

Assessing Children's Emotional Security in the Interparental Relationship: The Security in the Interparental Subsystem Scales

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Guided by the emotional security hypothesis, this study reports on the development of a new self-report measure that assesses children's strategies for preserving emotional security in the context of interparental conflict. Participants were 924 sixth, seventh, and eighth graders and a subset of their mothers, fathers, and teachers. Exploratory and confirmatory factor analyses of the Security in the Interparental Subsystem (SIS) Scale supported a seven-factor solution, corresponding well to the three component processes (i.e., emotional reactivity, regulation of exposure to parent affect, and internal representations) outlined in the emotional security hypothesis. The SIS subscales demonstrated satisfactory internal consistency and test–retest reliability. Support for the validity of the SIS Scale is evidenced by its significant links with parent reports of children's overt reactivity to conflict, children's responses to interparental conflict simulations 6 months later, and children's psychological maladjustment and experiential histories with interparental conflict across multiple informants (i.e., child, mother, father, and teacher). Results are discussed in the context of developing recommendations for use of the SIS and advancing the emotional security hypothesis.

INTRODUCTION

Exposure to high levels of interparental conflict increases children's risk for a wide range of psychological problems, including internalizing and externalizing symptoms (e.g., Emery, 1982; Grych & Fincham, 1990). As empirical support for the direct effects of interparental conflict on children's functioning continues to accumulate (Cummings & Davies, 1994; Fincham, Grych, & Osborne, 1994), a new generation of research has emerged to address how and why children are directly affected by interparental conflict (Fincham, 1994). Serving as a guide in this process-oriented research, the emotional security hypothesis conceptualizes emotional security in the interparental subsystem as a primary mechanism that mediates the direct pathways between interparental conflict and child adjustment. According to this theory, children's difficulties in preserving the goal of emotional security develop, in part, from exposure to destructive histories of interparental conflict. The resulting emotional insecurity is hypothesized to increase children's risk for psychological problems (Cummings & Davies, 1996; Davies & Cummings, 1994). Progress in testing and refining this theory hinges on the development of assessments that precisely index the ways in which children regulate the goal of emotional security in the interparental relationship. Measurement batteries that assess emotional security are thin and sparse, however (Fincham, 1998), resulting in substantial lags between empirical tests and the theoretical articulation of emotional security. Therefore, the goal of this study was to describe the development of the Security in the Interparental Subsystem (SIS) Scale, a survey instrument designed to assess children's reports of how they preserve the goal of emotional security in the context of parental conflicts.

Children from homes characterized by significant parental discord are especially likely to be concerned about their own welfare and safety. Conflicts in these homes often continue for long periods, escalate in intensity, and spill over to affect the parent–child relationship and larger family system (Fincham et al., 1994; Grych, 1998). Accordingly, the emotional security hypothesis posits that the threat accompanying destructive interparental conflict (e.g., frequent, intense, and child related) increases children's concerns with preserving emotional security. Preserving emotional security in the interparental subsystem is considered to be a latent goal that regulates and is regulated by three concrete component processes: emotional reactivity, regulation of exposure to parent affect, and internal representations of interparental relations. Threats to the goal of preserving emotional security are posited to precipitate responding across the three component processes. Signs of insecurity in the face of interparental discord are reflected in (1) greater emotional reactivity (i.e., proneness to intense, prolonged, and dysregulated expressions of fear, vigilance, and distress), (2) excessive regulation of exposure to parent affect (i.e., avoidance of and involvement in interparental problems), and (3) hostile internal representations of the consequences that interparental conflict

has for the welfare of the self and family (Davies & Cummings, 1994, 1998).

The three component processes of emotional security are thought to serve as mechanisms that promote, to varying degrees, the attainment of felt security. First, the arousal and distress that accompanies heightened emotional reactivity may be initially adaptive in highlighting the potential threat present in high-conflict homes. This arousal may also energize children's physical and psychological resources so that they can quickly cope with stress and preserve their well-being (Saarni, Mumme, & Campos, 1998; Thompson & Calkins, 1996). Second, when emotional security is jeopardized, children may be motivated to expend resources to regulate their exposure to interparental conflict. By reducing exposure to interpersonal threat, avoiding or intervening in the conflict may be an effective means by which children regain some degree of emotional security (Cummings & Davies, 1996). Third, actively constructing a set of representations about the meaning that interparental conflict has for the family and self can provide a framework or map for identifying and predicting the interparental events that may undermine the well-being of the self and family (Thompson, Flood, & Lundquist, 1995). Thus, representational systems primed to the possibility of danger may help children gain a sense of security by enhancing their ability to protect themselves and their family.

The emotional security hypothesis also predicts that exposure to more destructive histories of interparental conflict will be related to greater emotional insecurity. This insecurity may be manifested in greater emotional reactivity, excessive regulation of exposure to parent affect, and hostile internal representations (Davies & Cummings, 1994). Consistent with these predictions, children from high-conflict homes exhibit greater distress, fear, and vigilance in response to parental conflicts and conflict simulations (e.g., Ballard, Cummings, & Larkin, 1993; Davies & Cummings, 1998; El-Sheikh, 1997; Garcia O'Hearn, Margolin, & John, 1997; Gordis, Margolin, & John, 1997). They also display more hostile internal representations of the harmful implications that interparental difficulties may have for the welfare of the self and family (e.g., Davies & Cummings, 1998; Grych, 1998; Grych, Seid, & Fincham, 1992; Harold & Conger, 1997; Harold, Fincham, Osborne, & Conger, 1997). Other studies have found that destructive interparental conflict histories predict greater avoidance and involvement in family stress (e.g., see Cummings & Davies, 1996; Garcia O'Hearn et al., 1997; Sandler, Tein, & West, 1994). Data that address the link between interparental conflict history and forms of regulating exposure

to parent affect, however, have been more difficult to reconcile. For example, a growing number of studies have reported complex or null findings, especially for measures of avoidance (e.g., Davies & Cummings, 1998; Gordis et al., 1997; Ingoldsby, Shaw, Owens, & Winslow, 1999; O'Brien, Bahadur, Gee, Balto, & Erber, 1997; O'Brien, Margolin, & John, 1995).

Although it may be adaptive for children from high-conflict homes to be concerned about their security, the theory postulates that these concerns may be maladaptive for their long-term psychological adjustment. The vigilance, distress, and preoccupation that result from exposure to parental difficulties are thought to increase children's risk for more pervasive psychological difficulties, such as internalizing and externalizing symptoms. Frequent, prolonged operation of the emotional security system also requires substantial psychological and physical resources (e.g., regulation of attention, affect, thought processes, and actions). Thus, substantial efforts to regain emotional security may limit the resources children need to pursue other significant developmental goals and tasks and, as a result, increase their vulnerability to maladjustment (Saarni et al., 1998; Thompson & Calkins, 1996).

In support of these hypotheses, assessments of children's emotional reactivity (e.g., subjective and overt distress) in response to parental conflict have predicted their concurrent and subsequent psychological maladjustment (e.g., Davies & Cummings, 1998; Davis, Hops, Alpert, & Sheeber, 1998; Harold & Conger, 1997). Children's psychological difficulties have also been predicted concurrently and prospectively by their appraisals of the threat posed by interparental conflict for their own and the family's well-being (Davies & Cummings, 1998; Grych, Fincham, Jouriles, & McDonald, 2000; Grych, Jouriles, Swank, McDonald, & Norwood, 2000; Osborne & Fincham, 1996; Rogers & Holmbeck, 1997). In the small number of studies conducted, links between children's psychological adjustment and their avoidance of and involvement in parental conflict have been more complex and inconsistent. For example, forms of involvement that reflect high levels of psychological investment and risk on the child's part (e.g., comforting and protecting parent, helping to solve adult problems, acting as a confidante) have been shown to be positively associated with adjustment problems within the context of the father-child relationship, but negatively related to adjustment problems in the mother-child relationship (Johnston, Gonzalez, & Campbell, 1987; also Gordis et al., 1997; Ingoldsby et al., 1999). Thus, whether regulating exposure to parent affect is a successful way of reducing exposure to stress or a

dysfunctional process that increases psychological risk for children remains unresolved (Cummings & Davies, 1996; Sandler et al., 1994).

Although recent research has generally supported the mediational role of emotional security in the link between interparental conflict and child functioning (e.g., Davies & Cummings, 1998; Davies, Myers, Cummings, & Heindel, 1999), assessments of children's reactivity to parental conflict have been largely limited to mildly stressful simulations of conflict between unfamiliar adults in unfamiliar laboratory settings (Fincham, 1994). Although analogue and laboratory designs are valuable parts of a multimethod, multisetting research program, they are not intended to stand on their own. If employed in isolation, they may produce an inadequate, skewed, and even artificial barometer of how children attain emotional security in the interparental relationship (Cummings, 1995; Rutter, 1994). For example, using small samples of mildly stressful analogues of conflict may yield unrepresentative samples of how children preserve their security, because they do not simulate the conflict characteristics (e.g., intense) that pose a threat to children's security (Sternberg et al., 1993; Wells & Windschitl, 1999). Likewise, using conflicts that involve unfamiliar adults in strange settings may underestimate children's loyalty pulls, concerns about actual family dissolution, and realistic fears of parental reprisals that may accompany parental conflicts. Thus, although various conflict simulations may "activate" the emotional security system, witnessing mild, abbreviated conflict simulations limits their ecological validity (Davies & Cummings, 1998).

Relative to other types of assessments, collecting laboratory-based data is also typically expensive and time consuming. Specialized training and access to specific types of resources and equipment are often necessary for developing conflict stimuli, implementing analogue procedures, and devising coding systems for behavioral or narrative streams of data (Cummings, 1995). As a result, tests of the emotional security hypothesis have been confined to a small set of laboratories and examined using relatively small sample sizes. Thus, the generalizability of these findings and the statistical power to detect theoretically meaningful mediator and moderator effects is limited.

Increasing the diversity, breadth, and flexibility of emotional security assessments requires the development of measures that tap children's emotional security in the naturalistic context of the interparental relationship. Accordingly, the survey format of the SIS Scale was designed to provide an efficient method for assessing children's emotional security in the interparental relationship. Although self-report instruments

suffer from their own set of limitations, they have advantages that offset the limitations of laboratory designs. First, because previous research has relied heavily on laboratory simulations, the development of a self-report instrument provides a tool that can be used to build a multimethod, multisetting battery of emotional security measures. Second, as cost-effective assessment tools, self-report instruments increase the feasibility of recruiting the large samples necessary to test multivariate statistical models of emotional security. Third, developing a reliable and valid self-report instrument may increase the ecological validity or confidence that findings from analogue research actually operate in the naturalistic context of the family.

Several considerations guided our selection of a sample of early adolescents for testing the psychometric properties of the SIS Scale. Valid reports of emotional security require assessments of functioning across multiple response domains, including behaviors, thoughts, feelings, and impulses (Cummings & Davies, 1996). Thus, although elementary school children may be able to accurately report on concrete behaviors, accurate recall of both behaviors and subjective experiences does not reliably emerge until pre- and early adolescence (La Greca, 1990). Moreover, ample evidence suggests that interparental discord remains a potent risk factor for children's psychological adjustment during early to middle adolescence (e.g., Buchanan, Maccoby, & Dornbusch, 1991; Jouriles, Spiller, Stephens, McDonald, & Swank, 2000; Sim & Vuchinich, 1996). A considerable amount of this risk may be attributable to adolescents' increased sensitivity and reactivity to interparental conflict. First, early adolescents are not only more adept than their younger counterparts at interpreting the psychological, affective, and relational meaning of adverse interpersonal and family events (Davies, Myers, & Cummings, 1996; Kurdek & Rodgon, 1975; Selman, 1980), but their resulting appraisals may also evidence more consistency over time and across contexts (Jouriles et al., 2000; Turner & Cole, 1994). Thus, mediational pathways among interparental conflict, internal representations of interparental relationships, and child adjustment may be especially pronounced for early adolescents (Davies et al., 1996; Jouriles et al., 2000). Second, although age differences in coping with parental conflict are difficult to interpret (Buchanan et al., 1991; O'Brien et al., 1995, 1997; Roeker, Dubow, & Donaldson, 1996), some evidence suggests that endorsements of avoidance and involvement do remain stable or even peak during early and middle adolescence (Cummings, Ballard, El-Sheikh, & Lake, 1991; Davies et al., 1996; Davies et al., 1999). Finally, children's and early adolescents' reports of negative emotionality in

response to adult or parental conflict are generally comparable, especially relative to the marked decrease in emotional reactivity occurring later in adolescence (Cummings, Ballard, & El-Sheikh, 1991; Davies et al., 1996; Davies et al., 1999; Grych, 1998). Thus, emotional reactivity appears to remain a salient part of children's responding to interparental conflict.

Predictions derived from the emotional security hypothesis provided a set of criteria for evaluating the psychometric adequacy of the SIS Scale. Guided by the principle that emotional security can be expressed in a myriad of ways across and within the three component processes, we first hypothesized that the SIS Scale would yield a factor structure characterized by multiple and relatively distinct indicators of emotional reactivity, regulation of exposure to parents, and internal representations (Davies & Cummings, 1998). Emotional reactivity items were specifically designed to tap frequent, prolonged, and dysregulated negative affect in the context of interparental conflicts. Indicators of regulating exposure to parent affect were expected to yield measures of avoidance of and involvement in parental conflicts. Finally, internal representation items were designed to distinguish among children's appraisals of the consequences that marital conflict has for their own and their families' welfare. Although each of these dimensions is assumed to be a distinct part of the system, they are also hypothesized to evidence moderate levels of interdependence in reflecting a common goal of preserving children's security (Davies & Cummings, 1995, 1998; Ingoldsby et al., 1999; O'Brien et al., 1997).

To test the concurrent and predictive validity of the SIS Scale, it was hypothesized that the SIS subscales would be associated with measures of emotional security collected using multiple informants, methods, and measurement occasions. Specifically, children's overt responses to interparental conflict were gathered concurrently through mothers' and fathers' reports, whereas children's responses to audiotaped simulations of interparental conflict were obtained in the laboratory 6 months later. We hypothesized that the SIS subscales would evidence more robust associations with parent and analogue measures of children's security when they tapped theoretically similar processes. For example, SIS assessments of emotional reactivity should be most closely related to parent reports of overt distress and analogue measures of children's subjective distress, whereas SIS reports of conflict involvement should relate to parent and laboratory assessments of involvement. Because each SIS scale taps subjective emotional and cognitive experiences that are not always observable by raters, we expected that the correlations among child and

parent reports of emotional security would be modest to moderate in magnitude. The lack of valid analogue or parent-report measures of children's avoidance or their representations of conflict spillover to parent-child relationships precluded the development of hypotheses for these factors.

If emotional security is a mediator of the effects of interparental conflict, then the SIS measures of emotional insecurity should also be correlated with children's histories of exposure to destructive interparental conflict and psychological maladjustment. Thus, as a further test of the validity of the SIS Scale, associations between the SIS subscales and children's exposure to destructive interparental conflict and their psychological adjustment were examined. In light of the earlier abundance of empirical evidence (e.g., Davies & Cummings, 1998; Harold & Conger, 1997), children's emotional reactivity and internal representations (e.g., conflict spillover) were hypothesized to be most strongly related to interparental conflict and child maladjustment, whereas corresponding links involving regulation of exposure to parent affect (e.g., avoidance, involvement) were hypothesized to be weaker and more inconsistent. Earlier research and theory has further highlighted the role of child gender as a moderator of interparental discord, especially during adolescence. Although evidence for the moderating effects of gender do not always emerge, adolescent girls may become more susceptible than adolescent boys to interparental conflict by virtue of their greater sensitivity to the quality of close relationships (i.e., family) and the special significance that they place on the family in maintaining their well-being and self-worth (Davies & Lindsay, 2001). Thus, guided by our tentative hypothesis that preserving security would be more significant for girls than for boys during adolescence, gender differences in relations between the SIS scales and (1) interparental conflict and (2) psychological adjustment were examined.

METHOD

Participants and Procedure

The participants in this study were recruited from a pool of 1,290 sixth-, seventh-, and eighth-grade students and their caregivers from a public middle school in a working and middle-class suburb of a metropolitan area. Consistent with previous research (Kurdek & Fine, 1994; Steinberg, Lamborn, Dornbusch, & Darling, 1992), a two-step procedure was used to obtain child consent to participate. In the first step, a "passive" parental consent procedure was

used in which parents were assumed to provide consent for the children to participate unless they returned a refusal form in a postage-free envelope or contacted school or research administrators by phone. In the second step, an "active" child consent procedure was used in which children were given an option to refuse participation after receiving a description of the study.

Students who elected to participate completed the survey packet in their classrooms under the supervision and guidance of a trained research assistant. Participating children were entered into a lottery for a chance to win several gift certificates to a multimedia store and local movie theater. The participation rate among students was 80%, yielding a total sample of 1,032 students. Reasons for nonparticipation included school absence (5.5%), parental refusal (8.9%), and child refusal (5.6%). Children who reported having a mother and father figure and who completed the SIS instrument were included in the present study. Ninety percent of the sample met this criterion, resulting in a sample of 924 students for the present study. The sample was relatively evenly divided in terms of gender (boys, $n = 466$; girls, $n = 458$) and grade (sixth, $n = 304$; seventh, $n = 336$; and eighth, $n = 284$). The average age of the children was 12.57 years ($SD = .97$; $range = 9, 11-14, 11$). The ethnic composition of participating students was comparable with the student body of the school: 82% non-Hispanic European American, 9% African American, 5% Hispanic, 2% Asian or Pacific Islander, and 2% Native American. Approximately 70% reported that their mother and father were married, with the remaining children reporting that they were divorced (20%), separated (8%), or cohabitating (2%). Teachers were asked to complete brief behavior checklists for each child participant.

Parents of participating children were also sent mail survey forms that assessed family, interparental, and child functioning to complete and return in a postage-free envelope. Small incentives in the form of coupons to a home furnishings store and chances to win family education books and gift certificates to local stores were offered to parents who returned the questionnaire packet. Parents with more than one child in middle school were instructed to complete the survey for only one of their children. After several mailings, primary caregivers of 269 children completed and returned the surveys. Thus, after excluding siblings, 23% of the parents with students in the middle school participated in the survey. Participating parents were included in the present study if they (1) completed the study measures of interparental conflict, emotional security, and child adjustment; (2)

reported on the same interparental relationship as the child; and (3) maintained regular contact with the other parent at the time of the survey. The resulting sample consisted of 172 mothers and 88 fathers of 201 children, with 60 mothers and fathers having completed the surveys from the same family. Marital status of the children's biological parents in the samples of participating mothers and fathers (denoted in parentheses) were as follows: 86% (86%) married or cohabitating, 10% (13%) divorced, and 4% (1%) separated. Demographic data indicated that this subsample was primarily European American and middle class. Median family income for this sample exceeded \$40,000, with only 3% reporting income below \$17,000. The average number of years of education completed by mothers and fathers was 14.0 ($SD = 2.32$) and 14.1 ($SD = 2.64$), respectively. Children in these families were mostly European Americans (92%), followed by small percentages of African Americans (4%), Native Americans (2.7%), Hispanics (1%), and Asian Americans (<1%).

Approximately 6 months after the survey assessment, mother and child participants were also invited to visit our laboratory if they had indicated an interest in future research participation in their survey packets. Fifty-four child participants (29 girls, 25 boys) visited the university laboratory to participate in an analogue conflict task. The average age of the children was 12.30 years ($SD = 1.09$). After being instructed to imagine that the conflicts were taking place between their parents, each child listened to four audiotaped conflicts between an adult male and female. The vignettes—which were designed to vary in terms of intensity, content, and course—consisted of two mildly angry disagreements affectionately resolved by the adults, and two moderately angry, unresolved disagreements. Each pair of conflicts varied systematically by topic (i.e., one adult and one childrearing issue). After each vignette, children responded to a series of questions designed to assess the three components of emotional security.

Measures

SIS Scale. The SIS Scale was initially comprised of 40 items developed to assess dimensions of emotional reactivity, regulation of exposure to parent affect (i.e., involvement, avoidance), and internal representations of interparental relationships (e.g., appraisals of the impact of conflict on family and parent-child subsystem). Children rated each statement based on how true it was for them over the past year using a 4-point continuum (1 = not at all true of me, 4 = very true of me; see the Appendix for specific items and format).

Scale development was based largely on reviews of children's interview transcripts, observational data, and coding systems derived from earlier research on children's responses to interparental and interadult conflict of relevance to the emotional security hypothesis (e.g., Davies & Cummings, 1995, 1998; Davies et al., 1999). Existing survey scales and home diary forms were also used as guides in generating some of the items (i.e., Children's Perception of Interparental Conflict Scale [CPIC]: Grych et al., 1992; Home Data Questionnaire: Garcia O'Hearn et al., 1997; Family Structure Survey: Lopez, Campbell, & Watkins, 1988). Three SIS Scale items were specifically selected from the CPIC (Grych et al., 1992) after making slight changes in wording or sentence structure. To optimize the readability and intended meaning of the SIS Scale items, revisions in the contents of the items and survey format were conducted through pilot tests with a small group of children.

Destructive marital conflict. Children provided reports of their exposure to destructive conflict histories by completing the frequency, intensity, resolution, and content subscales of the CPIC (Grych et al., 1992). Children responded to each statement describing destructive forms of interparental conflict by endorsing "true," "sort of true," or "false." The subscales, their definitions, and sample items are as follows: (1) the frequency subscale taps the number of times children are exposed to interparental arguments (e.g., "I often see my parents arguing"; six items), (2) the intensity subscale assesses children's exposure to verbally and physically aggressive conflict tactics (e.g., "When my parents have an argument, they yell a lot"; seven items), (3) the resolution subscale indexes children's exposure to unresolved disagreements and anger between their parents (e.g., "Even after my parents stop arguing they stay mad at each other"; six items), and (4) the content subscale assesses the degree to which children are exposed to disagreements centering on child-related issues (e.g., "My parents' arguments are usually about something I did"; four items). These CPIC subscales demonstrate good reliability as indexed by both internal consistency, α for the four scales ranged from .78 to .86 in the present study, and test-retest reliability (see Grych et al., 1992). The validity of the CPIC subscales is supported by their significant interrelations with ratings of child adjustment and interparental conflict across multiple informants (e.g., Cummings, Davies, & Simpson, 1994; Grych et al., 1992, 2000; Harold et al., 1997). Given the theoretical focus on children's cumulative exposure to destructive conflict, the four CPIC subscales were standardized and summed to form a composite, $\alpha = .92$.

Mothers and fathers completed a comparable subset of scales from the Conflict and Problem-Solving Scales (CPS; Kerig, 1996) to assess the level of destructive interparental conflict in the home. The Frequency, Verbal Aggression, Physical Aggression, and Child Involvement Scales were specifically selected to serve as indices of destructive conflict because they closely correspond to conflict dimensions (i.e., frequency, intensity and form, and child related) that are postulated to undermine children's emotional security (Davies & Cummings, 1994; see also Kerig, 1998). Frequency assesses the number of times parents report engaging in minor (e.g., "spats") and major (e.g., "big fights") conflicts over the past year, with response alternatives ranging on a 6-point scale from 1 (once a year or less) to 6 (just about every day). Items on the remaining scales are rated on 4-point scales (0 = never, 3 = often) reflecting the frequency with which parents and their partners engage in (1) verbally aggressive conflict tactics such as yelling, accusing, and insulting (i.e., Verbal Aggression; eight items); (2) physically aggressive conflict tactics, including threatening or inflicting physical harm (i.e., Physical Aggression; seven items); and (3) strategies that involve the child in parental conflicts, such as arguing in front of the child, and drawing the child into the argument (i.e., Child Involvement; five items). Internal consistency, test-retest reliability, and various forms of validity of the CPS are well established (Kerig, 1996, 1998). In the present sample, the CPS scales yielded acceptable internal consistency, α ranged from .75 to .89; $M \alpha = .84$. Parent ratings on the four scales were standardized and summed to form comprehensive assessments of mother and father ratings of destructive interparental conflict. Alpha coefficients for items comprising the composite were .93 and .94 for mother and father reports, respectively.

Children's overt reactivity to interparental conflict. Mothers and fathers reported on overt signs of children's emotional and behavioral reactivity using a survey measure developed from an earlier diary assessment of children's responses to interparental conflict (Home Data Questionnaire-Adult Version; Garcia O'Hearn et al., 1997). In the original measure, parents indicated the presence or absence of several forms of emotional and behavioral reactivity, including distress, sadness, fear, misbehavior, and intervention. The validity of this measure is supported by its theoretically meaningful relations with children's exposure to destructive histories of interparental conflict. The measure was revised in two primary ways for this study. First, parents were asked to rate how well each item described their children's reactions to witnessing interparental arguments over the past

year using a 5-point scale (1 = not at all like him/her, 5 = a whole lot like him/her). Second, additional items were developed for the purpose of forming multi-indicator measures of different dimensions of emotional security that are theoretically similar to the SIS subscales. The three scales resulting from these adaptations were as follows: (1) Overt Distress: four items that tap overt emotional arousal and dysregulation (e.g., appears frightened, still seems upset after we argue), $\alpha = .78$ and $.64$ for mothers and fathers, respectively; (2) Behavioral Dysregulation: three items that reflect loss of behavioral control (e.g., causes trouble, starts yelling or saying unkind things), $\alpha = .64$ and $.65$ for mothers and fathers, respectively; and (3) Behavioral Involvement: five items that reflect overt intervention in the arguments (e.g., tries to help us solve the problem, tries to comfort one or both of us), $\alpha = .69$ and $.70$ for mothers and fathers, respectively.

Children's reactions to simulated conflict vignettes. Children's interview responses to each of the four audiotaped interparental conflict simulations were designed to assess four indicators of their emotional security in the context of standardized interparental conflicts. As a measure of emotional reactivity, children rated how "angry," "sad," and "worried" they would feel if they were in the same room as their parents during each of the conflicts by selecting a response along a 6-point continuum ranging from 0 (not at all) to 5 (a whole lot). These items evidenced good reliability for each of the four vignettes, $M \alpha = .81$. The mean correlation among the vignette scores was $r(54) = .28$. The items were summed across four vignettes to form a single index of emotional reactivity.

For each of the four conflict vignettes, five interview items assessed children's reports of involvement. Four of these items assessed children's endorsements of behavioral involvement (e.g., "try to solve the problem for them," "distract them by bringing up other things"), using the same response continuum as the emotional reactivity questions. To assess intervention impulses, the final item indexed the extent to which children agreed that making their parents feel better was an important goal when witnessing the simulated conflict. Because the response continuum for the latter item used a different scale metric (5-point scale) than the other questions, the items were standardized and summed for each vignette. Internal consistencies for the items within each of the vignettes were satisfactory, $M \alpha = .77$. All items across the four vignettes were subsequently summed to form a single index of involvement. The mean correlation coefficient among the four vignettes was $.72$.

Children's internal representations of the implications of interparental conflict for family welfare were

assessed through measures of positive family representations (two items; "how much would you expect that your family would still get along with each other" and "how much would you believe your parents still love each other") and negative family representations (two items; "worry about your family's future" and "worry that they might divorce or separate"). Children responded to each question using the same scale format as the emotional reactivity questions. Mean α coefficients, calculated for each of the four vignettes, were $.55$ and $.85$ for positive and negative representations, respectively. Measures of positive and negative family representations were each aggregated across the four conflict vignettes. The mean correlation coefficients among the positive and negative representation vignettes were $.47$ and $.39$, respectively.

Child adjustment. Children and parents completed the anxious/depressed, withdrawn, delinquent behavior, and aggressive behavior subscales from parallel forms of the Youth Self-Report (YSR) and Child Behavior Checklist (CBCL), respectively (Achenbach, 1991). The YSR and CBCL are widely used and well-validated measures of child adjustment problems (see Achenbach, 1991). For each informant (i.e., mother, father, and child), withdrawn and anxious/depressed subscales were summed to form an internalizing symptoms measure, whereas the delinquency and aggression subscales were summed to form an externalizing symptoms measure. Internal consistency coefficients for mother, father, and child reports for each measure exceeded $.88$. Teachers also reported on children's externalizing symptoms by completing five items (e.g., "teases a lot," "gets in many fights") derived from the Teacher Report Form (TRF), an instrument designed to parallel the YSR and CBCL (Achenbach, 1991), $\alpha = .84$. The TRF data were included in the present study if teachers completed all items and reported knowing each child for at least 4 weeks. These criteria yielded a sample of 713 children (77% of the sample).

RESULTS

Factor Structure

Although the emotional security hypothesis specifies a set of predictions about the indicators of the component processes of emotional security, the specific items comprising each hypothesized factor were examined empirically. Thus, to delineate the factor structure of the SIS Scale, both an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) were performed on two subsamples derived

from the larger sample of 924 child participants. Sample 1 consisted of the 269 students whose parents returned their family and child survey packets. Sample 2 was comprised of the 655 participating students whose parents failed to return the surveys. Because parents who participate in research studies tend to have families and children that display higher levels of psychosocial competence (Weinberger, Tublin, Ford, & Feldman, 1990), this split was intended to yield differences in sociodemographic and family characteristics across the samples. It specifically provides a conservative test of the stability of the SIS Scale factor structure across two relatively different samples. Consistent with our aim, analyses testing for differences between participating and nonparticipating caregivers revealed some sample differences in sociodemographic characteristics, marital conflict, and psychological adjustment. Whereas children in Sample 1 reported more internalizing symptoms than children in Sample 2, $p < .05$, effect size = .13, children in Sample 2 exhibited higher rates of self-reported exposure to destructive interparental conflict, $p < .025$, effect size = .17, and teacher-reported externalizing problems, $p < .05$, effect size = .19. Sample 1 also contained higher proportions of European American children (90%) than Sample 2 (77%), $\chi^2(1) = 23.43$, $p < .001$.

The EFA, which extracted factors using maximum likelihood estimation, was conducted on the SIS Scale for Sample 1. An oblique rotation was applied to the solution in light of our theory-driven expectation that the SIS subscales would be interrelated. After dropping three additional items due to low loadings (i.e., item weights $< .30$), high complexity (i.e., similar loadings on multiple factors), and poor theoretical fit with the factor (Tabachnick & Fidell, 1996), a seven-factor solution was accepted in the final EFA on the basis of the analysis of eigenvalues, scree plots, and the theoretical interpretability of the factors, $\chi^2(428) = 656.25$, $p < .001$. Together, the solution accounted for 61% of the total variance. The eigenvalues of all seven factors were > 1.0 .

Table 1 shows the factor pattern matrix from the EFA. The first and third factors could be classified as different dimensions of emotional reactivity. The first factor (nine items) was labeled emotional reactivity because its items tapped frequent, prolonged, and dysregulated expressions of negative affect. By contrast, the third factor, labeled behavioral dysregulation, consisted of indicators of behavioral arousal and lack of control. The second, fourth, and sixth factors, each consisting of four items, were classified as different forms of internal representations. The second and fourth factors both tapped children's appraisals of the implications that interparental conflict has for the welfare of the family. The second factor, labeled con-

structive family representations, reflected appraisals of conflict as benign or constructive for the family, whereas the fourth factor, termed destructive family representations, reflected appraisals of the deleterious consequences of conflict for the family. The sixth factor, termed conflict spillover, gauged children's beliefs that the conflicts between parents would proliferate and spill over to affect their own well-being and relations with their parents. The fifth (seven items) and seventh (six items) factors characterized different forms of regulating exposure to parent affect. The fifth factor was labeled avoidance because the items reflected strategies used to escape interparental conflict or its adverse aftermath. The seventh factor, involvement, indexed dispositions to become emotionally (e.g., concern for parents) and behaviorally (e.g., comfort, solve problem) involved in parental conflicts.

A CFA was conducted to examine the replicability of the seven-factor solution in Sample 2. The confirmatory model was constructed by freeing each variable on the factor specified in the seven-factor model while constraining all other loadings to 0. Although the overall fit of the seven-factor model varied somewhat across the different fit indices, it was generally within the range of adequate fit, $\chi^2(608) = 1944.16$, $p < .001$, χ^2/df ratio = 3.20, root mean square error of approximation (RMSEA) = .058, comparative fit index (CFI) = .86, Tucker-Lewis index (TLI) = .84. For example, the χ^2/df ratio, ≤ 5 , and the RMSEA, $< .08$, exceeded the standards of good model fit (MacCallum, Brown, & Sugawara, 1996). Moreover, although the TLI and CFI values were below the .90 standard commonly recommended for adequate fit, the misspecification could not be primarily attributed to the internal coherence of the factors. For example, Table 1 shows that all but one of the factor loadings of the items in the model exceeded .45. Given the hypothesized interdependency among the SIS Scale items and the large number of variables submitted to the CFA (Floyd & Widaman, 1995), the misspecification appears to lie in covariances among the error terms.

Reliability and Interrelations of the SIS Scales

The internal consistency (α) and test-retest reliability coefficients for the seven factors or subscales are presented in Table 2. The α coefficients for six of the seven subscales exceeded the .70 standard of acceptability for both samples (Nunnally, 1978). The marginally acceptable α coefficients of the three-item behavioral dysregulation subscale, α s = .65, .52, may be attributable, in part, to the tendency for smaller scales to yield lower internal consistency values.

Table 1 Factor Loading Matrix of the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)

	EFA (CFA)						
	1	2	3	4	5	6	7
8. Can't calm myself down	.73 (.70)						
24. Can't stop thinking about problems	.66 (.73)						
9. Can't shake off my bad feelings	.63 (.76)						
7. Ruins my whole day	.61 (.64)						
3. Feel angry	.54 (.60)						
4. Feel unsafe	.51 (.56)						
1. Feel sad	.48 (.55)						
2. Feel scared	.48 (.66)						
12. Try to hide feelings	.38 (.58)						
35. They still love each other		.92 (.84)					
36. Everything will be okay		.88 (.86)					
43. They can work out differences		.70 (.71)					
34. Family is still able to get along		.59 (.71)					
14. Hit, kick, slap, or throw things			.62 (.65)				
13. Yell or say unkind things			.56 (.69)				
19. Clown around or cause trouble			.51 (.28)				
39. Worry what they're going to do next				.64 (.86)			
38. Worry about family's future				.62 (.76)			
42. Wonder if they will separate or divorce				.61 (.58)			
40. Don't know how to get along				.46 (.46)			
22. Try to be really quiet					.72 (.67)		
31. Try to get away from them					.59 (.55)		
29. Feel like staying far away from them					.57 (.46)		
11. Keep really still, almost as if frozen					.44 (.57)		
23. Do nothing, but wish I did something					.42 (.67)		
15. Don't know what to do					.37 (.59)		
27. Wait and hope things get better					.30 (.58)		
33. Feel like they're upset with me						.75 (.81)	
37. Feel like it's my fault						.70 (.78)	
41. Think they blame me						.45 (.63)	
21. Feel caught in the middle						.39 (.70)	
16. Distract by bringing up other things							.62 (.55)
28. Try to comfort one or both of them							.58 (.63)
18. Try to be on my best behavior							.57 (.62)
30. Try to pretend that things are better							.39 (.52)
6. Feel sorry for one or both parents							.35 (.53)
26. Try to solve the problem for them							.30 (.53)

Note: Values without parentheses are the factor loadings from the EFA. Values in parentheses are the factor loadings from the CFA.

Test-retest reliability coefficients calculated over a 2-week period with a sample of 90 children were also within the acceptable range, exceeding $r(90) = .70$ for every scale except Behavioral Dysregulation. As hypothesized, correlations between the scales were, on average, moderate in strength, $M r(924) = .35$.

Descriptive Statistics and Preliminary Analyses

Table 3 shows the means and standard deviations for boys, girls, and the overall sample. Gender differences in the mean levels of the emotional security variables were assessed through a series of t tests. The findings indicated that relative to boys, girls endorsed higher levels of emotional reactivity, avoidance, in-

volvement, destructive family representations, and conflict spillover representations. Effect sizes for significant gender differences were small, ranging from .13 to .22 (Cohen, 1987).

Preliminary analyses were also conducted to examine whether the psychometric properties of the SIS subscales varied as a function of family structure (i.e., intact versus divorced families). To examine whether factor structure of the SIS Scale varied across family structure, estimated factor loadings were constrained to equivalence across intact and divorced families for the overall sample ($N = 924$). Comparisons of fit between constrained and unconstrained models revealed negligible differences: $TLI_{\text{difference}} = .002$, $RMSEA_{\text{difference}} = .000$, and $\chi^2/df \text{ ratio}_{\text{difference}} = .015$.

Table 2 Internal Consistency, Test–Retest Reliability, and Intercorrelations of the Security in the Interparental Subsystem Scales

Scales	Factor Intercorrelations						Internal Consistency		Test–Retest Reliability
	1	2	3	4	5	6	Sample 1	Sample 2	
Emotional reactivity									
1. Emotional Reactivity							.89	.86	.87**
2. Behavioral Dysregulation	.24**						.65	.52	.59**
Regulation of exposure to parent affect									
3. Avoidance	.64**	.13**					.80	.79	.76**
4. Involvement	.49**	.07*	.50**				.72	.74	.70**
Internal representations									
5. Constructive Family Representations	–.18**	–.18**	.05	.25**			.86	.86	.78**
6. Destructive Family Representations	.64**	.24**	.50**	.33**	–.29**		.84	.76	.80**
7. Conflict Spillover Representations	.65**	.30**	.53**	.33**	–.19**	.55**	.83	.81	.85**

Note: *N*s for the factor intercorrelations, Sample 1, Sample 2, and test–retest sample were 924, 269, 655, and 90, respectively.

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

Thus, the factor structure of the SIS Scale was comparable across family structure. Furthermore, tests of differences in the magnitude of validity correlations (Tables 4 through 7) between intact and nonintact families yielded no more moderating effects than would be expected by chance. Therefore, samples of intact and divorced families were combined to maximize the flexibility and utility of the SIS Scale across different family forms.

Validity I: Prediction of Children's Conflict Reactivity across Different Informants and Settings

The validity of the SIS Scale was first examined by evaluating its ability to predict parental reports of

children's overt conflict reactivity. Hypothesized interrelations, which reflect linkages between theoretically similar processes, are boldfaced in Table 4. The majority of the hypothesized interrelations were significant and generally moderate in strength, as evidenced by a mean correlation coefficient of .33. In contrast, associations between the SIS subscales and the theoretically distinct responses were relatively weak in magnitude, as reflected in the mean correlation coefficient value of .13. For example, emotional reactivity subscale moderately correlated with mother and father reports of overt emotional distress. Similarly, behavioral dysregulation subscale was associated with parent reports of behavior dysregulation.

Table 3 Security in the Interparental Subsystem Scales Means and Standard Deviations for the Overall Sample and Each Gender

	Overall Sample		Gender Differences				<i>t</i> (925)
			Boys		Girls		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Emotional reactivity							
Emotional reactivity	16.27	6.17	15.60	5.94	16.96	6.32	3.37**
Behavioral dysregulation	4.00	1.58	4.08	1.67	3.93	1.48	1.49
Regulation of exposure to affect							
Avoidance	15.45	5.02	15.05	5.00	15.85	5.01	2.42*
Involvement	13.14	4.06	12.79	4.03	13.48	4.06	2.59**
Internal representations							
Constructive family representations	12.81	3.53	12.88	3.56	12.73	3.50	0.64
Destructive family representations	6.60	3.05	6.38	2.91	6.83	3.16	2.29*
Conflict spillover representations	6.20	2.88	6.02	2.68	6.39	3.05	1.98*

Note: *N*s for the overall sample, boys, and girls were 924, 466, and 458, respectively.

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

Table 4 Correlations between Security in the Interparental Subsystem (SIS) Scales and Parental Reports of Children's Overt Reactivity to Interparental Conflict

Father SIS Scales	Mother Report of Reactivity ^a			Father Report of Reactivity ^b		
	Distress	Behavior Dysregulation	Involvement	Distress	Behavior Dysregulation	Involvement
Emotional reactivity						
Emotional Reactivity	.32**	.07	.15*	.39**	.09	.11
Behavioral Dysregulation	.14	.52**	.05	.20	.27**	-.06
Regulation of exposure to parent affect						
Avoidance	.14*	.02	.03	.33**	.02	.10
Involvement	.18*	.04	.20**	.20	.09	.26*
Internal representations						
Constructive Family Representations	-.14	-.20**	-.13	-.02	-.29**	.11
Destructive Family Representations	.32**	.17*	.20**	.24*	.07	.10
Conflict Spillover Representations	.26**	.19**	.18*	.25*	.13	.09

Note: Hypothesized correlations are boldfaced.

^a $df = 172$.

^b $df = 88$.

* $p < .05$; ** $p \leq .01$.

To test the predictive validity of the SIS Scale, we evaluated whether the SIS subscales would predict children's responses to the four audiotaped simulations of interparental conflict 6 months later. Hypothesized linkages between theoretically similar processes are boldfaced in Table 5. The SIS subscales were moderate predictors of conceptually similar response processes in the conflict simulation task, $M r(54) = .56$. For instance, the SIS destructive family representations subscale predicted children's negative appraisals of interparental relationships in the

simulated parental conflicts, whereas the SIS emotional reactivity subscale most strongly predicted children's reports of distress. Moreover, relations among the SIS subscales and theoretically distinct response processes were generally weak, $M r(54) = .15$.

Validity II: Interrelations with Interparental Conflict and Child Adjustment

The validity of the SIS Scale was also examined by evaluating its relation to children's experiential histo-

Table 5 Correlations between the Security in the Interparental Subsystem (SIS) Scales and Children's Responses to Simulated Interparental Conflicts

SIS Scales	Children's Responses to Audiotaped Conflict Simulations			
	Distress	Involvement	Positive Family Representations	Negative Family Representations
Emotional reactivity				
Emotional Reactivity	.62**	.20	-.15	.40**
Behavioral Dysregulation	.08	.25	.13	-.05
Regulation of exposure to parent affect				
Avoidance	.33*	.24	.01	.20
Involvement	.25	.56**	.26	.19
Internal representations				
Constructive Family Representations	.03	.01	.65**	-.12
Destructive Family Representations	.24	.05	-.38**	.41**
Conflict Spillover Representations	.35**	.13	-.08	.30*

Note: Hypothesized correlations are boldfaced. $df = 54$.

* $p < .05$; ** $p \leq .01$.

Table 6 Correlations between the Security in the Interpersonal Subsystem (SIS) Scales and Multi-Informant Reports of Destructive Interparental Conflict

SIS Scales	Reports of Destructive Interparental Conflict		
	Child ^a	Mother ^b	Father ^c
Emotional reactivity			
Emotional Reactivity	.44**	.19**	.25*
Behavioral Dysregulation	.40**	.21**	.21*
Regulation of exposure to parent affect			
Avoidance	.24**	.07	.15
Involvement	.08*	.17*	.18 ⁺
Internal representations			
Constructive Family Representations	-.53**	-.41**	-.19 ⁺
Destructive Family Representations	.55**	.39**	.23*
Conflict Spillover Representations	.45**	.21**	.23*

^a *df* = 924.^b *df* = 172.^c *df* = 88.**p* < .05; ***p* < .01. ⁺*p* < .10.

ries with destructive interparental conflict. Table 6 presents the correlations between the SIS subscales and child, mother, and father reports of destructive interparental conflict. As hypothesized, exposure to destructive forms of interparental conflict predicted SIS subscales that tapped children's emotional reactivity, internal representations of interparental relations, and regulation of exposure to parent affect, irrespective of informant type. Interparental conflict tended to be a modest-to-moderate predictor of the SIS subscales, as evidenced by mean correlation coefficients of .38, .24, and .21 for child-, mother-, and father-reported conflict, respectively. Mother, father, and child reports of interparental conflict most robustly predicted children's emotional reactivity and internal representations. Although forms of regulating exposure to parent affect were linked with interparental conflict in the hypothesized direction, the pattern and magnitude of correlations were weaker and more inconsistent.

Tests of differences in the magnitude of correlations between the genders (with Fisher's *r* to *z* transformations) revealed that interparental conflict history was generally a better predictor of girls' SIS subscale scores than of boys' scores. Relative to boys, girls' reports of destructive parental conflict were significantly better predictors of avoidance, $r(458) = .32$ versus $r(466) = .16$, $p < .05$; behavioral dysregulation, $r(458) = .47$ versus $r(466) = .35$, $p < .05$; conflict spillover representations, $r(458) = .52$ versus $r(466) = .36$, $p < .01$; and destructive family representations, $r(458) =$

.62 versus $r(466) = .46$, $p < .01$. Reflecting a similar pattern, mother reports of destructive conflict histories were better predictors of behavior dysregulation and conflict spillover representations for girls, $r(91) = .38$ and .43, respectively, than for boys, $r(81) = -.01$ and $-.10$, respectively. Conversely, father reports of interparental conflict were more closely associated with involvement for boys than for girls, $r(44) = .37$ versus $r(44) = -.06$, respectively. Child gender failed to moderate any other correlations.

If emotional insecurity increases children's vulnerability to psychological adjustment as theory suggests, the SIS subscales should also predict children's psychological problems. Thus, as a final test of validity, Table 7 presents the correlations between the SIS subscales and multiple informant reports (i.e., child, mother, father, and teacher) of children's adjustment. The SIS subscales predicted children's adjustment in the majority of analyses, regardless of the type of informant. Correlations between the SIS subscales and child reports of adjustment were generally moderate in magnitude, whereas comparable correlations with mother, father, and teacher reports tended to be more modest in strength. Across different reporters, the SIS subscales were somewhat more robust as predictors of children's internalizing symptoms, *M* correlation coefficient = .29, than externalizing symptoms, *M* correlation coefficient = .22. Although forms of regulating exposure to parent affect did predict children's maladjustment in some cases, SIS subscales that indexed emotional reactivity and internal representations were more consistently and strongly related to children's maladjustment.

Tests for differences in the magnitude of correlations (using Fisher's *r* to *z* transformations) for boys and girls indicated that child gender was only a consistent moderator of the links between the SIS subscales and maternal reports of child adjustment. Relative to boys, mother reports of girls' internalizing symptoms were more strongly related to behavioral dysregulation, $r(81) = .02$ versus $r(91) = .45$, $p < .01$; constructive family representations, $r(81) = .12$ versus $r(91) = -.35$, $p < .01$; and conflict spillover representations, $r(81) = .04$ versus $r(91) = .43$, $p < .01$. Similarly, in comparison with boys, maternal reports of girls' externalizing symptoms were more strongly predicted by constructive family representations, $r(81) = .09$ versus $r(91) = -.41$, $p < .01$, and destructive family representations, $r(81) = .01$ versus $r(91) = .33$, $p < .05$. In contrast, analyses of the moderating role of gender in the prediction of child, father, and teacher reports of adjustment yielded only 1 significant result out of 35: behavior dysregulation was a better predictor of father reports of internalizing

Table 7 Correlations between the Security in the Interpersonal Subsystem (SIS) Scales and Multiple Informant Reports of Children's Psychological Adjustment

SIS Scales	Child Report ^a		Mother Report ^b		Father Report ^c		Teacher Report ^d
	Internalize	Externalize	Internalize	Externalize	Internalize	Externalize	Externalize
Emotional reactivity							
Emotional Reactivity	.48**	.23**	.22**	.06	.32**	.07	.13**
Behavioral Dysregulation	.27**	.49**	.26**	.54**	.21*	.61**	.27**
Regulation of exposure to affect							
Avoidance	.41**	.13**	.15*	.04	.22**	.05	.02
Involvement	.21**	.02	.14 ⁺	.06	.18 ⁺	.11	.00
Internal representations							
Constructive Family Representations	-.21**	-.25**	-.16*	-.18*	-.22*	-.27**	-.18**
Destructive Family Representations	.47**	.26**	.31**	.18*	.45**	.22*	.10**
Conflict Spillover Representations	.51**	.33**	.28**	.25**	.40**	.33**	.11**

^a $df = 924$.^b $df = 172$.^c $df = 88$.^d $df = 711$.* $p < .05$; ** $p \leq .01$. + $p < .10$.

symptoms for girls, $r(44) = .56$, than for boys, $r(44) = -.02$, $p < .01$.

DISCUSSION

Guided by the emotional security hypothesis, the goal of this study was to develop and examine the psychometric properties of a new self-report measure of children's emotional security in the interparental relationship. The SIS Scale was specifically developed to strengthen and diversify the existing measurement batteries for assessing children's responses to interparental conflict. Not only are self-report measures of interparental conflict reactivity substantially limited in number, but the scope of existing instruments is predominantly limited to children's appraisals of interparental conflict (Grych et al., 1992; Tschann, Flores, Pasch, & Marin, 1999). Although such measures may be valuable tools in testing some theoretically guided hypotheses (e.g., Grych & Fincham, 1990), they fail to capture many of the emotional (e.g., emotional reactivity), behavioral (e.g., behavioral dysregulation), and interpersonal (e.g., avoidance, involvement) processes of central significance to the emotional security hypothesis (Davies & Cummings, 1994), the cognitive-contextual framework (e.g., Grych & Fincham, 1990), and other theories (e.g., systems theories, social-learning theory) of interparental conflict (Crockenberg & Forgays, 1996; Emery, 1989). Experimental and analogue methods may provide more comprehensive assessments of children's conflict reactivity across multiple response domains, but the ecological validity of these measures is limited (Stern-

berg et al., 1993). Other measures, such as parent diaries, may assess children's responses to actual parental conflicts, but do not sufficiently capture children's subjective emotional and social-cognitive reactivity to conflict (e.g., Cummings, Zahn-Waxler, & Radke-Yarrow, 1981; Garcia O'Hearn et al., 1997). As a complement to these measures, the SIS was designed to provide a cost-effective strategy for comprehensively measuring multiple response domains (e.g., affect, social-cognition, and behavior) within the naturalistic family context.

Although advances in theory and methodology hinge on delineating the organization and dimensions of emotional security, hypotheses about the actual dimensionality of emotional security have not been examined empirically (Cummings & Davies, 1996; Davies & Cummings, 1998). The emotional security hypothesis specifies that children's emotional insecurity in the face of interparental difficulties is reflected in high levels of (1) emotional reactivity, (2) regulation of exposure to parent affect (e.g., avoidance and involvement in parental discord), and (3) internal representations of the meaning that interparental conflicts have for the general welfare of children and their families. Consistent with this conceptualization, the results indicated that the SIS Scale yields multiple and reliable measures of emotional reactivity (i.e., emotional reactivity), regulation of exposure to parent affect (i.e., avoidance, involvement), and internal representations of interparental relations (i.e., destructive family representations, conflict spillover representations, and constructive family representations).

Evidence for the convergent validity of the SIS Scale 'was gathered, in part, by examining the correspondence between the SIS subscales and children's responses to conflict across different informants, stimuli, and measurement occasions. The SIS subscales were generally associated with mother and father reports of children's overt responses to interparental conflict when the respective constructs assessed theoretically similar response processes. For example, the SIS emotional reactivity subscale was consistently related to parent reports of overt distress reactions to conflict, whereas the SIS involvement subscale was associated with parent reports of children's overt involvement in conflicts. Support for the predictive validity of the SIS Scale was also evidenced by its ability to moderately predict theoretically similar responses to simulated interparental conflicts 6 months later. Overall, the SIS subscales were much better predictor of parent and analogue measures of theoretically similar than dissimilar response processes. In Tables 4 and 5, the mean correlation coefficient among the SIS subscales and theoretically similar responses was .41, whereas the mean correlation among the SIS subscales and theoretically dissimilar responses was .14. Accordingly, these results provide some initial evidence for the convergent and discriminant validity of the SIS subscales.

Nevertheless, it is difficult to draw firm conclusions about the discriminant and convergent validity of the SIS subscales from the tests of relations among the SIS subscales and the other measures of emotional security. The SIS subscales did not always evidence specificity in predicting parent and analogue assessments of theoretically similar response processes. For example, the SIS destructive family representations subscale was not substantially more powerful than the SIS emotional reactivity subscale in predicting the analogue measure of children's negative family representations. Likewise, there was a lack of specificity in associations between the SIS emotional reactivity subscale and parental reports of children's distress reactions of conflict, especially when compared with the negative family representations subscale.

Part of this lack of specificity was expected because the component processes are postulated to share some degree of overlap as indicators of insecurity (Davies & Cummings, 1998). The hypothesized interdependency among the indicators of insecurity obscures a clean test of discriminant validity, however, by failing to compellingly assess whether the SIS subscales are unrelated to theoretically orthogonal variables. Furthermore, differences in the operational definitions of the SIS subscales and their respective analogue and parent assessments added to the com-

plexity of interpreting convergent validity. For example, the SIS subscales were designed to capture children's naturalistic reactions to actual parental conflicts, whereas analogue assessments indexed children's hypothetical responses to conflicts that they may not necessarily witness in the context of the home. Likewise, in contrast to the narrow focus on overt behaviors in the parent report measures of conflict reactivity, the SIS subscales were designed to capture children's subjective experiences, impulses, cognitions, and overt behaviors. Thus, on the one hand, the moderate correlations between the SIS subscales and the other measures of insecurity suggest that the SIS Scale provides a distinct assessment of children's reactivity to parental conflicts that cannot simply be replaced by observer reports or analogue measures. On the other hand, these issues also highlight the importance of conducting more precise tests of convergent and discriminant validity. Given that the parent and analogue measures of child reactivity did not contain valid assessments of children's avoidance or conflict spillover representations, testing the construct validity of the SIS avoidance and conflict spillover representations subscales is an especially critical task.

The SIS Scale was primarily developed to be a valuable tool in elucidating process relations between parental conflict and child adjustment. According to the emotional security hypothesis, experiential histories with destructive interparental conflict undermine children's emotional security. The resulting insecurity is further posited to increase children's vulnerability to adjustment problems (Davies & Cummings, 1994, 1998). In accordance with this pathway of effect, mother, father, and child reports of interparental conflict were consistently related to the SIS subscales. SIS measures of emotional insecurity, in turn, consistently predicted children's internalizing and externalizing problems, regardless of whether the informants were children, mothers, fathers, or teachers. The relations between the SIS subscales and histories of marital conflict and adjustment problems across different informants and contexts (e.g., school) provide some initial evidence for the validity of the SIS.

Patterns of relations among marital conflict histories, the SIS subscales, and children's adjustment problems did vary across the three component processes of emotional security, forms of maladjustment, and child gender. First, reports of interparental conflict and child adjustment were more consistently associated with SIS subscale measures of emotional reactivity and internal representations than were measures of regulation of exposure to parent affect (i.e., avoidance, involvement). Analyses testing the validity of

the avoidance and involvement subscales were particularly weak and inconsistent when different informants were used to report on interparental conflict and child adjustment. Although these findings correspond with earlier failures to find support for avoidance and involvement as mediators of interparental conflict (Cummings & Davies, *in press*), they may also raise questions about how well the SIS Scale assesses avoidance and involvement. Thus, despite our attempts to devise measures of involvement and avoidance that reflect difficulties in restoring emotional security, these scales will likely benefit from additional work. To further strengthen the construct validity of the measure, future researchers might investigate the possibility that conceptualizations of avoidance and involvement may be subsuming distinct dimensions that have different implications for children's security and adjustment.

Second, although the indicators of emotional insecurity were linked with both internalizing and externalizing symptoms, they were especially robust predictors of internalizing symptoms across all family informants. Because this specificity in predictive power is consistent with earlier studies that used different methods (*i.e.*, analogue; Davies & Cummings, 1998; Harold & Shelton, 2000), it bears further elaboration. Indicators of emotional insecurity may increase vulnerability to internalizing symptoms through a similar higher order mechanism. Considerable physical and psychological energy is expended in attempting to preserve a sense of security. Thus, insecurity may sap children of resources necessary to resolve other significant developmental goals, including competency, autonomy, and relatedness. The resulting vulnerability to perceived incompetence, overdependence, and interpersonal difficulties may set the stage for more pervasive internalizing symptoms (*e.g.*, loneliness, withdrawal, and dysphoria). There may also be some specificity in pathways among the components of insecurity and internalizing symptomatology. For example, children who involve themselves in adult problems are likely to incur psychological burdens (*e.g.*, learned helplessness, ruminative coping) that increase their vulnerability to internalizing symptoms.

Third, various gender-role theories posit that boys are socialized to value agency and autonomy, whereas girls are socialized to develop interpersonal concern and sensitivity, especially in close (*i.e.*, family) relationships (Helgeson, 1994; Hill & Lynch, 1983). Greater sensitivity and concern about family relationships may amplify adolescent girls' reactivity to interparental conflict, particularly when they have experienced destructive histories of interparental conflict (see Davies & Lindsay, 2001). For example, previous

research has reported that girls are more likely than boys to respond to parental discord by blaming themselves (*e.g.*, Kerig, 1998), taking too much responsibility for repairing family relationships (Gore, Aseltine, & Colton, 1993), feeling caught in their parents' quarrels (*e.g.*, Buchanan *et al.*, 1991), expressing greater distress and fear (*e.g.*, Hennessy, Rabideau, Cicchetti, & Cummings, 1994; Roecker *et al.*, 1996), and endorsing greater impulses to intervene in adult conflicts (*e.g.*, El-Sheikh, Cummings, & Reiter, 1996; El-Sheikh & Reiter, 1996). Consistent with previous research, the findings of the present study indicated that girls reported greater emotional reactivity, involvement, avoidance, and destructive internal representations than did boys in response to parental arguments. Moreover, when child gender did emerge as a moderator, emotional security dimensions tended to be more strongly related to child adjustment and interparental conflict for girls than for boys.

In the final analysis, there are a number of limitations and recommendations to consider in using and interpreting the SIS Scale. Although samples used for some of the analyses did contain some sociodemographic diversity, the results of the present study were based on children and families who were predominantly European American and middle to lower middle class. The substantial volunteer bias for some of the analyses may further limit the generalizability of the findings. Likewise, the present sample of sixth, seventh, and eighth graders precluded the ability to address the developmental specificity or generality of the findings. Because children undergo significant developmental changes in social, emotional, and cognitive domains over the course of childhood and adolescence, the coherence (*e.g.*, reliability) and patterns of interrelations (*e.g.*, validity) involving the SIS subscales may not be similar across developmental periods. Thus, examining the generalizability of these findings to other samples is an important task for future research (*e.g.*, low SES, clinical samples, minorities, and preadolescents).

Our general recommendation is to use the seven subscales derived from the factor analyses. Some level of flexibility, discretion, and caution should be exercised in selecting subscales, however. First, in some cases, it may be useful to distinguish between components of emotional arousal (*i.e.*, frequent, multiple experiences with distress) and regulation (*e.g.*, dysregulated, prolonged experience of distress), which are subsumed under the emotional reactivity subscale (see the Appendix for items). In fact, additional CFAs indicated that distinguishing between emotional arousal and dysregulation provided a better fit to the data than subsuming the items into a single

emotional reactivity scale. Thus, although many researchers may find it more parsimonious to use the emotional reactivity subscale, retaining emotional arousal and dysregulation measures may be useful for the development of multi-indicator measures of emotional reactivity in multivariate analyses. Thus, our specific recommendation is to use SIS assessments of emotional reactivity in a way that best meets the aims and goals of the specific study.

Second, caution should be exercised in using the behavioral dysregulation subscale. If behavioral dysregulation (e.g., hitting, yelling, and misbehavior) in response to conflict signifies emotional dysregulation or a defensive stance against interpersonal threat, it can be interpreted conceptually as a key dimension of emotional security. If behavioral dysregulation serves another goal, however, such as defiance against authority, its service to emotional security may be called into question. The conceptual overlap between behavioral dysregulation and externalizing symptoms also raises the possibility that misbehavior in the face of conflict is a symptom or artifact, rather than a precursor, of externalizing symptoms. In addition, the marginal psychometric properties of the three-item measure highlight the need to develop a more reliable measure of behavioral dysregulation.

Third, design limitations and inconsistencies in the results underscore the need for more psychometric development and analysis of the SIS subscales. Our failure to comprehensively test the discriminant validity of the scales highlights the need for further tests of the construct validity of the SIS Scale. In light of the lack of sound validity measures for the avoidance and conflict spillover representations subscales, additional psychometric analyses are especially needed for these constructs. Moreover, the SIS avoidance and involvement subscales were not robustly associated with child adjustment and interparental conflict. Although these findings are consistent with earlier research (Cummings & Davies, in press), researchers should exercise caution in using these subscales. Thus, until further analyses are conducted, caution should be exercised in using some of the SIS subscales (e.g., Avoidance).

In sum, not only is the SIS Scale the first instrument developed to assess how children preserve emotional security in the naturalistic context of interparental conflict, but its more general advantage over other measures lies in its ability to assess multiple response domains. In light of the paucity of measures that index child functioning in the context of interparental conflict, evidence of the SIS Scale's reliability and validity suggests that it can be used as a single, efficient method of assessing interparental conflict reactivity.

As new measures become available, it might also be used as a valuable tool in a multimethod, multi-informant measurement battery.

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APPENDIX

SECURITY IN THE INTERPARENTAL SUBSYSTEM (SIS) SCALE

Instructions: Please answer the following questions based on how true they are for you **during the past year**. Answer each question by circling one answer from the four answer choices below.

- 1 = Not at all true of me
- 2 = A little true of me
- 3 = Somewhat true of me
- 4 = Very true of me

Emotional Reactivity

When my parents argue, I feel . . .

- 1) Sad.^a
- 2) Scared.^a
- 3) Angry.^a
- 4) Unsafe.^a

After my parents argue . . .

- 7) It ruins my whole day.^b
- 8) I can't seem to calm myself down.^b
- 9) I can't seem to shake off my bad feelings.^b

When my parents have an argument . . .

- 12) I try to hide what I'm feeling.^b
- 24) I can't stop thinking about their problems.^b

Behavioral Dysregulation

When my parents have an argument . . .

- 13) I yell at, or say unkind things to, people in my family.
- 14) I hit, kick, slap, or throw things at people in my family.
- 19) I try to clown around or cause trouble.

Avoidance

When my parents have an argument . . .

- 11) I keep really still, almost as if I were frozen.
- 15) I don't know what to do.
- 22) I try to be really quiet.
- 23) I end up doing nothing even though I wish I could do something.
- 27) I wait and hope things will get better.
- 29) I feel like staying as far away from them as possible.
- 31) I try to get away from them (for example, by leaving the room).

Involvement

When my parents have an argument . . .

- 6) I feel sorry for one or both of my parents.
- 16) I try to distract them by bringing up other things.
- 18) I try to be on my best behavior (like doing nice things for them).
- 26) I try to solve the problem for them.
- 28) I try to comfort one or both of them.
- 30) I try to pretend that things are better.

Constructive Family Representations

When my parents have an argument . . .

- 34) The family is still able to get along with each other.
- 35) I know they still love each other.
- 36) I know that everything will be okay.
- 43) I believe that they can work out their differences.

Destructive Family Representations

When my parents have an argument . . .

- 38) I worry about my family's future.
- 39) I worry about what they're going to do next.
- 40) I know it's because they don't know how to get along.
- 42) I wonder if they will separate or divorce.

Conflict Spillover Representations

When my parents have an argument . . .

- 21) I feel caught in the middle.
- 33) I feel like they are upset with me.
- 37) I feel like it's my fault.
- 41) I think they blame me.

Note: Items with superscript "a" can be summed to form an emotional arousal subscale, whereas items with a superscript "b" can be summed to form an emotional dysregulation subscale.

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