. Kuczynski (Ed.), *Handbook of dynamics in parent-child relations* (pp. 49-66). Thousand Oaks, CA: Sage Publications.
- Conger, R. D., & Conger, K. J. (2002). Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family, 64*, 361-373. doi:10.1111/j.1741-3737.2002.00361.x
- Conger, R. D., Conger, K. J., Elder, G. H. J., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of economic hardship and adjustment of early adolescent boys. *Child Development, 63*, 526-541. doi:10.1111/1467-8624.ep9207061028
- Conger, R. D., & Elder, G. H. J. (1994). *Families in troubled times: Adapting to change in rural America* (1st. ed.). New York: Aldine De Gruyter.
- Conger, R. D., Lorenz, F. O., Elder, G. H., Simmons, R. L., & Ge, X. (1993). Husband and wife differences in response to undesirable life events. *Journal of Health and Social Behavior, 34*, 71-88. doi:10.2307/2137305
- Conger, K. J., Reuter, M. A., & Conger, R. D. (2000). The role of economic pressure in the lives of parents and their adolescents: The family stress model. In L. Crockett,

& R. Silbereisen (Eds.), *Negotiating adolescence in times of social change* (pp. 201-233). Cambridge, U.K.: Cambridge University Press.

Conger, R. D., Rueter, M. A., & Elder, G. H., Jr. (1999). Couple resilience to economic pressure. *Journal of Personality and Social Psychology, 76*, 54-71.
doi:10.1037/0022-3514.76.1.54

Cowan, C. P., & Cowan, P. A. (2000). *When partners become parents: The big life change for couples*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Cowan, P. A., & Cowan, C. P. (2002). Interventions as tests of family systems theories: Marital and family relationships in children's development and psychopathology. *Development and Psychopathology, 14*, 731-759.
doi:10.1017/S0954579402004054

Cowan, P. A., Cowan, C. P., Ablow, J. C., Johnson, V. K., & Measelle, J. (Eds.). (2005). *The family context of parenting in children's adaptation to elementary school*. Mahwah, NJ: Lawrence Erlbaum Associates.

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*, 243-267. doi:10.1146/annurev.psych.48.1.243

Coyl, D. D., Roggman, L. A., & Newland, L. A. (2002). Stress, maternal depression, and negative mother-infant interactions in relation to infant attachment. *Infant Mental Health Journal, 23*, 145-163. doi:10.1002/imhj.10009

- Coyne, J. C., & Downey, G. (1991). Social factors and psychopathology: Stress, social support and coping processes. In M. R. Rosenzweig, & L. W. Porter (Eds.), *Annual review of psychology* (pp. 401-425). Palo Alto, CA: Annual Reviews, Inc.
- Crnic, K. A., Gaze, C., & Hoffman, C. (2005). Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behavior at age 5. *Infant and Child Development, 14*, 117-132. doi:10.1002/icd.384
- Crnic, K. A., & Greenberg, M. T. (1990). Minor parenting stresses with young children. *Child Development, 61*, 1628-1637. doi:10.2307/1130770
- Crnic, K. A., Greenberg, M. T., Ragozin, A. S., Robinson, N. M., & Basham, R. B. (1983). Effects of stress and social support on mother and premature and full-term infants. *Child Development, 54*, 209-217. doi:10.2307/1129878
- Crockenberg, S. B., & McCluskey, K. (1986). Change in maternal behavior during the baby's first year of life. *Child Development, 57*, 746-753. doi:10.1111/1467-8624.ep7248839
- Crouter, A. C., & Bumpus, M. F. (2001). Linking parents' work stress to children's and adolescents' psychological adjustment. *Current Directions in Psychological Science, 10*, 156-159. doi:10.1111/1467-8721.00138
- Crouter, A. C., Bumpus, M. F., Maguire, M. C., & McHale, S. M. (1999). Linking parents' work pressure and adolescents' well-being: Insights into dynamics in dual-

earner families. *Developmental Psychology*, 35, 1453-1461. doi:10.1037/0012-1649.35.6.1453

Dadds, M.,R., Schwartz, S., & Sanders, M. R. (1987). Marital discord and treatment outcome in behavioral treatment of child conduct disorders. *Journal of Consulting and Clinical Psychology*, 55, 396-403. doi:10.1037/0022-006X.55.3.396

Daniels, D., & Moos, R. H. (1988). Exosystem influences on family and child functioning. *Journal of Social Behavior and Personality*, 3, 113-133.

Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, 113, 487-496. doi:10.1037/0033-2909.113.3.487

Deater-Deckard, K., & Scarr, S. (1996). Parenting stress among dual-earner mothers and fathers: Are there gender differences? *Journal of Family Psychology*, 10, 45-59. doi:10.1037/0893-3200.10.1.45

Dickstein, S., & Parke, R. (1988). Social referencing in infancy: A glance at fathers and marriage. *Child Development*, 59, 506-511. doi:10.2307/1130328

Easterbrooks, M., & Emde, R. (1988). Marital and parent-child relationships. In R. Hinde, & J. Stevenson-Hinde (Eds.), *Relationships within families* (pp. 83-103). Oxford: Oxford University Press.

Egeland, B., & Sroufe, L. A. (1981). Attachment and early maltreatment. *Child Development*, 52, 44-52. doi:10.1111/1467-8624.ep8861651

Elder, G. H., Nguyen, T. V., & Caspi, A. (1985). Linking family hardship to children's lives. *Child Development, 56*, 361-375. doi:10.2307/1129726

Emde, R. N., & Easterbrooks, M. A. (1985). Assessing emotional availability in early development. In W. K. Frankenburg, R. N. Emde & J. Sullivan (Eds.), *Early identification of children at risk: An international perspective* (pp. 79-101). New York: Plenum.

Engfer, A. (1988). The interrelatedness of marriage and the mother-child relationship. In R. A. Hinde, & J. Stevenson-Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 104-118). New York, NY: Oxford University Press.

Erel, O., & Burman, B. (1995). Interrelatedness of marital relations and parent-child relations: A meta-analytic review. *Psychological Bulletin, 118*, 108-132. doi:10.1037/0033-2909.118.1.108

Erickson, M. F., Sroufe, L. A., & Egeland, B. (1985). The relationship between quality of attachment and behavior problems in preschool in a high-risk sample. *Monographs of the Society for Research in Child Development, 50*, 147-166. doi:10.2307/3333831

Fagot, B., & Gauvain, M. (1997). Mother-child problem solving: Continuity through the early childhood years. *Developmental Psychology, 33*, 480-488. doi:10.1037/0012-1649.33.3.480

- Fauber, R., Forehand, R., Thomas, A. M., & Wierson, M. (1990). A mediational model of the impact of marital conflict on adolescent adjustment in intact and divorced families: The role of disrupted parenting. *Child Development, 61*, 1112-1123. doi:10.1111/1467-8624.ep9102040967
- Fauber, R. L., & Long, N. (1991). Children in context: The role of the family in child psychotherapy. *Journal of Consulting and Clinical Psychology, 59*, 813-820. doi:10.1037/0022-006X.59.6.813
- Feeley, N., Gottlieb, L., & Zelkowitz, P. (2005). Infant, mother, and contextual predictors of mother-very low birth weight infant interaction of 9 months of age. *Developmental and Behavioral Pediatrics, 26*, 24-33.
- Fincham, F. D., Grych, J. H., & Osborne, L. N. (1994). Does marital conflict cause child maladjustment? Directions and challenges for longitudinal research. *Journal of Family Psychology, 8*, 128-140. doi:10.1037/0893-3200.8.2.128
- Fitzmaurice, G. M., Laird, N. M., & Ware, J. H. (2004). *Applied longitudinal analysis*. Hoboken, NJ: Wiley & Sons.
- Forehand, R., & Jones, D. J. (2002). The stability of parenting: A longitudinal analysis of inner-city African-American mothers. *Journal of Child and Family Studies, 11*, 455-467. doi:10.1023/A:1020935525335

- Frosch, C. A., Mangelsdorf, S. C., & McHale, J. L. (2000). Marital behaviors and the security of preschooler-parent attachment relationships. *Journal of Family Psychology, 14*, 144-161. doi:10.1037/0893-3200.14.1.144
- Gable, S., Belsky, J., & Crnic, K. (1992). Marriage, parenting and child development: Progress and prospects. Special issue: Diversity in contemporary family psychology. *Journal of Family Psychology, 5*, 276-294. doi:10.1037/0893-3200.5.3-4.276
- Galambos, N. L., Sears, H. A., Almeida, D. M., & Kolaric, G. C. (1995). Parents' work overload and problem behavior in young adolescents. *Journal of Research on Adolescence, 5*, 201-223. doi:10.1111/1532-7795.ep11301574
- Gerard, J. M., Krishnakumar, A., & Buehler, C. (2006). Marital conflict, parent-child relations, and youth maladjustment: A longitudinal investigation of spillover effects. *Journal of Family Issues, 27*, 951-975. doi:10.1177/0192513X05286020
- Goldberg, W. A., & Easterbrooks, M. A. (1984). Role of marital quality in toddler development. *Developmental Psychology, 20*, 504-514. doi:10.1037/0012-1649.20.3.504
- Gondoli, D. M., & Silverberg, S. B. (1997). Maternal emotional distress and diminished responsiveness: The mediating role of parenting efficacy and parental perspective taking. *Developmental Psychology, 33*, 861-868. doi:10.1037/0012-1649.33.5.861

- Goodman, S. H., Brumley, H. E., Schwartz, K. R., & Purcell, D. W. (1993). Gender and age in relation between stress and children's school adjustment. *Journal of Early Adolescence, 13*, 329-345. doi:10.1177/0272431693013003006
- Grant, K. E., Compas, B. E., Stuhlmacher, A. F., Thrum, A. E., McMahon, S. D., & Halpert, J. A. (2003). Stressors and child and adolescent psychopathology: Moving from markers to mechanisms of risk. *Psychological Bulletin, 129*, 447-466. doi:10.1037/0033-2909.129.3.447
- Green, J. A., Gustafson, G. E., & West, M. J. (1980). Effects of infant development on mother-infant interactions. *Child Development, 51*, 199-207. doi:10.1111/1467-8624.ep12325451
- Greenberger, E., O'Neil, R., & Nagel, S. K. (1994). Linking workplace and homeplace: Relations between the nature of adults' work and their parenting behaviors. *Developmental Psychology, 30*, 990-1002. doi:10.1037/0012-1649.30.6.990
- Grossman, F. K., Pollack, W. S., & Golding, E. (1988). Fathers and children: Predicting the quality and quantity of fathering. *Developmental Psychology, 24*, 82-91. doi:10.1037/0012-1649.24.1.82
- Grych, J. (2002). Marital relationships and parenting. In M. Bornstein (Ed.), *Handbook of parenting: Vol. 4. Social conditions and applied parenting* (2nd ed., pp. 203-225). Mahwah, NJ: Erlbaum.

- Hammen, C. (1991). Generation of stress in the course of unipolar depression. *Journal of Abnormal Psychology, 100*, 555-561. doi:10.1037/0021-843X.100.4.555
- Hashima, P. Y., & Amato, P. R. (1994). Poverty, social support, and parental behavior. *Child Development, 65*, 394-403. doi:10.2307/1131391
- Heinicke, C. M. (1984). Impact of pre-birth parent personality and marital functioning on family development: A framework and suggestions for further study. *Developmental Psychology, 20*, 1044-1053.
- Hilton, J. M., & Desrochers, S. (2000). The influence of economic strain, coping with roles, and parental control on the parenting of custodial single mothers and custodial single fathers. *Journal of Divorce and Remarriage, 33*, 55-76. doi:10.1300/J087v33n03_04
- Holden, G. W., & Miller, P. C. (1999). Enduring and different: A meta-analysis of the similarity in parents' child rearing. *Psychological Bulletin, 125*, 223-254. doi:10.1037/0033-2909.125.2.223
- House, J. S., Umberson, D., & Landis, K. (1988). Structures and processes of social support. *Annual Review of Sociology, 14*, 293-318. doi:10.1146/annurev.so.14.080188.001453
- Howes, P., & Markman, H. J. (1989). Marital quality and child functioning: A longitudinal investigation. *Child Development, 60*, 1044-1051. doi:doi:10.2307/1130778

Hyatt, A. (1986). *Effects of relationship tension on the early adjustment of children.*

(Unpublished Doctoral Dissertation). University of Minnesota, Minneapolis, Minnesota.

Jones, F., & Fletcher, B. C. (1993). An empirical study of occupational stress transmission in working couples. *Human Relations, 46*, 881-903.

doi:10.1177/001872679304600705

Kandel, D. B., Davies, M., & Raveis, V. H. (1985). The stressfulness of daily social roles for women: Marital, occupational, and household roles. *Journal of Health and Social Behavior, 26*, 64-78. doi:10.2307/2136727

Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, method and research. *Psychological Bulletin, 118*, 3-34. doi:10.1037/0033-2909.118.1.3

Katz, L., & Gottman, J. M. (1996). Spillover effects of marital conflict: In search of parenting and coparenting mechanisms. In J. McHale, & P. Cowan (Eds.), *Understanding how family-level dynamics affect children's development: Studies of two-parent families* (pp. 221-245). San Francisco: Jossey-Bass.

Kerig, P. K., Cowan, P. A., & Cowan, C. P. (1993). Marital quality and gender differences in parent-child interaction. *Developmental Psychology, 29*, 931-939.

doi:10.1037/0012-1649.29.6.931

- Kochanska, G., Kuczynski, L., & Maguire, M. C. (1989). Impact of diagnosed depression and self-reported mood on mothers' control strategies: A longitudinal study. *Journal of Abnormal Child Psychology, 17*, 493-511.
doi:10.1007/BF00916509
- Kovan, N. M., Chung, A. L., & Sroufe, L. A. (2009). The intergenerational continuity of observed early parenting: A prospective, longitudinal study. *Developmental Psychology, 45*, 1205-1213. doi:10.1037/a0016542
- Krishnakumar, A., & Buehler, C. (2000). Interparental conflict and parenting behaviors: A meta-analytic review. *Family Relations, 49*, 25-44. doi:10.1111/j.1741-3729.2010.00597.x
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Leinonen, J. A., Solantaus, T. S., & Punamäki, R. (2002). The specific mediating paths between economic hardship and the quality of parenting. *International Journal of Behavioral Development, 26*, 423-435. doi:10.1080/01650250143000364
- Leinonen, J. A., Solantaus, T. S., & Punamäki, R. (2005). Social support and the quality of parenting under economic pressure and workload in Finland: The role of family structure and parental gender. *Journal of Family Psychology, 17*, 409-418.
doi:10.1037/0893-3200.17.3.409

- Lewis, M. (1999). Contextualism and the issue of continuity. *Infant Behavior and Development, 22*, 431-444. doi:10.1016/S0163-6383(00)00017-5
- Lieberman, A. F., Padrón, E., Van Horn, P., & Harris, W. W. (2005). Angels in the nursery: The intergenerational transmission of benevolent parental influences. *Infant Mental Health Journal, 26*, 504-520. doi:10.1002/imhj.20071
- Lindahl, K. M., Clements, M., & Markman, H. (1997). Predicting marital and parent functioning in dyads and triads: A longitudinal investigation of marital processes. *Journal of Family Psychology, 11*, 139-151. doi:10.1037/0893-3200.11.2.139
- Lindahl, K. M., & Malik, N. M. (1999). Observations of marital conflict and power: Relations with parenting in the triad. *Journal of Marriage and the Family, 61*, 320-330. doi:10.2307/353751
- Magnuson, K. A., & Duncan, G. J. (2002). Parents in poverty. In M. H. Bornstein (Ed.), *Handbook of parenting* (2nd ed., pp. 95-121). Mahwah, NJ: Earlbaum.
- Makosky, V. P. (1982). Sources of stress: Events or conditions? In D. Belle (Ed.), *Lives in stress: Women and depression* (pp. 35-53). Los Angeles: Sage.
- Margolin, G. (1981). The reciprocal relationship between marital and child problems. In J. P. Vincent (Ed.), *Advances in family intervention, assessment, and theory* (pp. 131-182). Greenwich, CT: JAI Press.

- Margolin, G. (1988). Marital conflict is not marital conflict is not marital conflict. In R. D. Peters, & R. J. McMahon (Eds.), *Social learning and systems approaches to marriage and the family* (pp. 193-216). Philadelphia, PA: Brunner/Mazel.
- Matas, L., Arend, R. A., & Sroufe, L. A. (1978). Continuity of adaptation in the second year: The relationship between quality of attachment and later competence. *Child Development, 49*, 547-556. doi:10.2307/1128221
- Matthews, L. S., Conger, R. D., & Wickrama, K. A. S. (1997). Work-family conflict and marital quality: Mediating processes. *Social Psychology Quarterly, 59*, 62-79. doi:10.2307/2787119
- McBride, B. A., & Mills, G. (1993). A comparison of mother and father involvement with their preschool age children. *Early Childhood Research Quarterly, 8*, 457-477. doi:10.1016/S0885-2006(05)80080-8
- McCurdy, K. (2005). The influence of support and stress on maternal attitudes, *Child Abuse & Neglect, 29*, 251-268. doi:10.1016/j.chiabu.2004.12.007
- McLoyd, S. D. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185. doi:10.1037/0003-066X.53.2.185
- McNally, S., Eisenberg, S., & Harris, J. D. (1991). Consistency and change in maternal child-rearing practices and values: A longitudinal study. *Child Development, 61*, 311-346. doi:10.2307/1130714

Murry, V. M., Harrell, A. W., Brody, G. H., Chen, Y-F., Simons, R. L., Black, A. R.,

Cutrona, C. E., & Gibbons, F. X. (2008). Long-term effects of stressors on relationship well-being and parenting among rural African American women.

Family Relations, 57, 117-127. doi:10.1111/j.1741-3729.2008.00488.x

Osborne, L. N., & Fincham, F. D. (1996). Marital conflict, parent-child relationships,

and child adjustment: Does gender matter? *Merrill-Palmer Quarterly*, 42, 48-75.

Pearlin, L. I. (1989). The sociological study of stress. *Journal of Health and Social*

Behavior, 30, 241-256. doi:10.2307/2136956

Peterson, J., & Hawley, D. R. (1998). Effects of stressors on parenting attitudes and

family functioning in a primary prevention program. *Family Relations*, 47, 221-227. doi:10.2307/584970

Pianta, R. (1986). *The longitudinal effects of maternal life stress on the developmental*

outcomes of first grade children in a high risk sample. (Unpublished Doctoral Dissertation). University of Minnesota, Minneapolis, Minnesota.

Pianta, R. C., & Egeland, B. (1990). Life stress and parenting outcomes in a

disadvantaged sample: Results of the mother-child interaction project. *Journal of*

Clinical Child Psychology, 19, 329-336. doi:10.1207/s15374424jccp1904_4

- Piotrkowski, C. S., & Katz, M. H. (1983). Work experience and family relations among working-class and lower-middle-class families. *Research in the Interweave of Social Roles: Jobs and Families*, 3, 187-200.
- R Development Core Team. (2010). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL <http://www.R-project.org>.
- Ragozin, A. S., Basham, R. B., Crnic, K. A., Greenberg, M. T., & Robinson, N. M. (1982). Effects of maternal age on parenting role. *Developmental Psychology*, 18, 627-634. doi:10.1037/0012-1649.18.4.627
- Räikkönen, K., Pesonen, A., Heinonen, K., Komsu, N., Järvenpää, A., & Strandberg, T. E. (2006). Stressed parents: A dyadic perspective on perceived infant temperament. *Infant and Child Development*, 15, 75-87. doi:10.1002/icd.431
- Reis, H. T., Collins, W. A., & Berscheid, E. (2000). The relationship context of human behavior and development. *Psychological Bulletin*, 126, 844-872. doi:10.1037/0033-2909.126.6.844
- Repetti, R. L. (1987). Linkages between work and family roles. In S. Oskamp (Ed.), *Applied social psychology annual: Family processes and problems* (pp. 98-127). Beverly Hills: Sage.

- Repetti, R. L., & Wood, J. (1997). Effects of daily stress at work on mothers' interactions with preschoolers. *Journal of Family Psychology, 11*, 90-108. doi:10.1037/0893-3200.11.1.90
- Roberts, G. C., Block, J. H., & Block, J. (1984). Continuities and change in parents' child-rearing practices. *Child Development, 55*, 586-597. doi:10.2307/1129970
- Schoon, I., & Parsons, S. (2002). Competence in the face of adversity: The influence of early family environment and long-term consequences. *Children and Society, 16*, 260-272. doi:10.1002/chi.713
- Sears, H. A., & Galambos, N. L. (1992). Women's work conditions and marital adjustment in two earner couples: A structural model. *Journal of Marriage and the Family, 54*, 789-797. doi:10.2307/353161
- Simons, R. L., Beaman, J., Conger, R. D., & Chao, W. (1993). Stress, support and antisocial behavior trait as determinants of emotional well-being and parenting practices among single mothers. *Journal of Marriage and the Family, 55*, 385-398. doi:10.2307/352809
- Simons, R. L., Lorenz, F. O., Conger, R. D., & Wu, C. I. (1992). Support from spouse as mediator and moderator of the disruptive influence of economic strain on parenting. *Child Development, 63*, 1282-1301. doi:10.1111/1467-8624.ep9301210173

Simons, R. L., Whitbeck, L. B., Conger, R. D., & Melby, J. N. (1990). Husband and wife differences in determinants of parenting: A social learning/exchange model of parenting behavior. *Journal of Marriage and the Family*, *52*, 375-392.

doi:10.2307/353033

Sroufe, J. (1991). Assessment of parent-adolescent relationships: Implications for adolescent development. *Journal of Family Psychology*, *5*, 21-45.

doi:10.1037/0893-3200.5.1.21

Sroufe, L. A. (1979). The coherence of individual development: Early care, attachment, and subsequent developmental issues. *American Psychologist*, *34*, 834-841.

doi:10.1037/0003-066X.34.10.834

Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, W. A. (2005). *The development of the person: The Minnesota study of risk and adaptation from birth to adulthood*.

New York: The Guilford Press.

Tamis-LeMonda, C. S., & Bornstein, M. H. (1991). Individual variation, correspondence, stability, and change in mother and toddler play. *Infant Behavior and Development*, *14*, 143-162. doi:10.1016/0163-6383(91)90002-A

Turner, R. J., Wheaton, B., & Lloyd, D. A. (1995). The epidemiology of social stress. *American Sociological Review*, *60*, 104-125. doi:10.2307/2096348

- Valiente, C., Lemery-Chalfant, K., & Reiser, M. (2007). Pathways to problem behaviors: Chaotic homes, parent and child effortful control, and parenting. *Social Development, 16*, 249-267. doi:10.1111/j.1467-9507.2007.00383.x
- Volling, B. L., & Belsky, J. (1991). Multiple determinants of father involvement during infancy in dual-earner and single-earner families. *Journal of Marriage and the Family, 53*, 461-474. doi:10.2307/352912
- Voydanoff, P., & Donnelly, B. W. (1988). Economic distress, family coping, and quality of family life. In P. Voydanoff, & L. C. Majka (Eds.), *Families and economic distress* (pp. 97-116). Los Angeles, CA: Sage.
- Webster-Stratton, C. (1988). Mothers' and fathers' perceptions of child deviance: Roles of parent and child behaviors and parent adjustment. *Journal of Consulting and Clinical Psychology, 56*, 909-915. doi:10.1037/0022-006X.56.6.909
- Webster-Stratton, C. (1990). Stress: A potential disruptor of parent perceptions and family interactions. *Journal of Clinical Child & Adolescent Psychology, 19*, 302-312. doi:10.1207/s15374424jccp1904_2
- Webster-Stratton, C., & Hammond, M. (1999). Marital conflict management skills, parenting style, and early-onset conduct problems: Processes and pathways. *Journal of Child Psychology and Psychiatry, 40*, 917-927. doi:10.1111/1469-7610.00509

Wechsler, D. (1955). *Wechsler adult intelligence scale*. New York: Psychological Corporation.

Westman, M. (2001). Stress and strain crossover. *Human Relations, 54*, 717-751.

Wothke, W., & Arbuckle, J. L. (1996). *Full-information missing data analysis with AMOS*. SPSS White Paper.

Yates, T. M., Obradovic, J., & Egeland, B. (2010). Transactional relations across contextual strain, parenting quality, and early childhood regulation and adaptation in a high-risk sample. *Development and Psychopathology, 22*, 539-555.
doi:10.1017/S095457941000026X

Zaslow, M., & Hayes, C. (1986). Sex differences in children's responses to psychosocial stress: Toward a cross-cultural context analysis. In M. E. Lamb, A. L. Brown & B. Rogoff (Eds.), *Advances in developmental psychology* (pp. 285-338). Hillsdale, NJ: Erlbaum.

Appendix 1: Tables

Table 1

Inter-rater Reliabilities (Intraclass Correlation) for Parenting Variables Across Assessments

	24-month assessment	42-month assessment	13-year assessment
	N =62	N = 87	N=158
Supportive presence	$\alpha = .72$	$\alpha = .87$	$\alpha = .86$
Quality of Assistance	$\alpha = .61$	$\alpha = .87$	$\alpha = .83$
Hostility	$\alpha = .57$	$\alpha = .80$	$\alpha = .85$

Table 2

Parenting Quality Factor Loadings by Assessment Period

Parenting Construct	Assessment Period		
	24 months	42 months	13 years
Supportive Presence	.938	.924	.932
Quality of Assistance	.916	.890	.864
Hostility (reverse coded)	.714	.818	.730

Table 3

Descriptive Statistics for Raw Variables of Interest

			Male	Female		
	N males/ N Females	Mean (SD)	Mean (SD)	Mean (SD)	<i>t</i> -test	<i>p</i> =
24 m. parenting factor	86/68	12.09 (3.19)	12.02 (3.06)	12.18 (3.38)	<i>t</i> (152) = -.317	.752
42 m. parenting factor	89/73	13.57 (2.95)	13.73 (2.83)	13.38 (3.11)	<i>t</i> (160) = .746	.457
13 yr. parenting factor	54/71	11.18 (2.81)	11.66 (2.74)	10.61 (2.80)	<i>t</i> (153) = 2.334	.021*
15 m. tension composite	91/72	3.02 (1.29)	2.84 (1.21)	3.23 (1.36)	<i>t</i> (148) = -1.847	.067
36 m. tension composite	90/71	3.25 (1.28)	3.09 (1.23)	3.46 (1.33)	<i>t</i> (148) = -1.771	.079
59 m. tension composite	88/67	3.23 (1.22)	3.19 (1.23)	3.27 (1.32)	<i>t</i> (140) = -.373	.709
15 m. life stress composite	101/80	4.93 (3.01)	4.72 (2.58)	5.19 (3.47)	<i>t</i> (165) = -.997	.320
36 m. life stress composite	103/80	6.75 (3.62)	6.81 (3.54)	6.67 (3.75)	<i>t</i> (166) = .245	.807
114 m. life stress composite	100/78	6.89 (4.05)	6.72 (3.98)	7.11 (4.16)	<i>t</i> (161) = -.615	.540

* $p < .05$

Table 4

Life Events Inventory Items Included Across Assessments

Item number*	Question
1	Unemployment
3	Trouble with welfare
4	Trouble with superiors at work
5	Moving to a different house
6	Purchasing own home (taking out mortgage)
7	Quarrel with neighbors
8	Income decreases substantially
9	Getting into debt beyond means of repayment
10	Money shortages
12	Conviction of minor violations
13	Jail sentence of immediate family member
16	Suicide or suicide attempt of immediate family member
17	Death of immediate family member or close friend
18	Immediate family member seriously ill
19	Gain a new family (immediate) family member
21	Serious restriction of social life
22	Period of homelessness
23	Serious physical illness requiring hospitalization
24	Prolonged ill health of self or immediate family member
25	Miscarriage
26	Abortion
27	Pregnancy
30	People (other than partner) moving in or out of residence
33	Increase in number of arguments with close friends
34	Trouble with relatives

* Corresponding to the version of the Life Events Inventory displayed in Appendix 2

Table 5

Life Events Inventory Items Not Included in Analyses

Item not repeated or coded similarly across time		
Item number	Question	Periods not assessed
2*	Job changes	12m., 18m.
11*	Arguments about how money is spent	12m., 18m.
20*	Partner intoxicated frequently	12m., 18m.
32*	Frightened by partner	12m., 18m.
38*	Custody or visitation problems	12m., 18m.
39*	Separation of mother and child	12m., 18m.
4 ^³	New Job in same line of work	30m., 42m., G3, G6
5 ^³	New job in different line of work	30m., 42m., G3, G6
6 ^³	Change in hours of or conditions at work	30m., 42m., G3, G6
7 ^³	Promotion or change in responsibilities at work	30m., 42m., G3, G6
24 ^³	Problems related to drugs or alcohol	30m., 42m., G3, G6
29 ^³	Sudden/serious impairment of vision or hearing	30m., 42m., G3, G6
37 ^³	Increase in number of arguments with relatives	30m., 42m., G3, G6
40 ^⁴	Victimization of immediate family member	12m., 18m., 30m., 42m., G3
Items relating to romantic relationship quality		
Item number	Question	
14*	Involvement in a physical fight	
15*	Immediate family member drinking heavily	
28*	Marriage	
29*	Partner moves in/out of residence	
31*	Increase in number of arguments with partner	
35*	Marital separation or break-up	
36*	Divorce	
37*	Marital/partnership reconciliation	

* Corresponding to the version of the Life Events Inventory displayed in Appendix 2

^³ Corresponding to the 12 month assessment

^⁴ Corresponding to the grade-6 assessment

Table 6

Correlations Between all Raw Variables

	1	2	3	4	5	6	7	8
1 24 m. par. factor								
2 42 m. par. factor	.461**							
3 13 yr. par. factor	.270**	.406**						
4 Inf. relat. tens.	-.053	-.196*	-.202*					
5 Tod. relat. tens.	-.057	-.219**	-.239**	.541**				
6 Child relat. tens	-.042	-.086	-.133	.469**	.652**			
7 Infancy LES	-.086	-.142	-.176*	.324**	.276**	.350**		
8 Tod. LES	-.088	.045	-.057	.286**	.359**	.267**	.364**	
9 Child. LES	-.114	-.151	-.117	.217**	.198*	.140	.284**	.293**

* $p < .05$, ** $p < .01$, *** $p < .000$

Table 7

Growth Curve Fixed and Random Effects for All Variables

	Parenting	Relationship Tension	Life Stress
Fixed effects		Estimate (SE)	
Intercept (β_0)	12.895(.220)***	3.082(.098)***	5.60(.221)***
Slope (β_{10})	-.012 (.002)***	.004(.002), <i>ns</i>	.015(.220)***
Random Effects		Likelihood Ratio Test (LRT)	
Intercept ($\beta_{0(i)}$)	$\chi^2(2)= 44.157$ ***	$\chi^2(2)= 99.048$ ***	$\chi^2(2)= 27.905$ ***
Slope ($\beta_{1(i)0(i)}$)	$\chi^2(2)= 3.128$, <i>ns</i>	$\chi^2(2)= .179$, <i>ns</i>	$\chi^2(2)= 7.2922$ *

* $p < .05$, ** $p < .01$, *** $p < .000$

Table 8

Relationship Stress Factor Loadings

15 m. Relationship Stress		36 m. Relationship Stress		59 m. Relationship Stress	
12 m. Rel. Tens.	.841	30 m. Rel. Tens.	.811	54 m. Rel. Tens.	.800
18 m. Rel. Tens.	.878	42 m. Rel. Tens.	.857	64 m. Rel. Tens.	.842
12 m. LES Rel. items	.736	30 m. LES Rel. items	.732	54 m. LES Rel. items	.726
18 m. LES Rel. items	.778	42 m. LES Rel. items	.818	64 m. LES Rel. items	.711

Table 9

Standardized Life Stress and Relationship Tension Interaction Model Path Estimates for Boys and Girls

			Boys		Girls	
			β	<i>p</i> -value	β	<i>p</i> -value
Relationship tension slope 15-36 m.	→	Relationship tension slope 36-59 m.	-.387	.000	-.332	.008
Relationship tension slope 15-36 m.	→	Parenting slope 24-42 m.	-.062	<i>ns</i>	.034	<i>ns</i>
Relationship tension slope 15-36 m.	→	Parenting slope 42-156 m.	.005	<i>ns</i>	.044	<i>ns</i>
Relationship tension slope 36-59 m.	→	Parenting slope 42-156 m.	-.035	<i>ns</i>	.187	<i>ns</i>
Parenting slope 24-42 m.	→	Parenting slope 42-156 m.	-.217	.061	-.501	.000
Life Stress Slope 15-36 m.	→	Life stress slope 36-114 m.	-.599	.000	-.403	.000
Life Stress Slope 15-36 m.	→	Parenting slope 24-42 m.	.307	.000	.000	<i>ns</i>
Life Stress Slope 15-36 m.	→	Parenting slope 42-156 m.	-.136	<i>ns</i>	.125	<i>ns</i>
Life stress slope 36-114 m.	→	Parenting slope 42-156 m.	.034	<i>ns</i>	.165	<i>ns</i>
Stress slope X tension slope T1-T2	→	Parenting slope 24-42 m.	-.152	.077	.172	<i>ns</i>
Stress slope X tension slope T1-T2	→	Parenting slope 42-156 m.	.205	.085	.143	<i>ns</i>
Stress slope X tension slope T2-T3	→	Parenting slope 42-156 m.	-.180	<i>ns</i>	.132	<i>ns</i>

Table 10

*Unstandardized Life Stress and Relationship Tension Differences Interaction Model
Path Estimates for Boys*

			Boys	
	Path		B	<i>p</i> -value
Relationship tension slope 15-36 m.	→	Relationship tension slope 36-59 m.	-.300	.000
Relationship tension slope 15-36 m.	→	Parenting slope 24-42 m.	-.142	<i>ns</i>
Relationship tension slope 15-36 m.	→	Parenting slope 42-156 m.	-.012	<i>ns</i>
Relationship tension slope 36-59 m.	→	Parenting slope 42-156 m.	-.107	<i>ns</i>
Parenting slope 24-42 m.	→	Parenting slope 42-156 m.	-.226	.061
Life Stress Slope 15-36 m.	→	Life stress slope 36-114 m.	-.675	.000
Life Stress Slope 15-36 m.	→	Parenting slope 24-42 m.	-.119	<i>ns</i>
Life Stress Slope 15-36 m.	→	Parenting slope 42-156 m.	-.094	<i>ns</i>
Life stress slope 36-114 m.	→	Parenting slope 42-156 m.	.025	<i>ns</i>
Stress slope X tension slope T1-T2	→	Parenting slope 24-42 m.	-.085	.077
Stress slope X tension slope T1-T2	→	Parenting slope 42-156 m.	.119	.085
Stress slope X tension slope T2-T3	→	Parenting slope 42-156 m.	-.101	<i>ns</i>

Table 11

Difference Scores Descriptive Statistics for Boys

	N	Mean	Std. Deviation	Minimum	Maximum
Δ Parenting T1-T2	82	1.627	2.952	-7.10	10.07
Δ Parenting T2-T3	80	-2.096	3.162	-8.00	6.14
Δ Relat. Tension T1-T2	76	.250	1.340	-3.00	4.00
Δ Relat. Tension T2-T3	73	-.055	1.039	-3.00	2.00
Δ Life Stress T1-T2	92	2.060	3.657	-5.00	13.50
Δ Life Stress T2-T3	90	-.156	4.412	-9.00	12.00

Table 12

Standardized Life Stress and Relationship Stress Interaction Model Path Estimates for Boys and Girls

Path			Boys		Girls	
			β	<i>p</i> -value	β	<i>p</i> -value
Relationship stress 15m.	→	Relationship stress slope 36-59 m.	-.367	.016	-.046	<i>ns</i>
Relationship stress 15m.	→	Parenting slope 24-42 m.	-.134	<i>ns</i>	-.218	.055
Relationship stress 15m.	→	Parenting slope 42-156 m.	.294	.024	.122	<i>ns</i>
Relationship stress slope 36-59 m.	→	Parenting slope 42-156 m.	-.008	<i>ns</i>	-.247	.043
Parenting slope 24-42 m.	→	Parenting slope 42-156 m.	-.162	<i>ns</i>	-.411	.000
Life Stress Slope 15-36 m.	→	Life stress slope 36-114 m.	-.558	.000	-.403	.000
Life Stress Slope 15-36 m.	→	Parenting slope 24-42 m.	.121	<i>ns</i>	-.005	<i>ns</i>
Life Stress Slope 15-36 m.	→	Parenting slope 42-156 m.	.133	<i>ns</i>	.285	.006
Life stress slope 36-114 m.	→	Parenting slope 42-156 m.	.089	<i>ns</i>	.176	.087
Life Stress slopeT1-T2 X Relationship stress 15m.	→	Parenting slope 24-42 m.	.259	.006	.092	<i>ns</i>
Life Stress slopeT1-T2 X Relationship stress 15m.	→	Parenting slope 42-156 m.	-.166	<i>ns</i>	-.376	.004
Life Stress slope X Rel. Stress slope T2-T3	→	Parenting slope 42-156 m.	-.264	.069	.157	<i>ns</i>

Table 13

Difference Scores Descriptive Statistics with Relationship Stress for Boys

	N	Mean	SD	Minimum	Maximum
Δ Parenting T1-T2	82	1.627	2.952	-7.10	10.07
Δ Parenting T2-T3	80	-2.096	3.162	-8.00	6.14
Relat. Stress 15 m.	55	7.000	4.192	1.72	20.01
Δ Relat. Stress T2-T3	46	-.711	4.727	-12.84	10.53
Δ Life Stress T1-T2	92	2.060	3.657	-5.00	13.50
Δ Life Stress T2-T3	90	-.156	4.412	-9.00	12.00

Table 14

Difference Scores Descriptive Statistics with Relationship Stress for Girls

	N	Mean	SD	Minimum	Maximum
Δ Parenting T1-T2	66	1.233	3.358	-6.30	11.50
Δ Parenting T2-T3	69	-2.801	3.103	-8.07	6.51
Relat. Stress 15 m.	50	8.319	4.790	1.72	20.01
Δ Relat. Stress T2-T3	35	-14.53	12.44	-.5983	5.564
Δ Life Stress T1-T2	75	.472	4.807	-9.50	13.00
Δ Life Stress T2-T3	73	.4726	4.807	-12.50	15.00

Appendix 2: Figures

Figure 1. Parenting Quality and Relationship Tension Cross-Domain Growth Curve Model

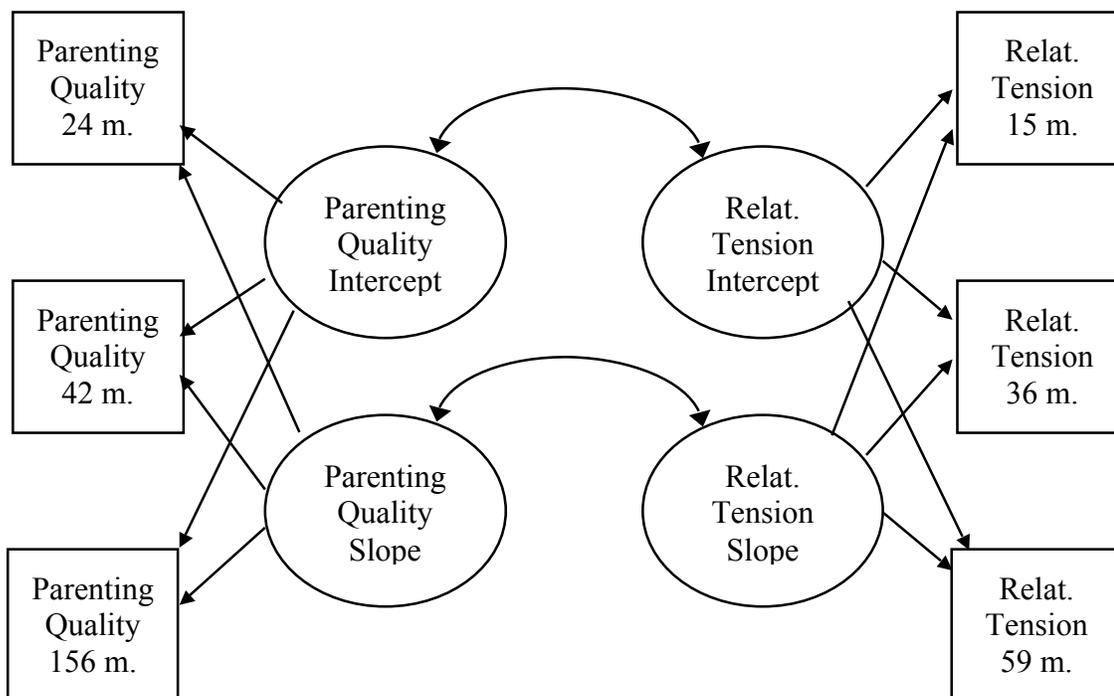


Figure 2. Parenting Quality and Life-Stress Cross-Domain Growth Curve Model

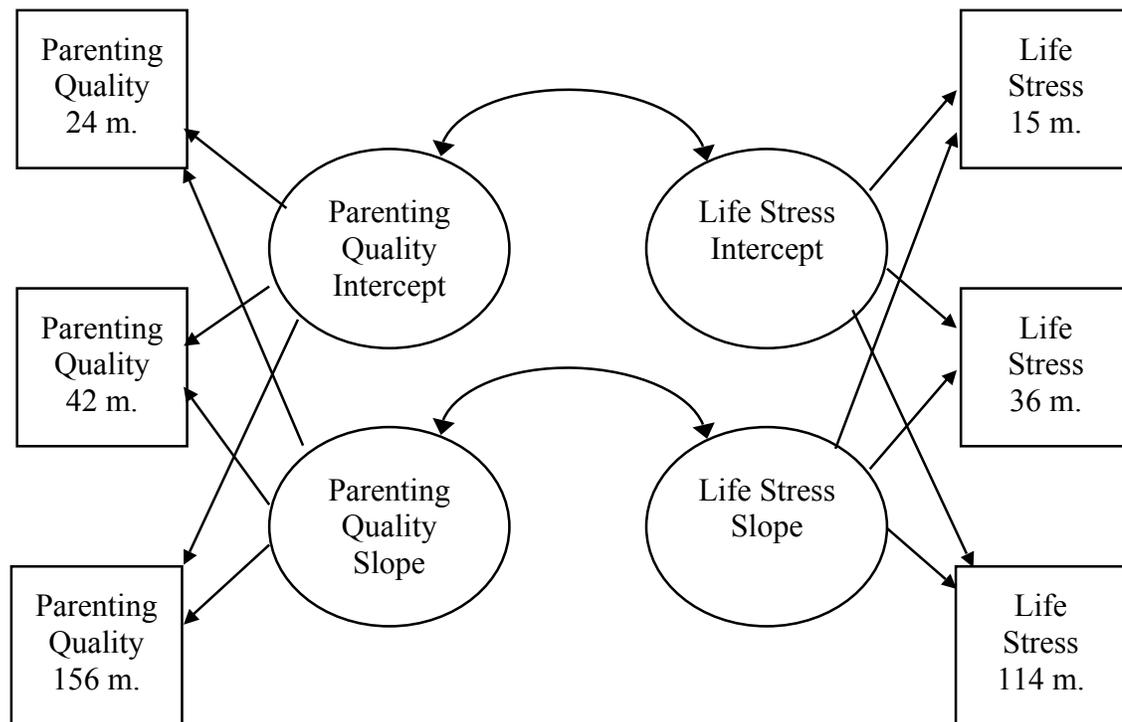


Figure 3: Parenting Quality Estimated Linear Growth Model and Observed Data

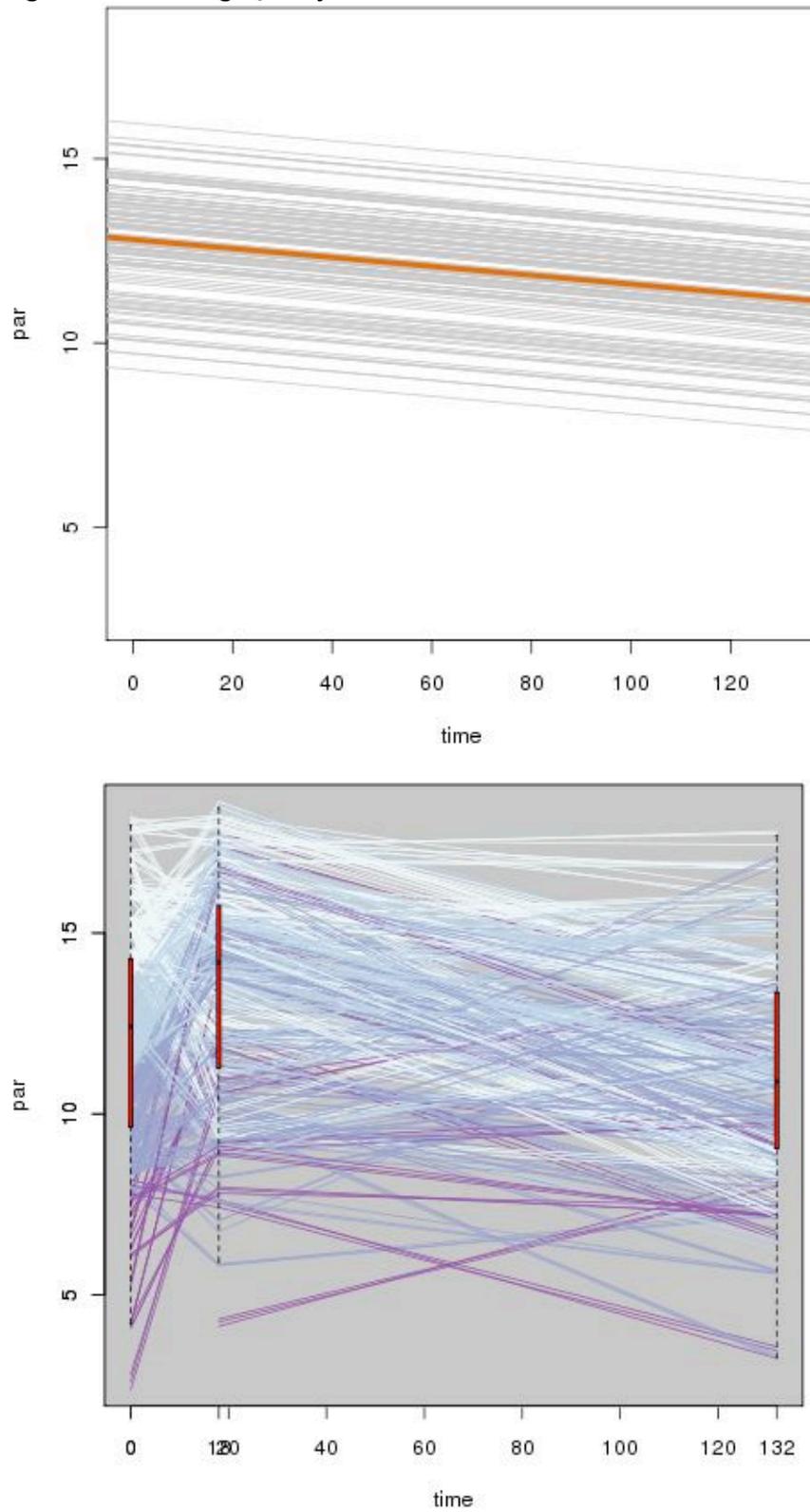


Figure 4: Relationship Tension Estimated Linear Growth Model and Observed Data

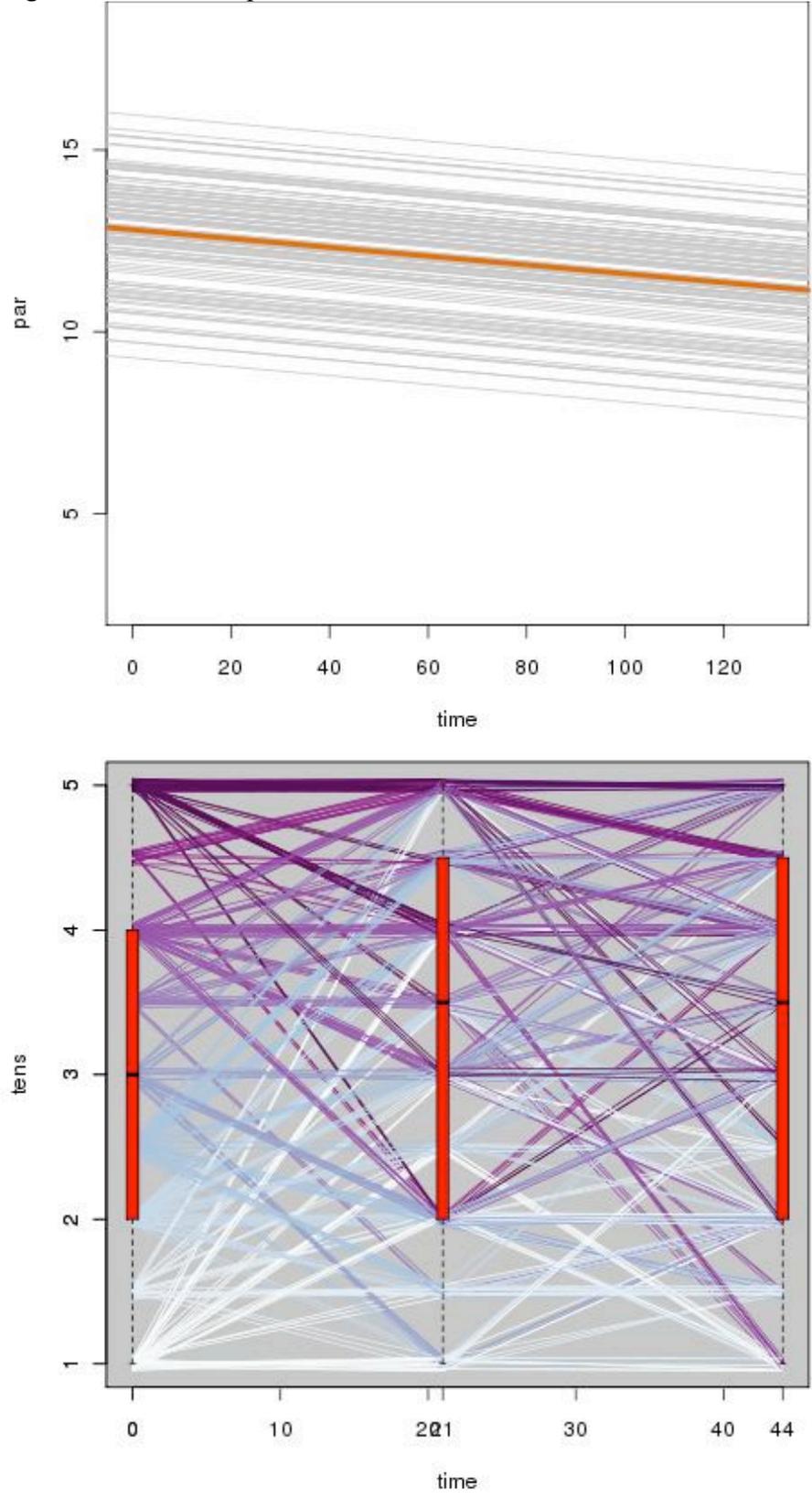


Figure 5: Life Stress Estimated Linear Growth Model and Observed Data

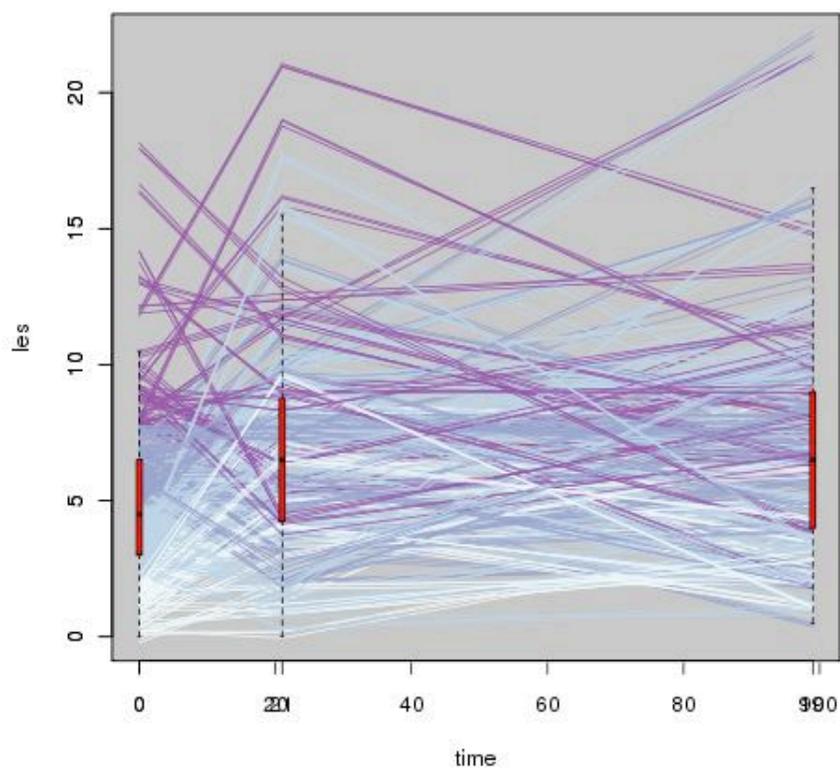
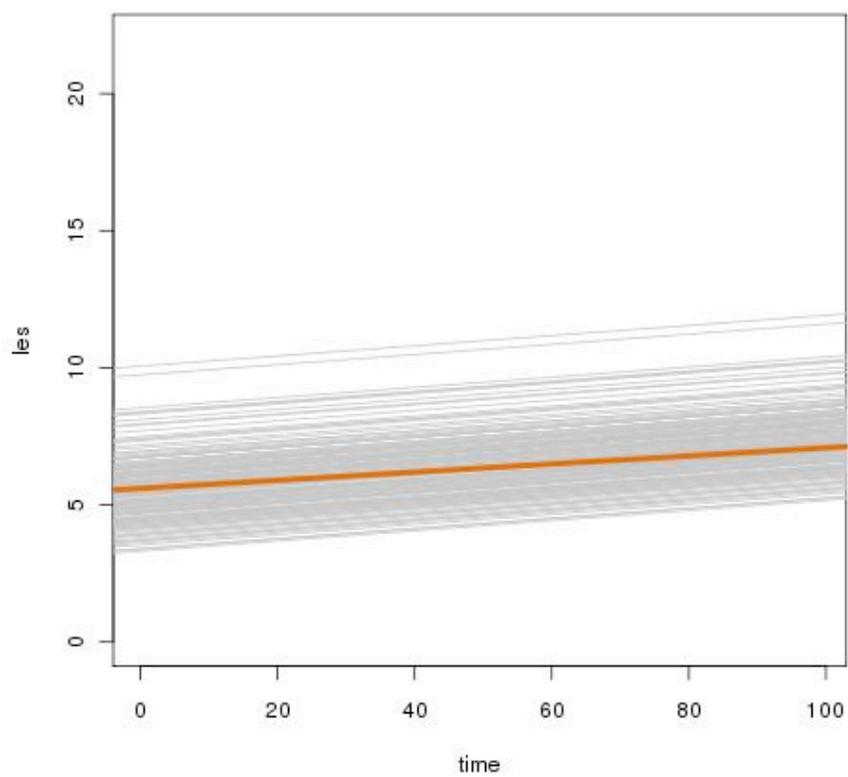


Figure 6: Relationship Tension Slopes Predicting Parenting Slopes Across Time

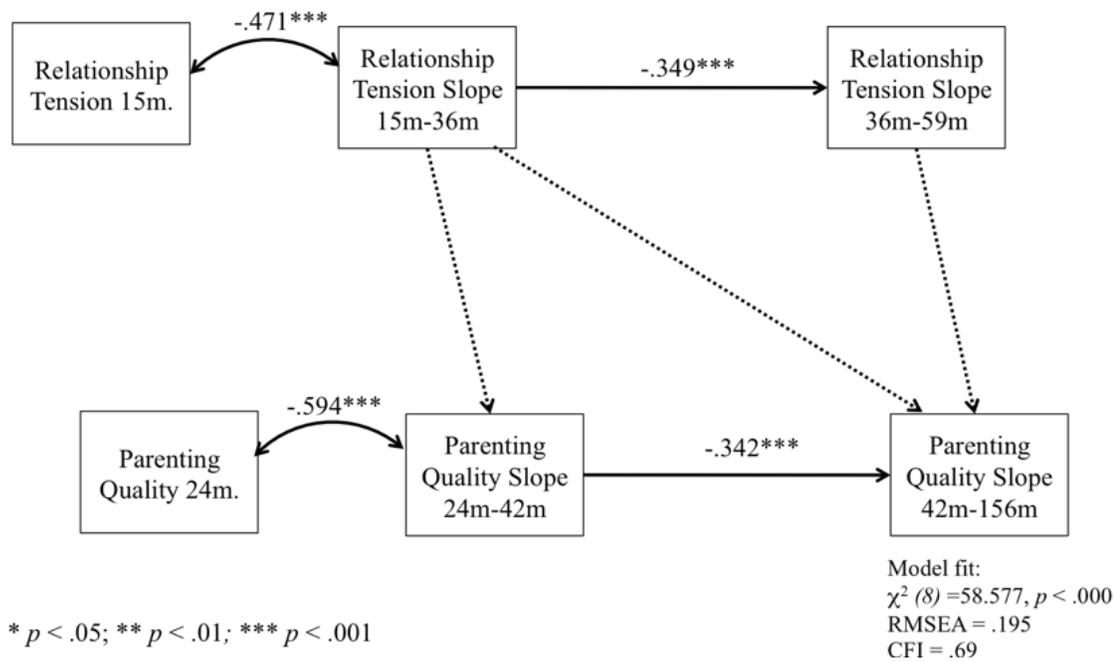


Figure 7: Life Stress Slopes Predicting Parenting Slopes Across Time

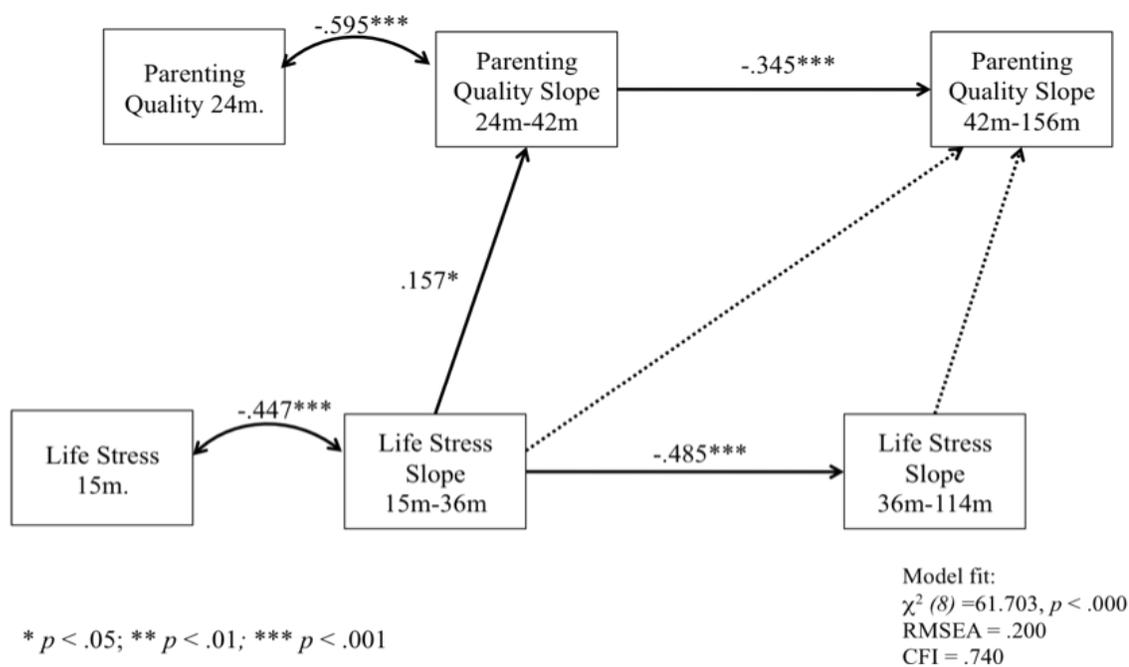
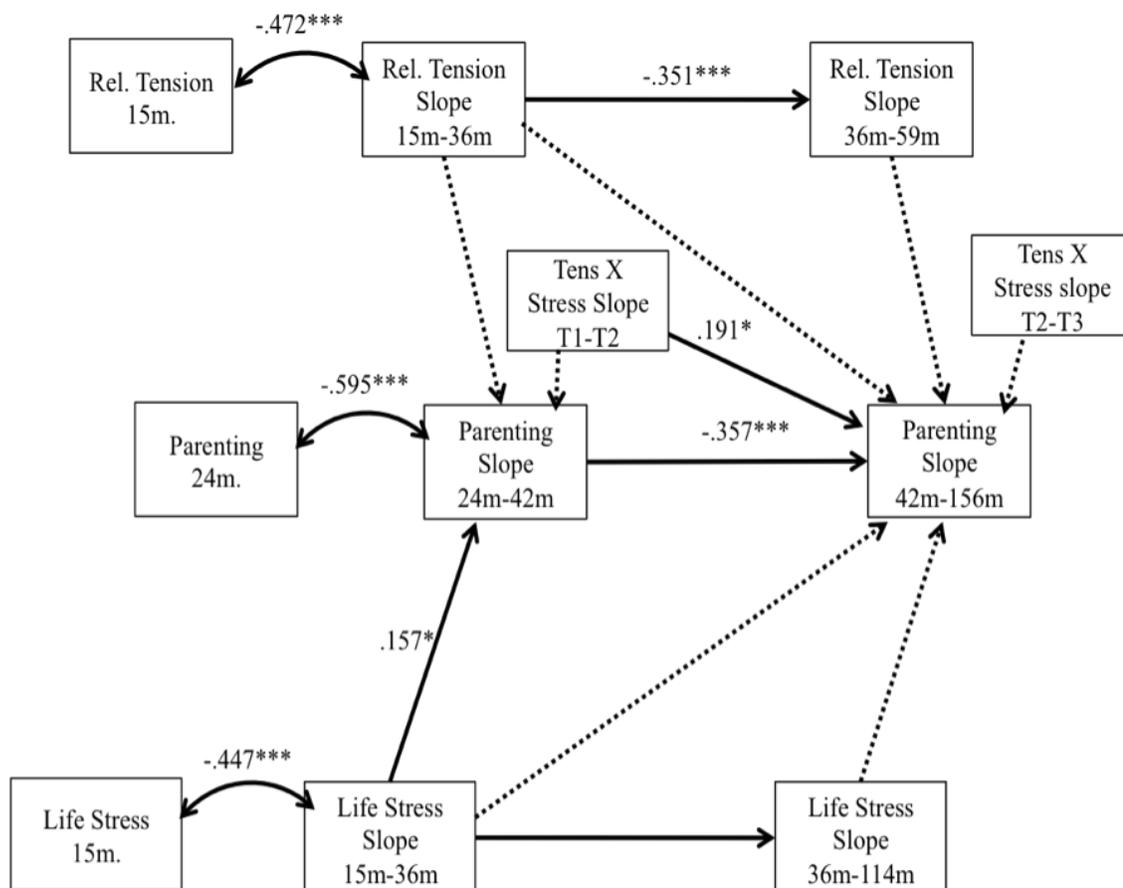


Figure 8: Relationship Tension, Parenting Quality and Life Stress, with Life Stress x Relationship Tension Interactions



* $p < .05$; ** $p < .01$; *** $p < .001$

Model fit:
 $\chi^2 (39) = 183.103$,
 $p < .000$
 RMSEA = .149
 CFI = .588

Figure 9: Interaction Between Romantic Relationship Tension and Life Stress Change from T1-T2 Predicting Change in Parenting T1-T2 for Boys

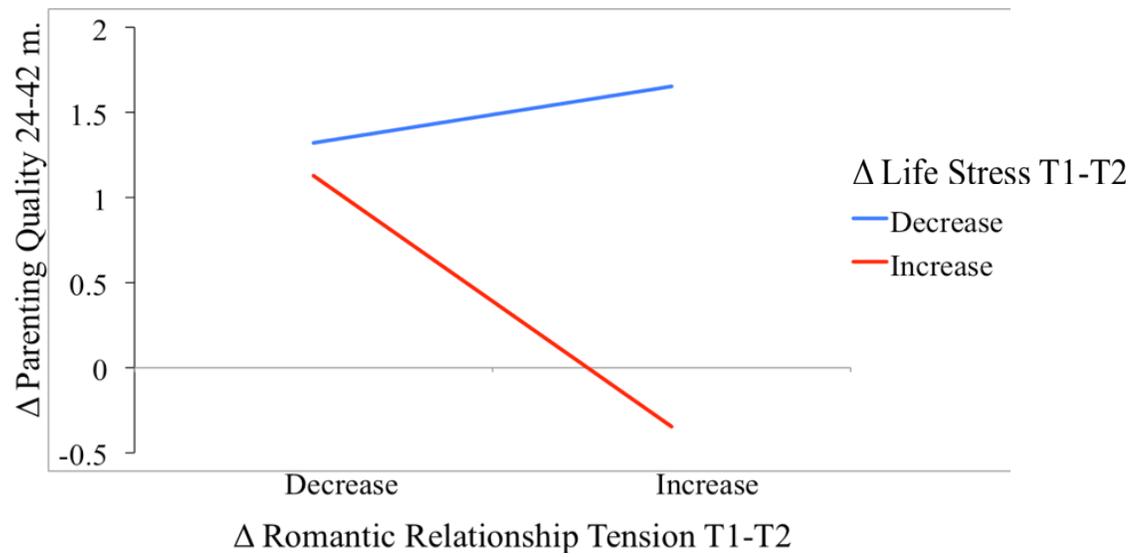


Figure 10: Interaction Between Romantic Relationship Tension and Life Stress Change from T1-T2 Predicting Change in Parenting T2-T3 for Boys

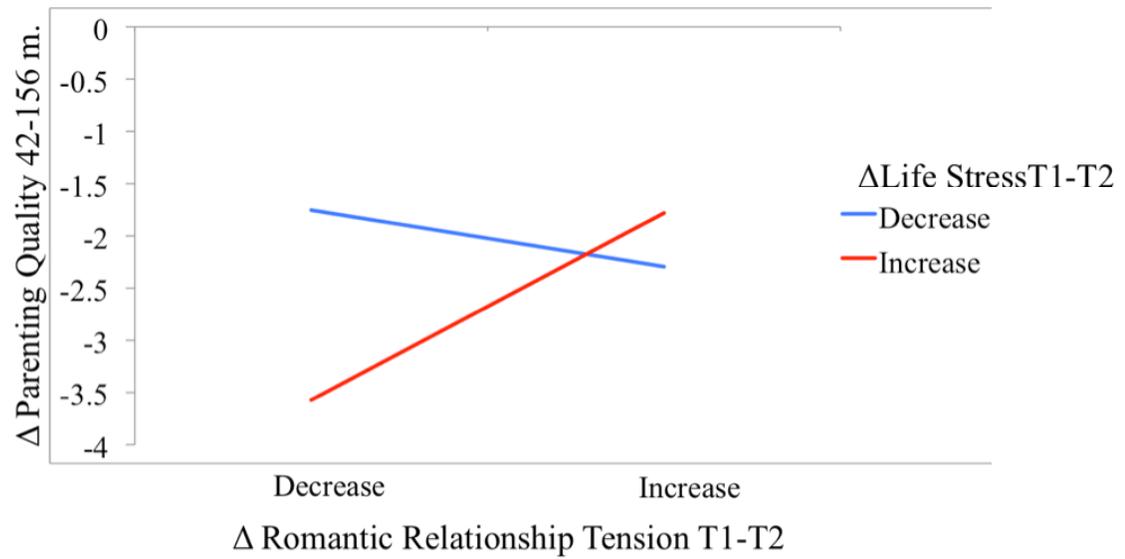


Figure 11: Romantic Relationship Stress at 15 m. With Life Stress Change from T1-T2 Predicting Change in Parenting T1-T2 for Boys

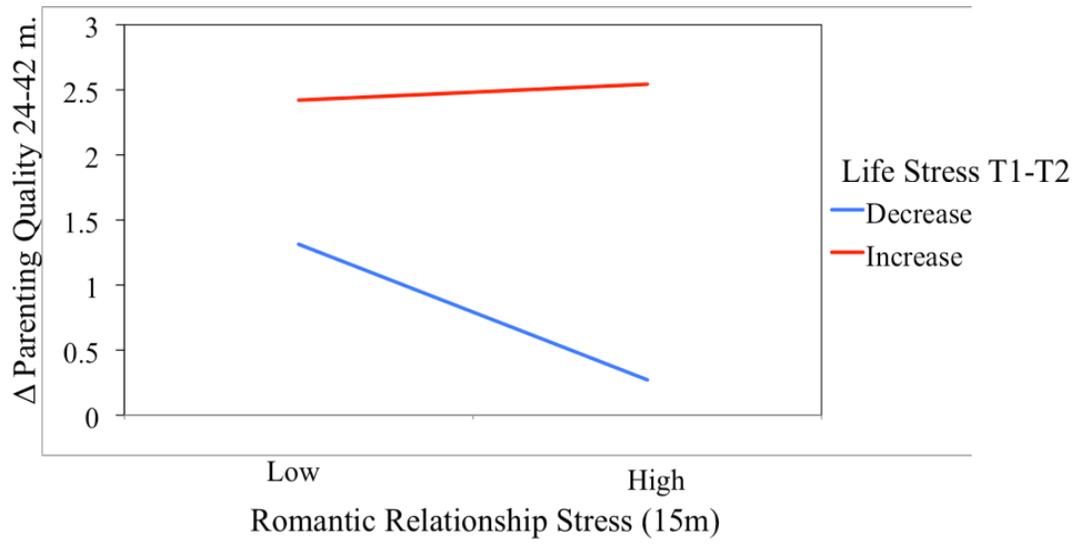


Figure 12: Romantic Relationship Stress with Life Stress Change from T2-T3 Predicting Change in Parenting T2-T3 for Boys

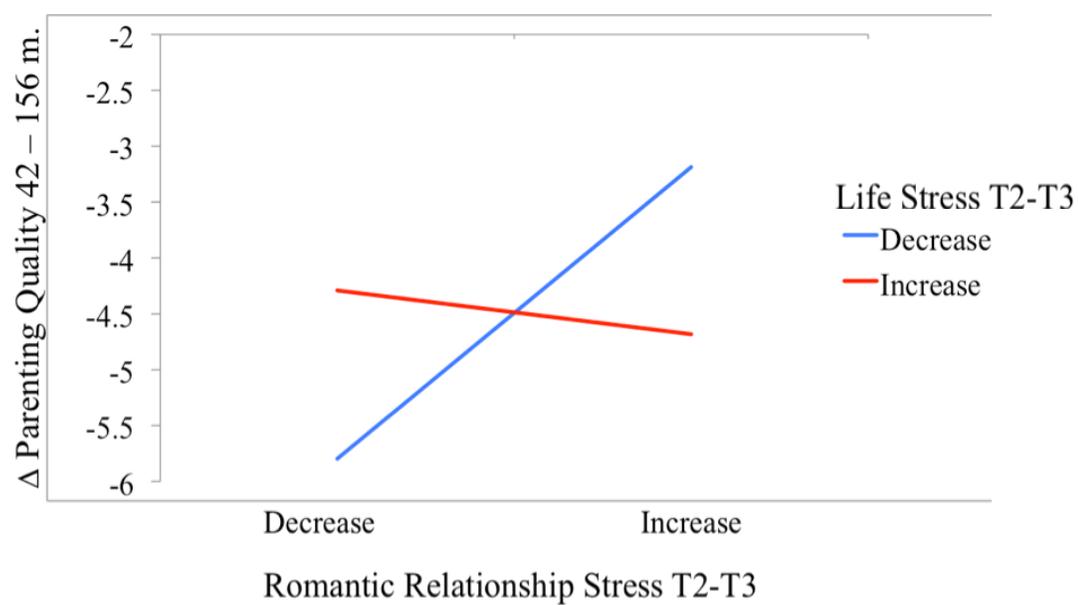
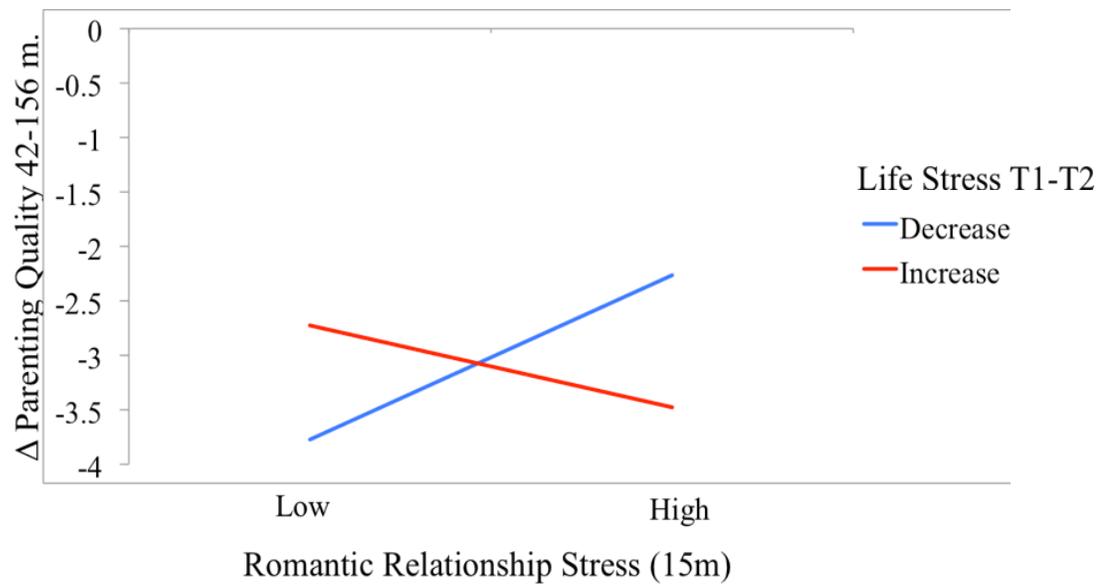


Figure 13: Romantic Relationship Stress at 15 m. and Life Stress Change from T1-T2 Predicting Change in Parenting T2-T3 for Girls



Appendix 3: Parenting Quality Scales from 24-month, 42-month, and 13-year Assessments

24 month Parenting Scales

Supportive Presence

Major Criteria:

- 1) Secure Base – helping the child feel comfortable with the task
- 2) Mother Involvement – attentiveness to child and task

Subcriteria: (components of major criteria)

- a) Focusing the child on the task when needed
- b) Tuning the child in to reinforcing aspects of the task as needed
- c) Mood setting for a problem solving situation as needed
- d) Helping the child achieve a sense of having solved the problem him/herself
- e) Sharing in the joy of solution
- f) Encouraging and supporting his/her efforts
- g) Physical presence when needed
- h) Anticipating frustration and taking action to help the situation
- i) Mother staying calm

Secure Base for Exploration

This concept is directly related to the ethological concept of the caretaker's providing a secure base from which the infant can explore his/her environment. In this case, however, the concept is carried forward in time to the mother-toddler dyad.

The subcriteria, which are of major importance in scoring "secure base", include the following: staying calm, mood setting, tuning, physical presence, and anticipating frustration. Encouraging and supporting efforts and helping the child achieve a sense of solving the problem him/herself are important as well. A mother provides a secure base for her toddler by setting a calm and confident tone for the problem-solving situation. She is comfortable in the situation and therefore projects a sense of confidence in a positive outcome. She accomplishes this two ways, by remaining calm, and by mood-setting. The mother approaches the tool with obvious interest, or better yet, with enthusiasm. She makes certain that the child realizes there is a problem to be solved. She indicates to the child that working on the problem can be rewarding. She may also indicate to the child that she is available to work cooperatively with him/her if it becomes necessary, but encourages initial autonomous work to help the child achieve a sense of solving the problem him/herself. These aspects of secure base serve to motivate and reassure the child of a positive experience and outcome.

While the child is working, the mother lets her child know that she is with him/her by encouraging his/her efforts, reassuring any doubts, and by her calm, warm, and positive affect and manner. She lets her child know that she is available for help either verbally or by her physical presence. She moves closer to the child when the child gets stuck or shows signs of frustration (e.g., hesitating, demonstrating off-task behavior, incorporating repetitive actions, whining, pounding, shrugging, approaching the mother, etc.). She may move closer by leaning forward in her chair, sitting on the floor closer to the tool and her child, or by intervening physically with demonstration, if necessary. She is quick to anticipate or read the child's signs of mounting frustration, and consequently, quick to respond, thereby letting the child know that she is with him/her in the experiment.

A mother who receives a 'minimal' secure base is less clearly available to the child when help or encouragement is called for. She is less able to help the child feel safe in the unfamiliar situation and with the demands of the problems. She may help, but repeatedly tells the child that she cannot or will not solve the problem, or she refuses bids from the child. She may be very slow in moving closer to the child when the child becomes intimidated by the task, and may seem unaware that the child is becoming frustrated. The mother may not encourage or reassure the child when the child's motivation declines, or when frustration builds. It may not be clear whether she believes she can help the child solve the problem.

A mother who receives a 'no' on secure base is unavailable to the child due to her own level of frustration, inability to remain calm, her passivity, or her inability to understand the child's level of capabilities. The mother may become angry and frustrated with the child, offering no indication to the child that it is possible to reach a solution, or that it is safe to explore the tool. The mother may demand the child perform above his/her age level and expect the child to work on his/her own without encouragement.

Mother's Involvement: attentiveness to the child and the task

This criterion involves more than observation of the child by the mother. A mother who receives a 'yes' on this criterion not only attends carefully to her child's behaviors, emotional states and progress, but also is emotionally involved and responsive to the child.

The important subcriteria of involvement are: encouraging and supporting efforts, physical presence, anticipating frustration, and focusing and sharing joy. The mother watches her child working with interest and investment, as she may lean forward or approach for better observation and involvement (physical presence). She is aware of the fluctuating emotional states and responds contingently to the child's affective expression. She encourages and supports the child's efforts by responding positively when the child smiles or masters a part of the task. She becomes concerned when the child shows signs of difficulty with the task, and anticipates and/or reacts quickly to signs of frustration by assisting or increasing her level of involvement. She focuses the child if he/she loses interest through frustration and strays from the task. When the child solves the problem she shares the joy of solution by being happy with and for her child. In general, her emotional responses are contingent upon and appropriate to the child's progress and states.

The mother who receives a 'minimal' rating is interested but less actively involved with her child and his/her activities. The mother may appear somewhat passive or lethargic in her responsiveness to the child's cues. She does not seem disinterested or actively withholding with her child.

The mother who receives a 'no' is disinterested, aloof, or cold with her child. Although she may be invested in ensuring that the child solves the problem, her investment lies in the performance rather than a shared experience. She does not respond to the child's negative emotional states as signs of frustration, and may even become more demanding or withdrawn as the child's frustration increases. Or, the mother is so passive and lethargic that she is unresponsive to the child's emotional and behavioral cues. She does not seem actively disinterested, but instead seems to lack energy or motivation to be involved.

- 7- This mother meets all criteria and subcriteria. If the task is very easy for the child, he/she may not require as much support as indicated by the criteria. In this situation, it is appropriate for the mother to allow the child autonomous work. The difficulty of the task and level of comprehension and motivation of the individual child may determine how much support the mother should offer, and therefore determine how applicable the subcriteria are for the particular situation.
- 6- This mother technically meets all criteria (if applicable) but is not quite able to give the child all the support required. It may be the case that the mother is lacking slightly in emotional involvement or that she may be either a bit over supportive or over-controlling. It may also be the case that the task is

solved so quickly that it is unclear if all the subcriteria would have been met with a longer task. All subcriteria are met at least satisfactorily; however, one or two might be minimally met.

- 5- The mother's presence has a positive effect but she is not as supportive and/or involved as in higher ratings. For a rating of 5, one major criterion may be minimally met. "Secure base" must be at least marginally met, as it can never receive a 'no' on this scale point. There may be slight doubt about two or three subcriteria, or one or two subcriteria may not be met as long as they do not prevent the major criteria from being at least minimally met.
- 4- This mother is not non-supportive, but the degree of support is not obvious or striking. She is, however, within the intermediate range of supportiveness. It may that one major criterion is not met while the other is adequately fulfilled, or one major criterion and one subcriterion are not met, or four subcriteria are not met resulting in one marginally met major criteria. Although the mother adds little to her child's involvement in the task, when the child directly requests aid or support, she gives it. The mother may be more directive than supportive, and try to get the child to follow her instructions rather than supporting the child's efforts. Or she may lack goal-direction due to her lack of motivation or uncertainty in the situation. In this case, the child's motivation may decline.
- 3- The mother is lacking in areas of both major criteria and could be characterized as supportive in only a weak manner. She does have some relative strengths and may be able to fulfill 2-4 subcriteria. It may also be the case that one major criterion is minimal and at least four subcriteria are not met.
- 2- Most subcriteria and both major criteria are not met. The mother's support is relatively absent, although there is no distinct negative quality characterizing the interaction. The mother could not be characterized as "angry" or "cold" towards the child, but she shows very few or no strengths.
- 1- All criteria and subcriteria are not met, or there is a distinct negative quality to the interaction. The mother reacts to the child's performance by becoming angry, hostile, cold, and/or totally unavailable.

Quality of Assistance

Major Criteria:

- 1) Giving minimal assistance needed to keep the child working toward a solution without solving it for him/her.
- 2) Helping the child see the relationships between actions that are required to solve the problem.

Subcriteria: Components of major criteria

- a) Grading of hints
- b) Clarity of hints – working in tune with the child’s level
- c) Flexibility – changing instructions for more effective help
- d) Timing of instructions
- e) Pacing of instructions
- f) Cooperating – giving hints that meet the child’s needs
- g) Having control of the situation
- h) Giving space initially
- i) Comments are helpful rather than discouraging
- j) Effectiveness of instructions

Minimal Assistance

This criterion involves the mother’s assisting skills with her child, helping the child stay interested and motivated while allowing a maximum amount of exploration and discovery. The mother gives the child just enough information without providing actions the child would have discovered with lesser hints. For example, if the child is using the two sticks side-by-side in Tool 3, the mother might say something regarding the length of the sticks, or that a longer stick was needed. She might even refer back to Tool 2 in which a longer stick was available to the child. This would evoke a more concrete memory of the implications of the word “longer.” If the mother, however, took the sticks and showed the child how to make one longer stick without mentioning length first, the child would miss the possibility of discovering how to make that step by him/herself. However, if a child were not able to understand or incorporate a hint concerning length, it could become necessary at a later point for the mother to show the child how to connect the sticks, in an attempt to deal with the child’s possible mounting frustration or disinterest.

The skill of giving minimal assistance is characterized mainly by the subcriteria of grading, timing, cooperation, space, and control. Timing and grading again refer to the step-by-step nature of assistance; giving just enough useable information at the right time to keep the child interested and on the right track. The mother does not leave logical gaps, but gives assistance when the child has reached his/her limit of

understanding, not before or after that point. If a mother comes in too soon she has not given the child enough time to use her hint in conjunction with his/her own resources to explore and manipulate. Moreover, the child might become noncompliant and refuse help. If a mother offers assistance too late the child may lose interest and become frustrated or hesitant. This also involves cooperation. The mother must see how the child is trying to solve the problem in order to give the information he/she needs.

A balance of space and control are important in terms of the child's opportunity to explore and work autonomously until he/she needs assistance. The mother does not, however, let the difficulty of the task frustrate the child to the point of a negative experience. Space also allows the mother to see how much help the child needs.

Flexibility and clarity are essential for giving useful assistance. Instructions which are not understood are not effective or helpful, and therefore, do not communicate enough information to keep the child working. The mother must adjust her assistance to what the child can use in order to avoid frustration and enhance learning.

Helping the Child See the Relationships

The mother tries to teach her child the rules of causality pertaining to the particular tool and its related parts. She might be able to direct her child through the motions that are required to solve the tool. However, if she does not help the child see the relationships between parts and actions, it is unlikely 1) that the child could solve a very similar problem autonomously and 2) that the child has learned any basic cause-effect rules which could be applied to new situations.

The subcriteria, which are of primary consideration for scoring these criteria, are: grading, flexibility, and cooperation. Allowing space, helpfulness of instructions, and effectiveness of instructions are also important.

Grading plays a major role in this criterion because the mother breaks down the task into smaller steps for the child to understand. She does not expect the child to make advanced logical inferences about the causal relationships, rather, she leads the child with her assistance through the motions and concepts needed in order to understand and solve the problem. She must cooperate by taking into account the particular action the child is performing at the moment, while flexibly basing her hints on that action and its effects upon the other parts of the tool. Her hints must be clear so the child can decode and use the information in her message. If her hints are not clear she must flexibly adjust her mode of assistance. In this way she helps her child make sense of the process required for problem-solving.

The mother must allow the child space to explore for two reasons. First, to ensure that the child is aware of all the parts or material available in the tool, and second, to determine how much the child already understands so she can base her first hint on the appropriate level and action. This applies to the duration of the process in terms of pacing. The mother does not try to make the child work at a rate that provides the child insufficient time to fully process and understand the relationships and actions he/she is working on at a particular moment. Pacing also affects clarity and

effectiveness of instructions. A child will neither understand nor comply with instructions given in too concentrated a form.

Helpfulness of instruction also plays a part in helping the child see the relationships. The child who is invested in the task is likely to try to incorporate the hints given by the mother. If these hints are irrelevant or distracting, the child can become confused in his/her attempts to use that information. The hints could be incorporated into the child's logical understanding, which could further hinder appropriate learning, or distract the child from the essential actions or concepts.

- 7- The mother meets all subcriteria and criteria or she is excellent at giving assistance. There may be some ambiguity about what is expected or a lack of clarity at one point during the task, but in general the criteria and subcriteria apply, or both major and all but one subcriterion are met. The mother is sensitive to her child's schedule. This enables her to provide helpful, well-timed instructions in a clear, orderly and understandable manner. She may be directive if it is an appropriate, non-intrusive manner.
- 6- This mother's assistance is quite good. The two major criteria are met but perhaps not 100 percent, or all but two of the subcriteria are met. Perhaps there is not quite enough focus on "helping the child see the relationships" but otherwise criteria and subcriteria are met. This rating may also apply to the situation in which the task is solved so quickly that it is not possible to give a lower rating.
- 5- This mother is moderately good at giving assistance. It may be that one major and one or two subcriteria are not met, or three subcriteria are not met. It may seem that the mother could improve on several dimensions (i.e., timing, clarity), although major criteria are met.
- 4- This mother is moderately good to weak at giving assistance to her child. She shows more than just a few strengths. Both criteria may be minimally met but the subcriteria are generally sufficiently (but not optimally) met. Or one criterion and several subcriteria are not met.
- 3- The mother's assistance is weak. Neither major criterion is met, although they may be scored minimally. The mother does, however, show a few strengths meeting, or minimally meeting, three or four subcriteria.
- 2- This mother's assistance is very poor. Nearly all or all subcriteria are unmet. Overall, the mother contributes very little in the way of assistance, and gives little or no evidence of strengths in the subcriteria.
- 1- The mother distracts her child, frustrates him/her, or simply provides no assistance.

Mother Hostility

This scale reflects the mother's expression of anger, discounting or rejecting of the child. A mother scoring high on this scale would clearly and overtly reject the child, blame him or her for mistakes, and otherwise make explicit the message that she does not support the child emotionally. A mother scoring low on this scale may be supportive or cold, but she does not blame or reject the child. A rejecting mother may also show some Supportive Presence (and the inconsistency of her behavior would be revealed by these two scores). Given the low frequency and the clinical relevance of rejecting one's child during a videotaped session, any events that are clearly hostile should be weighted strongly in this score.

- 7 - Very high. This mother shows characteristics of the previous scale point, but expressions of anger toward the child also are accompanied by strong, barely controlled emotions, suggesting the possibility of physical abuse and neglect of the child in some situations.
- 6 - High. This mother has frequent expressions of rejection and hostility directed toward the child. There is little or no effort to show warmth during substantial portions of the session, especially after mother becomes irritated with the child (i.e., mother may initially be warm and then rejects the child strongly). Mother is frankly and directly rejecting and hostile (e.g., telling child she will leave him/her behind if he/she does not do the task, using negative performance feedback but little positive feedback, blaming the child for incompetence on the tasks, and overtly refusing to recognize the child's success (e.g., "You couldn't have done it without me showing you!"). Any warmth seems superficial relative to the mother's distancing from the child; rejection is used as a control technique against the child.
- 5 - Moderately high. Mother is overtly rejecting or hostile several times. Behaviors include overt and clearly communicated rejections of child and expressions of hostility or anger that appear intermittently through substantial periods of the session. This mother's behavior is more rejecting than not, either by the frequency of hostile behavior or by the potency by which rejection is communicated several times in the session.
- 4 - Moderate. The mother demonstrates several instances of hostile or rejecting behaviors. Two or more of these events are reliably clear to observers, but expressions are brief and do not set the tone of mother's interactions immediately following the episodes.
- 3 - Moderately low. Signs of hostility again are very fleeting, but they occurred on several occasions during the session, and at least one sign could be identified as clear and overt or an accumulating sense of unexpressed anger and **avoidance** toward the child was seen in the mother's behavior.

- 2 - Low. This mother did one or two things that seemed to communicate a little hostility toward the child. These messages were not overt but rather muted expressions toward the child (e.g., pulling away something with a jerk, putting her hand on her hip to show exasperation, giving a cold [hostile] look at the child briefly, parroting or mimicking the child in a hostile fashion).
- 1 - Very low. Mother shows no signs of rejection. She may or may not be supportive, but she does not try to put down the child or avoid the child in rejecting ways. Passive or emotionally uninvolved mothers would be included in this scale point if the mother did not reject the child or communicate hostility toward the child.

42-month Parenting Scales
Teaching Task Scales

Supportive Presence. A mother scoring high on this scale expresses positive regard and emotional support to the child. This may occur by acknowledging the child's accomplishments on the task or unrelated tasks the child is doing (e.g., building a house of blocks), encouraging the child with positive emotional regard (e.g., "You're really good at this." "You got another one right.") and various other ways of letting the child know that s/he has her support and confidence to do well in the setting. If the child is having difficulty on the task, the mother is reassuring and calm, providing an affectively positive "secure base" for the child, perhaps leaning closer to the child to give a physical sense of support. A mother scoring low on this scale fails to provide supportive cues; she might be passive, uninvolved, aloof, or otherwise unavailable to the child. Such a mother also might give observers the impression that she is more concerned about her own adequacy in the setting rather than concerned about the child's emotional needs. A potential difficulty in scoring this scale is to discount messages of mothers that seemingly are supportive in verbal content, but are contradicted by other aspects of the communication (e.g., the mother seems to be performing a supportive role for the camera and not really engaged in what the child is doing or feeling. Signs of such questionable support are improper timing of support, mismatch of verbal and bodily cues, and failure to have the child's attention in delivering the message. These types of supportive messages would not be weighted highly because such features suggest that supportive presence is not a well-practiced aspect of their interaction outside the laboratory setting. Conversely, mother may seem more supportive than she appears in this situation because she has approached this task as a test of the child's achievement and has not used as much support as she otherwise might have. Yet, the qualitative features of her support would merit a high score.

- 1 = Mother completely fails to be supportive to the child, either being aloof and unavailable or being hostile toward the child when the child shows need of some support.
- 2 = Mother provides very little emotional support to the child. Whatever supportive presence she does display is minimal and not timed well, either being given when the child does not really need it, or only after the child has become upset.
- 3 = Mother gives some support, but it is sporadic and poorly timed to the child's needs. The consistency of this support is uneven so as to make the mother unreliable as a supportive presence.
- 4 = This mother does a respectable job of being available when her child needs support. She may lean closer as the child shows small signs of frustration and praise the child's efforts to show that she is available and supportive, but inconsistency in this style makes her support unreliable or unavailable at crucial times in the session.

- 5 = Mother provides good support, reassurance and confidence in the child's ability, but she falters in this at times when the child especially could use more support. Or, mother is universally supportive, but gives no evidence of modulation to the child's needs.
- 6 = Mother establishes herself as supportive and encouraging toward the child and continues to provide support when the child needs it. As the child experiences more difficulty, her support increases in commensurate fashion. She has some lapses, however, in which the child's performance waivers for lack of support. Yet, she redoubles her support and attempts to return the child to a level of confidence that is more optimal.
- 7 = Mother skillfully provides support throughout the session. She sets up the situation from the beginning as one in which she is confident of the child's efforts. She may reject inadequate solutions to problems in a way that does not reduce her support and confidence in the child's ability to get the correct solution. If the child is having difficulty, she finds ways to structure the problem to reward some sort of success by the child and encourage whatever solution the child can make. Mother not only is emotionally supportive but continuously reinforces the child's success.

Mother's Respect for Child's Autonomy. This scale reflects the degree to which the mother acted in a way that recognized and respected the validity of the child's individuality, motives, and perspectives in the session. A mother scoring low on this scale would be very intrusive in her interventions with the child, exerting her expectations on the child in a way that makes the child a satellite or servant of the mother rather than a mutually negotiated relationship, or implicitly defining her interactions in terms of a win-lose power struggle in which compliance by the child makes mother the winner and the child submissive. Mothers may intrude either harshly or with affection; in either case, her actions do not acknowledge the child's intentions as real or valid, and communicate that it is better and safer to depend on her for direction than to attempt individuality. In contrast, a mother scoring high on this scale acknowledges the child's perspectives and desires as a valid part of the child's individual identity. A mother scoring very high does this explicitly by negotiating rules with the child, verbalizing her acknowledgement of the child's intentions, does not deny the child's right to those desires, and models her own identity and the validity of her own desires in the way she expects the child to respect her individuality, too. Note: Mother can get a low score just by denying the child's individuality strongly (e.g., interrupting the child, doing things before the child can on his/her own, etc.) even though it is not interrupting the child's behavior.

- 1 = **Very low.** Mother completely denies the child's individuality in the techniques she uses. Mother is very intrusive, physical, and forceful in controlling the child.
- 2 = **Low.** Mother strongly denies the child's individuality, but there are a few opportunities for the child to experience autonomy, whether by variation in mother's approach or simply by occasional absence of maternal controls over the child. Mostly, however, this mother's style denies the child's autonomy and mother is intrusive.
- 3 = **Moderately low.** Mother does not completely deny the child's individuality, but she effectively communicates that the child's intentions do not have validity compared to her own intentions for the child. She also intrudes strongly on the child's behavior, giving him/her little chance to do anything on his/her own.
- 4 = **Moderately high.** Mother is moderately intrusive. Although mother does not deny the child's separate identity, she does very little to support the validity of the child's individuality. She might communicate doubts to the child about the appropriateness of having his/her own intentions, or intrude abruptly on the child several times.
- 5 = **Moderately high.** Mother does allow the child some autonomy of intentions, but she does not actively support and reinforce this perspective in the child. She may reflect the child's intentions and ideas by engaging the child, but she also exerts her will at times over the child in a way that shifts the child's perspective.

- 6 = **High**. Mother is not intrusive over the child; instead, she acknowledges the child's intentions, communicates trust in the child's individuality, and allows a mutually negotiated interaction.
- 7 = **Very high**. Mother very clearly interacts with the child in a way that acknowledges the validity of the child's perspective, encourages the child to acknowledge his/her intentions, and to negotiate the course of interactions in the session. This mother also models her individuality to the child in these negotiated interactions and may insist on the importance of her interventions being followed, but she does so while acknowledging the reality and validity of the child's differing perspective and never in an intrusive manner.

Mother Hostility. This scale reflects the mother's expression of anger, discounting or rejecting of the child. A mother scoring high on this scale would clearly and overtly reject the child, blame him or her for mistakes, and otherwise make explicit the message that she does not support the child emotionally. A mother scoring low on this scale may be supportive or cold, but she does not blame or reject the child. A rejecting mother may also show some Supportive Presence (and the inconsistency of her behavior would be revealed by these two scores). Given the low frequency and the clinical relevance of rejecting one's child during a videotaped session, any events which are clearly hostile should be weighted strongly in this score.

- 1 = **Very low.** Mother shows no signs of rejection. She may or may not be supportive, but she does not try to put down the child or avoid the child in rejecting ways. Passive or emotionally uninvolved mothers would be included in this scale point if the mother did not reject the child or communicate hostility toward the child.
- 2 = **Low.** This mother did one or two things that seemed to communicate a little hostility toward the child. These messages were not overt, but rather muted expressions toward the child (e.g., pulling away something with a jerk, putting her hand on her hip to show exasperation, giving a cold [hostile] look at the child briefly, parroting or mimicking the child in a hostile fashion).
- 3 = **Moderately low.** Signs of hostility again are very fleeting, but they occurred on several occasions during the session, and at least one sign could be identified as clear and overt or an accumulating sense of unexpressed anger and **avoidance** toward the child was seen in the mother's behavior.
- 4 = **Moderate.** Several instances of hostile or rejecting behaviors. Two or more of these events are reliably clear to observers, but expressions are brief and do not set the tone of mother's interactions immediately following the episodes.
- 5 = **Moderately high.** Mother is overtly rejecting or hostile several times. Behaviors include overt and clearly communicated rejections of child and expressions of hostility or anger which appear intermittently through substantial periods of the session. This mother's behavior is more rejecting than not, either by the frequency of hostile behavior or by the potency by which rejection is communicated several times in the session.
- 6 = **High.** This mother has frequent expressions of rejection and hostility directed toward the child. There is little or no effort to show warmth during substantial portions of the session, especially after mother becomes irritated with the child (i.e., mother may initially be warm and then rejects the child strongly). Mother is frankly and directly rejecting and hostile (e.g., telling child she will leave him/her behind if he/she does not do the task, using negative performance feedback but little positive feedback, blaming the child for incompetence on the

tasks, and overtly refusing to recognize the child's success (e.g., "You couldn't have done it without me showing you!"). Any warmth seems superficial relative to the mother's distancing from the child; rejection is used as a control technique against the child.

- 7 = **Very high.** This mother shows characteristics of the previous scale point, but expressions of anger toward the child also are accompanied by strong, barely controlled emotions, suggesting the possibility of physical abuse and neglect of the child in some situations.

13-year parenting

SUPPORTIVE PRESENCE

This scale attempts to capture how emotionally supportive and available the parent is to the child during the observation. A parent scoring high on this scale expresses positive regard and emotional support to the child. The parent should show general involvement in the interaction and with the child. A parent scoring low on this scale fails to provide supportive cues; the parent might be passive, uninvolved, aloof, or otherwise unavailable to the child. Such a parent also might give observers the impression that s/he is more concerned about the parent's own adequacy and task performance rather than about the child's emotional needs. A potential difficulty in scoring this scale is the need to discount messages of parents that seemingly are supportive in verbal content but are contradicted by other aspects of the communication. Examples of such questionable support are improper timing of support, mismatch of verbal and bodily cues, and failure to have the child's attention in delivering the message.

A parent scoring high on this scale should:

- a. pay attention to the child when the child talks (eye contact, body posture)
- b. be engaged in the interaction; appear to enjoy interacting with the child
- c. make positive statements about the child or the child's ideas ("I like the ideas you had for the anti-smoking campaign" or "You are always so good at puzzles/directions")
- d. have a positive tone of voice
- e. give criticism in a constructive not destructive way
- f. enhance child's self-esteem ("That's not a problem with you" in the Q-Sort)
- g. recognize when the child needs more support and redouble efforts to provide support
- h. take opportunities to share emotionally with the child, especially in the successful completion of the task

A parent scoring low on this scale might:

- a. show some scolding of the child
- b. criticize the child or show disapproval (pointing out how the child is like a negative card in the Q-Sort or blaming the child for not completing the puzzle)
- c. appear distant and removed from the child
- d. not return child's positive affect or initiation of pro-social behavior
- e. have a mismatch between positive affect and tone of voice (e.g. cynical remarks)
- f. show more concern for the parent's own adequacy than the child's needs

- 1- **Very Low.** Parent *completely fails to be supportive to the child*. The parent is emotionally aloof and unavailable to the child. In addition to showing a lack of supportive behavior, the parent may also be actively hostile toward the child or denigrate the child.

- 2- **Low.** Parent provides *very minimal emotional support to the child*. While the parent is not completely failing to provide the child with emotional support, *whatever supportive behavior the parent does display seems insincere or as though the parent is playing a part and is very poorly timed to the child's needs*.
- 3- **Moderately Low.** The parent gives some support *but it is sporadic and not well timed to the child's needs*. The consistency of this support is uneven so as to make the parent unreliable as a supportive presence.
- 4- **Moderate.** The parent is mostly available when her/his child needs support, but the parent has moments of inconsistency. The parent may be encouraging of the child at times, *but inconsistency in this style makes the parent's support unreliable or unavailable periodically during the session*.
- 5- **Moderately High.** Parent provides good support, reassurance and confidence in the child's ability, *but the parent falters in this at times when the child especially could use more support*. For the most part, the parent emotionally supports the child and responds to the needs of the child.
- 6- **High.** Parent establishes her/himself as supportive and affirming toward the child and continues to provide support when the child needs it. Again, when the child seems somewhat insecure or withdrawn the parent's support increases in commensurate fashion. *The parent may have a couple of lapses, however, in which the child's involvement in the discussion or activity wavers for lack of support or positive feedback*. Yet, the parent then attempts to return the child to a level of involvement that is more optimal.
- 7- **Very High.** Parent provides support throughout the session. The parent sets up the situation from the beginning as one in which s/he is confident in the child and in their relationship. The parent may redirect the child when appropriate in a way that does not reduce her/his support and confidence in the child as a person. The parent remains close to the child in times of difficulty and shows increased effort to be encouraging and supportive when the child seems insecure or withdrawn. *The parent emotionally supports the child and responds to the needs of the child*.

QUALITY OF ASSISTANCE

This scale assesses how well the parent assists the adolescent in working toward the goals of the tasks. This assistance includes:

- Structuring the situation
- Monitoring the adolescent's understanding, abilities, responses
- Scaffolding the tasks—providing appropriate assistance and guidance
- Clarity—comments/assistance is clear and unambiguous
- Flexibility—changing tactics/instructions for more effective help—uses alternative strategies or rephrases suggestions
- Focus of comments/assistance—comments are tied into adolescent's current focus
- Pacing of comments/assistance—allows for comprehension
- Cooperation and coordination—working with the adolescent on the tasks—assistance is coordinated with the adolescent's ability—suggestions/comments are coordinated with the adolescent's efforts at solving the task
- Comments are helpful rather than discouraging
- Provides appropriate feedback
- Persistence—persists despite difficulties

A parent scoring high on this scale provides assistance in understanding and structuring the tasks, but allows the adolescent to engage in self-directed problem solving when appropriate. The parent monitors the adolescent's progress and provides enough guidance coordinated to the adolescent's ability level without taking over the situation altogether.

In the mid-range of the scale, the parent provides assistance, but the assistance lacks one or more of the features present at the higher points. Thus the parent's help might be poorly coordinated to the adolescent's abilities or a bit too directive.

A parent scoring low on this scale may fail to assist the adolescent. This may be evident either in disengagement, leaving the adolescent without structure, monitoring, or guidance, or in the alternative, the parent may be extremely directive, in effect directing the tasks without allowing the adolescent to engage fully.

- 1- **Very Low.** The parent's guidance is of uniformly poor quality. The parent does not assist the adolescent in working toward the goals of the tasks. This may be evident in one of two ways:
 - a. The parent fails to structure the task or guide the adolescent's progress in any effective manner such that the adolescent must work almost completely independently and cannot rely on the parent as a source of assistance despite the fact that some assistance and cooperation on the part of the parent is required.

- b. The parent may take over the tasks herself and is so directive that the adolescent is reduced to following the parent's comments with little or no opportunity to engage in problem solving or the adolescent simply disengages in the tasks.
- 2- **Low.** The parent occasionally gives effective guidance and provides some assistance to the adolescent in working toward the goals of the tasks. The assistance, however, is so poor that the pair falters on several of the tasks. The parent may fail to provide appropriate structure on several of the tasks or may take over most of the tasks entirely, not allowing the adolescent to engage in problem solving. Overall, the parent contributes very little in the way of assistance and most of the parent's minimal attempts at providing assistance are ineffective.
- 3- **Moderately Low.** The parent adequately structures some portions of the tasks and provides some guidance, but the assistance is inadequate for much of the session. Alternatively, the parent may approach the tasks in a way that is very structured but requires the adolescent to attend primarily to her directives and allows little opportunity for the adolescent to engage the tasks directly (therefore, the parent does not have to coordinate to the adolescent's efforts).
- 4- **Moderate.** The parent provides adequate assistance to the adolescent in working toward the goals of the tasks, facilitating the adolescent's basic understanding of and engagement with the tasks, but overall, the assistance is lacking in major ways at several points during the session; structuring the task requirements may be weak, assistance may be poorly coordinated to the adolescent's efforts and abilities, or monitoring and guidance may not be consistently provided. In the alternative, the assistance is mixed, with good quality of assistance on some tasks and poor assistance on other tasks.
- 5- **Moderately High.** The parent generally provides instruction that is sufficient and appropriate, but there are some periods in which it is inadequate in amount or quality.
- 6- **High.** In general the parent provides appropriate assistance to the adolescent during the session. Most of the desirable features of assistance described are demonstrated, however, the assistance does not reach the level described in 7. Good structure may be provided throughout most of the tasks, but on some aspect or on some task the parent does not meet expectations, i.e., the parent does not always encourage self-directed problem solving when she could do so.
- 7- **Very high.** The parent provides consistently appropriate and helpful assistance throughout the session. The parent demonstrates all the basic features of assistance described in the scale introduction, structuring the tasks, monitoring

and guiding the adolescent in a manner that is sensitive to the adolescent's abilities. The parent encourages self-directed problem solving when possible, and appropriately scaffolds the tasks.

HOSTILITY SCALE

While anger and hostility can be difficult to differentiate, this construct is intended to be distinct from expressions of anger. Unlike anger, hostility is not intended to engage or elicit a response from the child. There is no expectation on the part of the parent that a satisfactory resolution will ensue through the use of these comments. On the contrary, there is an element of hopelessness or fatalism. It is as if things will never change. There is an indirect quality to most comments and frequently incongruence between the comment and the affect of the parent, i.e. use of sarcasm or rejecting statements said with humor or laughter.

An element to consider in scoring is the accompanying affect. Cold, rejecting comments or easily expressed hurtful comments characterize the high end of scoring. In the moderate range, there may be a mixture of pain and sadness at having said a hurtful thing.

- 1- No evidence of hostility, any angry statements made are done so with the clear intention of eliciting a response or change in the child.
- 2- Vague or indeterminate examples of a small number. A minor put down or critical tone are examples of behaviors that might occur at this level, but only one of these may occur for a score of a 2.
- 3- A score of 3 signifies a minor element of hurtful intent or at least a degree of hopelessness in the task of achieving a satisfactory response. It may take the form of several mildly hurtful comments or two or three clear putdowns. Statements leave open the possibility of working something out – all hope is not lost.
- 4- All scores 4 and above begin to be characterized by a clear lack of expectation that there will be any change or satisfactory solution. There are several pointed, hostile statements made with sarcasm or cynicism, but there may remain an element of vulnerability. At this level, expressions of hostility may co-occur with intermittent expressions of anger. In general, scale point 4 should be used for parents who are a mixed picture.
- 5- A score of 5 is appropriate when it is apparent that the parent adopts a predominantly hostile approach to the interactions. The parent clearly rejects working with the child on the tasks and put-downs take on a personal nature. This parent's behavior is more rejecting than not, either by the frequency of the hostile behavior or by the potency by which rejection is communicated several times in the session.
- 6- This parent frequently expresses rejection and hostility toward the child. There is little or no effort to show warmth during substantial portions of the session.

At this scale point, it may seem that the parent is using the rejection or hostility as a control technique against the child.

- 7- This scale point should be reserved for those parents who show outright rejection of their child. Their interactions are characterized by a high degree of cynicism, sarcasm, personal put-downs and complete disregard for the child. The parent shows no warmth towards the child.

Scoring Criteria:

- 0 - anticipated end of job or contract; vacation (e.g., summer vacation for teachers) or other planned termination
- 0 - mother unemployed by choice (e.g., to take care of infant)
- 1 - mother, husband/boyfriend is unemployed due to sickness
- 1 - chronic unemployment of husband/boyfriend who is not living in the home*
- 1 - chronic unemployment, isn't looking for job -- on welfare
- 1 - looking for work more than 2 months, on a consistent job search (do not include: more sporadic job search or not bothered by unemployment)
- 1 - recently finished training/school -- looking for job
- 1 - unsteady job or many job changes, works on and off with periods of unemployment
- 2 - mother, husband/boyfriend loses job; job loss is undesirable
- 2 - husband/boyfriend or mother who ordinarily works is temporarily unemployed (family is dependent upon his/her income but is able to compensate for the loss)
- 2 - chronic unemployment of husband or boyfriend who is not living in the home because of his unemployment
- 3 - great degree of disorganization due to unemployment (e.g., requires moving, results in serious marital discord)
- 3 - chronic unemployment of husband/boyfriend who is living in the home

*chronic = no permanent job of longer than 6 months since getting out of school

Cumulative for mother's unemployment plus husband/boyfriend's unemployment if mother is dependent upon him for financial support.

2. Job changes in last year (#) _____ (mother or husband/boyfriend?)
 changes in hours _____
 desired/undesired _____
 changes in work conditions _____
 changes in responsibility _____
 promotion _____
 change in type of work _____

Scoring Criteria:

- 0 - preferred change in hours/conditions in last year
- 0 - change in hours/conditions indicated with no elaboration (check, no elaboration)
- 0 - promotion (no elaboration/indication of disruption)
- 1 - new job, same line of work with no indication of disruption
- 1 - new job, new line of work with no indication of disruption

- 1 - job change seems to be demotion (no indication of serious disruption)
- 1 - non-preferred change in hours/conditions
- 2 - job loss -- undesired (do only if not captured in #1)
- 2 - job change involving financial risk
- 2 - job change involves difficulties in transition
- 2 - new job with excessive, increased demands
- 2 - new job with multiple impacts, i.e., requirement of move/time spent out-of-town
- 2 - promotion/change with indication of stress and disruption (e.g., bad hours, too much responsibility, negative effect on friendships)
- 2 - 2 or more job changes with no indication of stress
- 3 - 2 or more job changes with indication of stress

Code for only mother or husband/boyfriend (not both). If mother has not had any job changes, code for husband/boyfriend only if she is dependent on him for financial support.

3. Trouble with welfare
 paperwork _____
 money delayed (how long) _____
 money reduced _____
 money taken away _____

Scoring Criteria:

- 0 - mother voluntarily discontinues with a program, e.g., WIH, WIC, etc.
- 0 - threatened delay/revoke of welfare (e.g., threat due to problems in paperwork--however, actual delay/loss of welfare does not occur)
- 1 - delayed welfare due to problems with paperwork*
- 1 - lost welfare because of other sources of income
- 1 - delay after application was submitted to welfare*
- 1 - welfare is reduced
- 2 - loss** of welfare, but some minimal support available which provides for only the basic necessities
- 2 - delay after application longer than 30 days
- 3 - loss of welfare with loss of basic necessities for any period of time--potentially life-threatening situation

*delay = 7 to 30 days

**loss = mother is without welfare for more than 30 days

4. Trouble with superiors or continued tension at work/school (explain the trouble and the results of the problem)

Scoring Criteria:

- 0 - use of poor relationship with supervisor as reason to quit job which was initially unsatisfactory
 - 1 - problems at work provide day-to-day tension
 - 1 - trouble with supervisor results in loss of job
4. Moved during the past 12 months _____
 dates _____
 (explain circumstances, e.g., eviction, move to parents) _____

Scoring Criteria:

- 1 - 1 move, routine
 - 1 - 2 moves, one of which is back to parents
 - 1 - 2 moves; however, 1 is within the same apartment building
 - 2 - 2 or more moves
 - 2 - stressful circumstances precipitate one move (e.g., eviction, fights with neighbors)
 - 2 - stress associated with move (e.g., lowering of housing standards)
 - 3 - move due to fire, property destruction, threatening boyfriend or other life-threatening situation
 - 3 - more than 1 eviction
 - 3 - 2 or more moves, 1 of which is stressful
6. Purchasing own home (taking out mortgage) _____

Scoring Criteria:

- 0 - looking for new home
 - 1 - buying own home
 - 1 - purchase offer accepted, deal falls through
7. Quarrel with neighbors (explain circumstances; was physical force used?) _____

Scoring Criteria:

- 1 - check with no elaboration (no indication of disruption)
- 1 - constant/minimal annoyance, interference; no threats of physical fight
- 2 - dangerous neighborhood, personal safety at-risk
- 2 - calls to police necessary
- 2 - physical fights and threats of physical harm
- 2 - problems resulting in eviction

- 3 - fights result in personal/property damage, requiring doctor's care/hospitalization
- 3 - intense ongoing conflict -- not limited to verbal/physical -- reserved for direct conflict

8. Income decreased substantially (25%) _____
 Life threatening? _____
 Change in living standards? (describe) _____

Scoring Criteria:

- 1 - check with no elaboration (no indication of undue hardship)
- 1 - no noticeable, or minor, change in living standard (e.g., leaving parents' home with no stress involved)
- 2 - change in living standard, not too serious
- 3 - substantial change with pervasive consequences (e.g., not enough money for basic needs)

9. Getting into debt beyond means of repayment.
 Any repossessions or legal actions? _____

Scoring Criteria:

- 1 - check with no elaboration (no indication of change in style of living)
- 2 - mother/another household member goes into debt, which results in repossession of major items, such as automobile, television, etc.
- 2 - any loan resulting in court procedures

10. Money problems (shortage so that you have trouble managing) _____

NOTE: Do not score this item if content is identical to that in item 8 or 9.
 Life threatening? _____

Scoring Criteria:

- 1 - check with no elaboration
- 2 - money problems serious, but not life-threatening
- 3 - money problems, life-threatening situation

11. Arguments about how money is spent _____
 Frequency of fights _____
 Severity of fights _____

NOTE: Code here only arguments about money. Do not code physical fights here (code under #31).

Scoring Criteria:

- 0 - arguments are infrequent and no indication of stress (e.g., fight 1 or 2 times per month; minor verbal arguments)
- 1 - arguments are frequent or particularly severe (e.g., fight weekly/more often; or fights are severe/very stressful)
- 2 - arguments are both frequent and severe

12. You/immediate family member arrested/convicted of minor violations.

Who was involved and how close is relationship? _____

What are the results? _____

speeding _____ DWI _____ assault _____ parking
tickets _____
accidents _____ drug possession _____ theft _____
prostitution _____ rape _____ other _____

Code consequences of minor violations as indicated below. Consider only convictions of immediate family members. Code for mother's family only unless stress associated with husband/boyfriend's families' arrests/convictions.

Scoring Criteria:

- 0 - minor violation, no consequences besides warning, parking ticket, or speeding ticket
- 1 - car accident where mom or relative is at fault
- 1 - minimal impact; immediate family member upon whom mother is not dependent/who has no direct contact (not living with mother) commits more serious crime (e.g., drunken driving, assault, burglary, etc.)
- 1 - member of household convicted of speeding/other moving violation which results in a hardship (e.g., accumulation of fines; loss of license)
- 1 - child is arrested for minor violations (e.g., shoplifting, vandalism, disorderly conduct)
- 2 - child is repeatedly arrested for minor violations
- 2 - child is arrested for more serious violation (e.g. burglary, possession of drugs, minor assault)
- 2 - drunken driving or other moderately serious conviction leading to hardship (loss of license, loss of transportation)
- 3 - convictions of more serious crime committed by boyfriend, mother, child, or mother's parents (e.g., carrying a weapon, assault, dealing drugs)

Cumulative for each violation and for each immediate family member, but maximum of 3 per family member; ceiling of 5.

13. Jail sentence of immediate family member (includes workhouse).
 Who? _____ How long? _____
 How close is the relationship? _____

Do not code if jailed overnight/jailed for several days while being held for sentencing (these cases should be coded under #12 only). Consider only jail sentences of immediate family members of mother and husband/boyfriend.

Scoring Criteria:

- 0 - family member upon whom mother is not dependent (or who does not have close relationship) receives sentence of less than 30 days
- 1 - family member in close contact with mother/upon whom mother depends receives a sentence of less than 30 days
- 1 - more serious crime (felony and/or greater than 30-day jail sentence) committed by family member who has infrequent contact with mother
- 1 - child in juvenile detention center for up to 14 days
- 2 - child in juvenile detention center for up to 14 days -- very stressful for mother
- 2 - jail sentence continues for inmate with whom mother is emotionally involved (actual sentence not within year)
- 2 - felony results in trial/sentence for any family member with whom mother has close but not dependent relationship
- 2 - jail sentence for mother of up to 30 days
- 2 - jail sentence for father/live-in boyfriend* of 30 days to 1 year
- 2 - child in juvenile detention center for more than 14 days
- 3 - child in juvenile detention center for more than 14 days -- very stressful for mother
- 3 - jail sentence for mother of more than 30 days
- 3 - jail sentence for father/live-in boyfriend*/family member upon whom mother is dependent of more than 1 year

*Code for any boyfriend, not just a "live-in" boyfriend, if mother is emotionally and/or financially dependent on him.

14. You/immediate family involved in physical fight _____
 With whom? _____ How often? _____
 (if drug/alcohol involvement, also code item 15 or 20)

NOTE: Code here fights involving the mother, father/boyfriend, or immediate family member and someone outside of the family. Do not code for fights

between mother and father/boyfriend (code under #31) or between mother and other family members (code under #34). Also, do not code here clear instances of victimization (code under #40). This item is intended primarily for "bar room brawl" type physical fights in which the mother, father, or immediate family member plays an active role.

Scoring Criteria:

- 1 - physical fights in extended family
- 1 - mother/father involved in one minor fight (e.g., just shoved)
- 1 - serious physical fights between siblings
- 2 - close, depended upon person fights with someone else (e.g., boyfriend/husband has a fight with someone else); severe (physical injury/personal property damage) or frequent (3 or more times)

15. Immediate family member/close friend drinking/using drugs heavily _____
 Who and how close is the relationship? _____
 Impact _____

NOTE: If mother or husband/boyfriend drinks heavily, score under #20.

Scoring Criteria:

- 1 - immediate family member engages in heavy drinking/drug use, little contact with mother at present or minimal impact
- 2 - immediate family member with direct impact/frequent contact with mother starts heavy drinking or is alcoholic/drug addicted
- 2 - household member other than immediate family member is alcoholic/drug addicted

Close Friend: determine severity and lower the score by 1

Cumulative for each family member's drinking/drug use; ceiling of 3.

16. Immediate family member/close friend attempts suicide. _____
 (or claims considering suicide) _____
 Who and how close is the relationship? _____

Scoring Criteria:

- 1 - family member with little contact/closeness makes attempt
- 2 - family member with close contact/impact makes attempt
- 2 - close family member, boyfriend or mother claims consideration of suicide*

- 2 - close friend upon whom mother is emotionally dependent attempts suicide
- 3 - husband/boyfriend or mother actually attempts suicide
- 3 - immediate family member upon whom mother is dependent attempts suicide

*Threats which are clearly seen by mother as a bid for her attention in the sense that they occur frequently and without serious intent to commit suicide are scored 1.

**Actual suicide coded on both #16 and #17.

Cumulative for each immediate family member's or close friend's suicide attempt.

17. Death of immediate family member*/close friend. _____
Who and how close is the relationship? _____

Scoring Criteria:

- 0 - not immediate family member (e.g., great grandmother)
- 1 - close friend's baby dies
- 1 - friend dies, no elaboration of closeness or qualifies closeness (e.g., "we used to be close, sort of")
- 1 - limited contact with immediate family member who dies
- 1 - baby of immediate family member dies
- 1 - extended family member with whom mother has close relationship dies
- 2 - moderately close relationship, immediate family member (other than mother/father of target mother) dies (e.g., mother's brother/sister)
- 2 - close friend dies
- 2 - alleged father of infant dies (not living with mother before death)
- 2 - boyfriend (non-serious relationship) dies
- 3 - boyfriend (serious relationship, cohabitation) dies
- 3 - mother's mother, father or siblings with whom she has a close relationship dies
- 4 - death of child

*These have to do only with the mother's family, unless she has a close relationship with her husband's or boyfriend's family. If mother does not have a close relationship, these ratings can apply, but the score is lowered by one. If these items are used to score deaths in the extended family, the scores are lowered by one.

Cumulative for each family member's or close friend's death.

18. Immediate family member seriously ill _____
 With what _____
 Who and how close is relationship? _____
 NOTE: Score mother, father or baby under #23.

Scoring Criteria:

- 0 - extended family member with non-serious disease
- 1 - extended family member who has limited contact with mother has serious illness*
- 1 - very short term/serious illness of close friend (2 weeks or less)
- 1 - immediate family member with less serious illness (e.g., ulcers, high blood pressure, etc.); no close relationship with mother
- 2 - serious illness of immediate family member upon whom mother is not dependent
- 2 - family member upon whom mother is dependent; moderately serious illness
- 2 - immediate family member with whom mother is in close relationship has less serious illness (e.g., ulcers, high blood pressure, etc.)
- 2 - extended family member, close relationship, with serious illness
- 3 - serious illness of immediate family member upon whom the mother is dependent or any family member with whom she is living or with whom she has a close relationship

*Serious illness: terminal, threat of death, or life-threatening surgery. Also, long-term institutionalization (at least 1 year); if close friend is mentioned, treat it like extended family.

Cumulative for each family member's serious illness.

19. Gain of new family member (immediate family only--birth or marriage) _____
 Who? _____
 Member of mother's household? _____

Scoring Criteria:

- 0 - marriage in immediate family
- 0 - birth in immediate family
- 1 - housemember (family or friend) has a baby
- 1 - depended-upon person has baby
- 1 - alleged father has a baby by someone else
- 1 - target mother's mother has baby
- 2 - foster/stepchild enters family
- 2 - target mother has baby

- 3 - birth of second baby to target mother within 12-18 months of first birth
- 3 - 2 or more foster children in and/or out

20. Husband/boyfriend intoxicated frequently (alcohol/drugs) _____
 Frequency of occurrence _____
 Explain any harm on home life _____
 Have you ever threatened to leave because of your husband/boyfriend's
 drug/alcohol abuse? _____

In general, attend to the consequences of chemical use. Amount and frequency of use are both indications of the seriousness of the problem; however, effect on the family should be weighted most heavily in this rating:

NOTE: If there is verbal indication that mother is intoxicated frequently, score using these criteria.

Scoring Criteria:

- 1 - Minimal disturbance associated with regular and/or frequent periods of intoxication. For example, husband/boyfriend drinks himself into a quiet stupor in front of the TV. Mother indicates that his responsibilities are met and his behavior is not considered a threat to their relationship or a major source of conflict within the family.
- 1 - Moderate disturbance is associated with occasional (2-3) periods of intoxication. For example, on these occasions, husband/boyfriend becomes verbally abusive, arguments ensue and/or responsibilities are not met. Mother does not indicate that these are considered a threat to their relationship or a major source of conflict.
- 2 - Moderate disturbance is associated with regular and/or frequent periods of intoxication. For example, husband/boyfriend is verbally abusive, allows some responsibilities to slide, may be becoming a financial burden. This behavior is a source of conflict and a threat to the stability of the family.
- 2 - Serious disturbance is associated with occasional periods of intoxication. For example, property damage and/or physical fights result, mother may fear for her safety. This behavior was considered a source of conflict, but the overall consequences of these occasions are not pervasive.
- 3 - Consequences of periods of intoxication are serious and pervasive. Serious financial and marital difficulties result, and family members live in constant fear and/or worry. Responsibilities are seldom met and husband/boyfriend is considered a burden or threat to the safety and well-being of family members.

Ceiling of 5 (if mother and husband/boyfriend are both serious enough drinkers to be coded as a 3).

21. Serious restriction of social life _____
 Probe for severity _____
 Due to lack of money _____
 no sitter _____
 Husband/boyfriend restricts social life _____

Scoring Criteria:

- 0 - genuine lack of concern about restriction
- 0 - night school causes restriction
- 0 - normal restrictions due to having a baby
- 1 - lack of transportation, money, or babysitter somewhat limits social life
- 1 - loner, no friends and mother cares about lack of friendships
- 1 - works at night, resulting in restriction of social life
- 2 - stays away from friends to avoid drug/alcohol involvement, or avoids others because of extreme fear/mistrust
- 2 - lack of money, destitution with no babysitter available results in serious restriction
- 2 - disease/handicap of baby/mother results in restriction
- 2 - boyfriend/husband does not let mother out of house
- 2 - any severe/very stressful restriction

22. Period of homelessness (no permanent residence) where stayed during this period _____
 Reason for homelessness _____
 Separation from child involved? _____

NOTE: Do not code here unless mother indicates homelessness (do not infer from information obtained in #5.)

Scoring Criteria:

- 1 - staying with parents/friends while looking for house/apartment
- 1 - brief homeless periods between apartments
- 2 - staying with friends due to lack of money for housing
- 2 - homelessness with separation from those upon whom mother is dependent
- 2 - homelessness because of running away from boyfriend
- 2 - staying in shelter because of homelessness
- 3 - frequent periods of homelessness (less than 1 month) resulting in mother-infant separation two or more times
- 3 - prolonged period of homelessness with separation of mother and baby over 1 month

23. Serious physical illness or injury of mother, child, or father requiring hospitalization. Treatment _____ What _____
How long _____

NOTE: 1) This item applies only to mother, father, baby, parent's child, or sibling. 2) Repeated hospitalizations are cumulative if they are unrelated illnesses or non-scheduled recurrences of the same illness (e.g., if child goes for 3 planned operations for cleft palate, this is a score of 2 and is treated as 1 event. If subject goes for heart surgery and has to return [unplanned], this is scored 6, i.e., 2 events.) Hospitalizations are cumulative for each person.

Scoring Criteria:

- 0 - stitches, minor emergency room visits
- 1 - in hospital for routine operation or broken bones
- 1 - hospitalization for non-serious illness
- 1 - baby in hospital for less than 1 week for routine observation/illness
- 1 - chemical dependency treatment
- 2 - serious injury/illness requires hospitalization
- 2 - emotional problems with prolonged hospitalization (1 week/more)
- 2 - baby in hospital for 2 weeks/more
- 2 - mother hospitalized for 2 weeks/more
- 3 - life-threatening hospitalization for mother, father, or child (e.g. heart surgery)

24. Prolonged ill health of mother, child, or father requiring treatment by a doctor ___
What _____ How long _____

Scoring Criteria:

- 1 - allergies
- 1 - ongoing ill health, but treatment will keep problem under control (e.g., ear infections, recurring bladder infection)
- 1 - baby's problem, mother is told by pediatrician that child will outgrow it (e.g., heart murmur)
- 2 - mother/baby has illness with questionable outcome/serious chronic problems (e.g., multiple sclerosis, poorly controlled epilepsy, depression with suicidal idealizations/impairment in functioning)
- 3 - terminal illness/chronic disabling problem
- 3 - schizophrenia/other diagnosed psychosis of mother, father, or child

Cumulative for each family member.

25. Miscarriage _____

During what month of pregnancy _____
 Mother's acceptance _____

Scoring Criteria:

- 0 - accepted miscarriage occurring within first 3 months of conception
- 1 - unwanted miscarriage
- 2 - unwanted miscarriage, very distressing to mother

26. Abortion _____
 During what month _____ Acceptance _____

Scoring Criteria:

- 1 - abortion

Also code under #27 (pregnancy).

27. Pregnancy _____ Mother's acceptance _____

Scoring Criteria:

- 1 - planned pregnancy
- 1 - unplanned pregnancy with immediate acceptance
- 2 - unplanned pregnancy with period of difficult adjustment with eventual acceptance
- 2 - unplanned unwanted pregnancy terminated in abortion
- 3 - unplanned unwanted pregnancy

28. Marriage (of mother) _____ When _____

Scoring Criteria:

- 2 - target mother gets married

29. Boyfriend(s) moves out _____ number of times _____ desired _____
 Boyfriend(s) moves in _____ number of times _____ desired _____
 Mother moves out _____ number of times _____ desired _____
 Mother moves in _____ number of times _____ desired _____

Scoring Criteria:

- 1 - moving out; mutual agreement

- 1 - moving in
- 2 - undesired moving out; being thrown out (e.g., husband/boyfriend throws mother out of house or mother leaves because of fear)
- 2 - move in and out during time covered by measure
- 2 - forced moving out (e.g., jail term/unwanted job transfer)
- 3 - moves in and out more than twice

30. Other people moving in/out _____ number of times _____ desired _____

Scoring Criteria:

- 0 - moving out with no ramifications/implications
- 1 - moving in and/or moving out
- 1 - moving out creates money problems for mother
- 2 - 2 or more people move in at 1 time
- 2 - on 2 or more occasions during the period assessed someone moves in

31. Increase in number of arguments or severe arguments with spouse (or boyfriend/girlfriend) (severe enough to have affected the relationship), may also be intense conflict (without actual argument) _____

How serious _____ Physical fights _____

NOTE: May also be intense conflict (without actual argument)

Scoring Criteria:

- 0 - check with comment "usual amount" (unless information says that the usual amount is frequent)
- 1 - general increase with no elaboration
- 1 - check with comment that there is no particular increase; however, added comments indicate that the fights are frequent/constant
- 2 - more serious increase and/or more serious consequences (e.g., 1 or 2 physical fights, not too severe)
- 3 - mother severely beaten (medical attention required) or relatively less serious physical fights involving mother occur frequently (3 or more times)

32. Have you ever been frightened by your husband/boyfriend or other family members? _____ Who? _____

Circumstances _____
How severe _____ Number of times in the past year _____

Scoring Criteria:

- 0 - threats are not taken seriously by mother
- 1 - mother is frightened by husband/boyfriend or other family member 1 or 2 times (e.g., fears for her safety or safety of her child 1 or 2 times)
- 2 - mother is living under constant fear for her safety or safety of her child (e.g., husband/boyfriend threatens mother with physical abuse, constant harassment intended to harm/scare)

33. Increase in number of arguments/severe fights with close friend (severe enough to have affected the relationship); explain _____

Scoring Criteria:

- 1 - increase in arguments causes strain on friendships or outcome is uncertain
- 2 - arguments/fights end the relationship

34. Trouble with relatives (e.g., in-laws) _____
 Who and how close is the relationship _____
 How serious _____

Scoring Criteria:

- 1 - general increase in arguments or trouble with relatives (in-laws)
- 2 - close family relationship with serious feud/consequences
- 2 - prolonged family quarrel

35. Marital separation or break-up (includes on-going relationship with boyfriend)

Desired or undesired _____ Were living together _____

Scoring Criteria:

- 1 - desired, acceptable break-up; agreed upon separation (no indication of problems created by break-up)
- 2 - desired break-up by either mother or husband/boyfriend; other doesn't want to
- 2 - 2 or more separations; all agreed upon/mutual
- 3 - 2 or more separations; at least 1 of which is not agreed upon/mutual

36. Divorce _____ Mutual or contested _____

Scoring Criteria:

- 1 - divorce, mutual agreement, no complications
- 2 - husband fights for custody of child

- 2 - contested divorce
- 2 - desertion

37. Marital reconciliation _____ Number of times _____

Scoring Criteria:

- 0 - comfortable, stable, accepted reconciliation which involves relief of stress
- 1 - reconciliation (uncertain outcome)

38. Custody, visitation problems _____
 Explain (e.g., father wants visitation rights) _____

Scoring Criteria:

- 1 - father is occasionally irresponsible or violates some aspect of the visitation agreement on occasion (e.g., shows up on the wrong days, doesn't come when he says he will, is late in returning the child)
- 2 - ongoing and continual conflict surrounding visitation agreement or concerning support payments; father frequently ignores the agreement and/or harasses mother, threatens custody battle
- 2 - mother suing for support payments
- 2 - father fights for visitation rights
- 3 - father fights for custody

39. Separation of mother and child (explain) _____

(score this item as indicated below regardless of whether separation is considered "voluntary" or not)

Scoring Criteria:

- 1 - separations of greater than 4 weeks
- 1 - any prolonged separation which is stressful for mother (e.g., child spends holidays, summer, with father)
- 1 - for infants to age 4, separation of 1 to 2 weeks
- 2 - child taken away from mother (foster placement)
- 2 - for infants to age 4, separation of 2 to 4 weeks
- 3 - more than 1 child taken from mother (foster placement)
- 3 - for infants

Appendix 5: Relationship Tension Scale

Relationship Tension Scale Overview

The relationship tension scale was constructed based on interview information. This five point scale was designed to measure the degree of tension existing in the mother's primary relationship. Relationship Tension was defined as follows: may have several causes or only one; it may be present in every area of the relationship (e.g. sexual, financial) or it may be restricted to only one or two areas; in addition, it may be overt (i.e. obvious) or covert (i.e. subtle), chronic (i.e. habitual, on-going) or acute (i.e. sudden onset), or active (i.e. fighting, quarreling) or passive (i.e. relationship is cold, formal and characterized by emotional uninvolvedness or lack of concern); furthermore, relationship tension is a function of the degree of hostility, conflict, discord, and/or disharmony existing between mother and her mate.

Four trained raters scored each available interview on all subjects in the sample. Each rater was responsible for approximately 25% of the subjects. In order to determine interrater reliability, the author further scored each interview on randomly selected subjects for approximately 10% of the sample. Interrater reliability was calculated using correlations between the raters' and author's scores on tension across each of the eight assessment periods. Interrater reliability ranged from .94 to .97 on the tension scale.

Relationship Tension Scale Definition and Coding Instructions

Relationship Tension: Relationship tension may have several causes or only one; it may be present in every area (e.g. financial, sexual, etc.) of the relationship or it may be restricted to only one or two areas. In addition, relationship tension may be overt (i.e. obvious) or covert (i.e. subtle), chronic (i.e. habitual, on-going) or acute (i.e. sudden onset), or active (i.e. fighting, quarreling) or passive (i.e. relationship is cold, formal and characterized by emotional uninvolvedness or lack of concern). Relationship tension, as conceptualized in the rating scale, involves several components. These include hostility, conflict, discord, and/or disharmony. The scale is designed to measure the degree of the relationship tension existing between M and her mate, where “degree” is defined as a function of the degree of hostility, conflict, discord, and/or disharmony existing in the relationship and/or M’s reported feelings about her relationship with her mate.

Rules: (1) When rating the interviews, try to get a “feel” for the degree of hostility, conflict, discord, and/or disharmony (i.e. tension) in the relationship. Look for behaviors/events which indicate tension; do not look for those events which cause tension. For example, physical abuse and abandonment are two of several “indicators” of tension whereas birth of a child might cause tension but does not necessarily indicate that it exists. In addition to focusing on behaviors/events indicative of tension, look for M’s reported feelings about her relationship as well. Try to determine the magnitude of the tension from her comments; that is, is her comment simply a minor complaint (i.e. “minor” degree of tension), or does it indicate something more severe (i.e. “severe” degree of tension); (2) Remember, rate your perception of the degree of the relationship tension existing between M and her mate. Do not rate her perception of it (Ex. M is frequently physically abused by her mate but says it’s O.K. because she gets what she deserves. Code this as “severe” tension- your perception of the degree of hostility, etc.- instead of “mild” tension- M’s perception of the degree of hostility, etc.); (3) When rating relationship tension, keep duration in mind. If the primary relationship lasts for at least one-third of the time period covered in the interview, rate it. If the relationship lasts for less than one-third of the time interval, code it “8”; (4) If later interviews reveal previously unmentioned tension, go back and re-code the earlier interviews if and only if the previous time period is clearly specified. (Ex. M says “I didn’t tell you last time, but he was beating me then.”- go back and re-code). (Ex. M indicates that things haven’t always been as good as she said in the past.-do not go back and re-code.); (5) Do not code as relationship tension based on interviewer’s hunches. For example, if the interviewer says she has a hunch that there is a lot of abuse in the relationship, do not give a more severe rating than you would based on the available information in the interview.

Relationship Tension Scale

(5) Severe: Extreme degree of hostility, conflict, discord, and/or disharmony exists in the relationship between M and her mate. So extreme is the degree of tension that highly volatile and explosive interactions between M and her mate may result. Alternatively, M and her mate may be totally uninvolved with and detached from each other. They do not interact in any meaningful way and simply co-exist.

(4) Moderate: High degree of hostility, conflict, discord, and/or disharmony exists in the relationship between M and her mate. So apparent is the tension that one gets the sense of tenuity; in other words, it seems as though the situation could rapidly deteriorate and the tension rapidly escalate with the slightest provocation. Alternatively, M and her mate may be mostly uninvolved and detached from each other. They seldom interact in any meaningful way and for the most part co-exist, although there may be some conferring on matters of import.

(3) Mild: Medium degree of hostility, conflict, discord, and/or disharmony exists in the relationship between M and her mate. It appears as though, the existing tension is mildly disruptive to the relationship. Alternatively, M and her mate may frequently be uninvolved with and detached from each other and spend a lot of their time co-existing.

(2) Minor: Barely discernible degree of hostility, conflict, discord, and/or disharmony exists in the relationship between M and her mate. One gets the sense of low-grade tension permeating the relationship, although it does not appear to be disruptive. For example, M may complain that she doesn't get as much help as she'd like from her mate, thus indicating the existence of some tension, but it (i.e. tension) does not appear to have any major effect.

(1) Almost Non-Existent: Any hostility, conflict, discord, and/or disharmony evident in the relationship between M and her mate does not result in tension. In other words, although disagreements may exist, they do not result in hostility, conflict, discord, and/or disharmony. M and her mate appear to have found a healthy way of interacting which precludes the development of relationship tension.

(8) Not Relevant: M is not in a relationship OR primary relationship lasts for less than one-third of the time interval being reviewed.

(9) Unscorable: Use IF AND ONLY IF NO mention is made of any interaction(s) between M and her mate.